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Does combined antegrade and selective coronary graft cardioplegia reduce conduction defects in right coronary artery occluded patients?

Sağ koroner arteri oklude hastalarda kombine antegrad ve selektif koroner greft kardiyopleji iletim defektlerini azaltır mı?

Oğuz Uğur [1], Mehmet Kalender [2], Hayat Gökmengil [1], Hakan Bingöl [3]

[1] University of Health Sciences, Konya Training and Research Hospital, Department of Cardiovascular Surgery, Konya, Turkey
[2] University of Health Sciences, Derince Training and Research Hospital, Department of Cardiovascular Surgery, Derince, Kocaeli, Turkey
[3] Aksaray University, Faculty of Medicine, Department of Cardiovascular Surgery, Aksaray, Turkey

Abstract

Aim: Post coronary artery bypass grafting (CABG) procedure conduction disturbances may appear due to many reasons. In this particular study we compared postoperative cardiac rhythm disturbances in right coronary artery (RCA) occluded patients, which cardioplegia disturbed with antegrade aortic and continuous retrograde way versus antegrade plus continue right coronary graft.

Methods: A total of 104 patients with right coronary artery occlusion who underwent isolated CABG procedure between 2011 and 2017 were included. The number of female patients was 43 (41.4%). Left bundle branch, left branch hemi block, and left branch hemi block and 3rd degree atrioventricular blocks were evaluated in the early postoperative period.

Results: The mean age of patients was 55.54±4.42 years (range 46-65 years). There was no statistical difference among groups according to preoperative and intraoperative demographics. Postoperative rhythm disturbances were higher in Group 1 but there was no statistical difference. (Group 1: 9 patients and Group 2: 4 patients. p=0.378). Hospital stay and intensive care unit (ICU) stay had statistically significant difference among groups (Group 1 mean hospital stay was 7.40±1.31 days and Group 2 had mean 6.53±1.19 days, p=0.026 and Group 1 mean ICU stay was days 2.20±0.67 and Group 2 had mean 1.87±0.72 days, p=0.021).

Conclusion: We believe that continuous RCA-selective cardioplegia administration in addition to antegrade cardioplegia may be more successful in terms of prevention of postoperative rhythm disturbances in postoperative CABG applied patients.

Keywords: Cardioplegia, Myocardial protection, Conduction disturbance

Öz

Amaç: Koroner arter bypass grefti (CABG) sonrası iletim bozukluklarının birçok farklı sebebi olabilir. Biz çalışmamızda proksimal sağ koroner arter (RCA) oklude olan hastalarda antegrad ve devamlı RCA selektif kardiyopleji uygulanmasının, aralıklı antegrad ve devamlı retrograd kardiyopleji uygulamasına kıyasla koroner bypass cerrahisi sonrası görülen postoperatif ritm bozukluklarına etkisini değerlendirdik.

Yöntemler: Bu çalışmada 2011 ile 2017 yılları arasında proksimal RCA oklude olan ve izole CABG yapılmış 104 hasta retrospektif olarak değerlendirilmiştir. Bu hastalardan 43 (%41,4)'ü kadın idi. Postoperatif erken dönemde gelişen sağ dal bloğu, sol dal bloğu, sol ön dal hemiblok, sol arka dal hemiblok ve 3. derece atriyoventriküler bloklar değerlendirildi.

Bulgular: Çalışmaya dahil edilen hastaların ortalama yaşı 55,54±4,42 idi (dağılım 46-65 yıl). Preoperatif ve intraoperatif özellikler açısından gruplar arasında anlamlı farklılık yoktu. Ancak postoperatif ritm bozukluğu görülen hastalar sayıca Grup 1 de fazla olsa da istatistiksel anlamlılık kazanmadı (Grup 1: 9 hasta ve Grup 2: 4 hasta p=0,378). Hastane yatış süresi ve yoğun bakımda kalış süresi açısından gruplar arasında Grup 2 lehine anlamlı istatistiksel fark vardı (Grup 1 ortalama hastane yatış süresi 7,40±1,31 gün ve Grup 2 ortalama hastane yatış süresi 6,53±1,19 gün p=0,026. Grup 1 yoğun bakım kalış süresi 2,20±0,67 gün ve Grup 2 yoğun bakım kalış süresi 1,87±0,72 gün p=0,021).

Sonuç: Antegrad kardiyoplejiye ek devamlı RCA selektif kardiyopleji uygulamasının CABG sonrası ritm bozukluğunu önlemede daha başarılı olabileceğini düşünmekteyiz.

Anahtar kelimeler: Kardiyopleji, Myokardiyal koruma, İletim bozuklukları

Corresponding author / Sorumlu yazar:
Oğuz Uğur
Address / Adres: Hacışaban Mahallesi, Yeni Meram Cd. No:97, 42090 Konya Eğitim ve Araştırma Hastanesi, Meram, Konya, Türkiye
E-mail: droguzugur@hotmail.com

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Introduction

The incidence of rhythm disturbance after coronary artery bypass grafting (CABG) was reported as 43%. [1-3]. Particularly, it is known that third degree atrioventricular (AV) block and left bundle branch block are associated with poor postoperative prognosis and high mortality-morbidity rates [4]. The effect of cardioplegia techniques on postoperative rhythm disorders is known. It was shown that total occlusion of right coronary artery (RCA) prevents antegrade cardioplegia from reaching the right ventricle and retrograde cardioplegia is not reliable in right ventricular protection [5, 6]. Right ventricular cardioplegia distribution was demonstrated in one third of the patients with antegrade cardioplegia given in the presence of RCA occlusion. This rate was found as 20% in retrograde cardioplegia [5].

Protection of the right ventricle is a clinical question in terms of the development of postoperative rhythm disturbance. We think that RCA occlusion increases the risk of early postoperative rhythm disturbance due to inadequate protection of the right ventricle with existing cardioplegia applications in RCA proximal occlusion patients. In this study we have examined effect of intermittent antegrade and continue selective RCA graft cardioplegia on postoperative rhythm disturbances in RCA occluded patients.

Materials and Methods

Patients

Study was carried out in accordance with the principles of the Helsinki Declaration. In this single centered study, 104 proximal RCA occluded patients who underwent CABG operation between 2011 and 2017 were evaluated retrospectively. Of these patients, 61 (58.6%) were male and 43 (41.4%) were female. All patients underwent CABG due to coronary artery disease. Preoperative characteristics of the groups are shown in Table 1.

Patients who underwent cardiac procedures in addition to off-pump CABG, emergency operation, presence of high cardiac enzymes, recurrent MI, redo CABG, patients with long term antiarrhythmic drug use with known preoperative chronic rhythm disturbance, patients with severe anemia and thyrotoxicosis were excluded.

Table 1: Preoperative properties

	Group 1 (n=58)	Group 2 (n=46)	p
Age (Mean±SD)	54.74±4.41	55.59±4.94	0.360
Gender (M/F) (%)	32(55.2)/26(44.8)	29(63)/17(37)	0.432
HT (%)	13(22.4)	4(30.4)	0.377
DM (%)	13(22.4)	15(32.6)	0.272
PAD (%)	12(20.7)	7(15.2)	0.640
COPD (%)	7(12.1)	10(21.7)	0.285
Smoking (%)	34(58.6)	31(67.4)	0.418

SD: Standard deviation, M: Male, F: Female, HT: Hypertension, DM: Diabetes mellitus, PAD: Peripheral arterial disease, COPD: Chronic obstructive pulmonary disease

All patients who underwent CABG with coronary artery disease between March 2011 and December 2014 were given intermittent antegrade and continuous retrograde cardioplegia, of these patients, 58 RCA occluded patients were accepted as the first group. After December 2014, selective continuous cardioplegia began to be introduced as passive infusion to RCA-fed region from RCA anastomosis with intermittent antegrade cardioplegia after RCA anastomosis to prevent postoperative rhythm disturbances, 46 patients who were selected between these dates were accepted as the second group.

Surgical Technique

Anesthesia technique was standard for all patients and surgeries were performed by the same surgical team using the same anastomosis techniques. General anesthesia and intratracheal intubation were performed. Chest was opened with median sternotomy. Left internal mammary artery was prepared before pericardiotomy. Left internal mammary artery was used as a routine graft for all patients. Moderate systemic hypothermia was used during cardiopulmonary bypass (CPB). Alpha static acid-base management was accepted and systemic anticoagulation was performed with an activated coagulation time of more than 450 seconds. At the end of the operation heparin was neutralized with protamine sulfate. Chest was closed in a standard technique.

Myocardial Protection Methods

Myocardial protection was decided according to the preference of the surgeon. Isothermic hyperkalemic blood cardioplegia was used in both groups for myocardial protection. Intermittent antegrade and continuous retrograde cardioplegia were performed in all patients, including RCA occluded patients between March 2011 and December 2014. First, cardioplegia was prepared in the presence of 20-30 mEq potassium chloride, 10 mEq sodium bicarbonate, and 1 amp MgSO4 in 1000 mL of pump blood. After cross-clamping, initial cardioplegia was given antegrade with 3-5 minutes at a flow rate of 200mL per minute, a dose of 10-15 mL/kg at 70-90 mmHg pressure. Potassium was then repeatedly applied with an antegrade cardioplegia every 20 minutes by reducing the dose. During distal anastomoses, it was planned to continuously apply retrograde cardioplegia with 20-30 mmHg pressure to avoid excessive pressure on the myocardium, and passive infusion was performed with the effect of gravity (140-150 mL/min). After December 2014; cardioplegia was given antegrade using the same method, and selective RCA was started as a passive infusion to RCA-fed region from RCA graft after RCA anastomosis.

The blood temperature (25-28°C) and hematocrit level (20-25%) collected for cardioplegia were the same as perfusate level.

Electrocardiography

All patients underwent electrocardiography immediately prior to surgery, immediately after surgery, and post-operative daily electrocardiography. Standard was evaluated by a 12- lead electrocardiographic recorder. New right bundle branch block, left anterior hemiblock, left posterior hemiblock, left bundle branch block, or third degree AV blocks after CABG were evaluated.

Statistical Analysis

SPSS 15 (Statistical Package for Social Sciences, SPSS Inc., Chicago, IL, USA) software was used for statistical analysis. Kolmogorov-Smirnov test was used to test normal or abnormal distributions of continuous variables. An independent

sample T-test was used for comparisons between groups with normal distributions of continuous variables. Data are expressed as mean ± standard deviation (SD). The Mann-Whitney U test was applied for variables with non-uniform distribution. The data are expressed in median and quartile intervals. Categorical data were analyzed by Pearson's chi-square test and Fisher's exact test was performed if the expected frequency was below 5 in 20% of all cells. Values of $p<0.05$ were considered statistically significant.

Results

Total mortality was calculated as 2.8% (3 patients) in all groups. In these patients mortality was observed in 1 patient due to low cardiac output syndrome, 1 patient due to respiratory distress and 1 patient due to ventricular fibrillation. No significant difference was found between the mortality rates of the groups (p=0.696). CPB durations, cross clamp times, number of distal anastomoses, intraaortic balloon pump support, and inotropic support rates were similar. There were statistically significant differences between the groups in intensive care unit follow-up periods (p=0.021) and hospitalization durations (p=0.026). The number of coronary bypass vessels applied to the patients in addition to RCA was similar in both groups (Group 1 = 3.1, Group 2 = 3.9).

When the groups were analyzed according to the incidence of postoperative rhythm disturbance, the incidence of postoperative rhythm disturbance was significantly higher in group 1 (p=0.006). Preoperative risk factors had no significant effect on postoperative rhythm disturbance. Age, number of distal anastomoses, CPB time and cross-clamp time did not affect postoperative rhythm disturbances. Multivariate analysis showed that there was no statistically significant difference (p=0.378) in preventing postoperative rhythm disturbance of selective continuous cardioplegia from RCA due to low patient numbers in our study (Table 2). Distribution of postoperative rhythm disturbances according to groups is given in Table 3.

Table 2: Operation and post-operative data

	Group 1 (n=58)	Group 2 (n=46)	p
CPB durations (minute)	55.34±6.78	56.91±7.13	0.255
Cross clamp durations (minute)	31.83±5.26	32.65±5.89	0.454
Anastomosis numbers	3(3-5)	4(3-5)	0.126
Intensive care stay durations (days)	2.20±0.67	1.87±0.72	0.021*
Hospitalization durations (days)	7.40±1.31	6.53±1.19	0.026*
IABP (%)	3 (5.2)	2 (4.3)	0.845
Inotropic support (%)	16 (27.6)	15 (32.6)	0.667
Postoperative rhythm disorder (%)	9 (15.5)	4 (8.7)	0.378
Mortality (%)	2 (3.4)	1 (2.2)	0.696

CPB: Cardiopulmonary bypass, IABP: Intraaortic balloon pump, * p<0.05

Table 3: Postoperative rhythm disorders

	Group 1 (n=58)	Group 2 (n=46)
RBBB (%)	5	2
RBBB+LAHB (%)	1	1
LPHB (%)	1	1
LBBB (%)	1	none
TDAVB (%)	none	none
RBBB+TDAVB (%)	1	none

RBBB: Right bundle branch block, LAHB: Left anterior branch hemiblock, LPHB: Left posterior bundle hemiblock, LBBB: Left bundle branch block, TDAVB: Third degree atrioventricular block

Discussion

Today, surgical experience in open heart surgery increased and advances were made especially in the bypass technique in beating heart. Despite these advances, the use of cardiopulmonary bypass (CPB) and preservation of myocardium in open heart surgery maintains its importance.

Proper protection of the myocardium during CABG reduces operative mortality and morbidity. In order for cardioplegia to be effective, the solution must be sufficiently distributed to all regions of the heart [5-7]. Theoretically, it is known that homogeneous cardioplegia distribution cannot be obtained in the presence of fully occluded coronary arteries [8]. Natural coronary artery anatomy and collateral flow are critical factors for the prevention of cardioplegia distribution and myocardial dysfunction [5].

In Partington et al.'s study [9] of the retrograde perfusion distribution by applying radioactive microspheres through cardioplegic solution in dogs via coronary sinus; they observed an inadequate distribution in the right ventricle. The clinical significance of poor right ventricular perfusion in this study is controversial due to differences in the coronary venous anatomy between animals and humans. A number of different studies showed that retrograde cardioplegic practice provides inadequate and poor right ventricular perfusion in the clinical setting [10-13] Inadequate RV perfusion can be explained by the direct discharge of the right atrium, usually anterior cardiac venous drainage, which releases the free wall of RV [12,14]. Despite the use of antegrade or retrograde cardioplegia, CABG has been reported in the right ventricular dysfunction after surgery [5].

Since antegrade and retrograde cardioplegia caused suboptimal perfusion in RV, it was thought that cardioplegia administration in the antegrade way after early implantation of RCA graft could provide the best protection for RV [12,15]. However, it is present only in publications that suggest that antegrade cardioplegia is adequate to maintain adequate coronary occlusion [16].

There are many studies showing that myocardial ischemia is effective in the development of postoperative rhythm disturbances [17,18]. Lipid peroxidation of free oxygen radicals in the heart cell membrane, especially during ischemia-reperfusion, is thought to be responsible for the severe arrhythmia of the resulting damage [19,20].

Left bundle branch block is widely accepted as a marker of perioperative myocardial ischemia [21], but the prospect of a new right bundle branch after CABG in terms of myocardial ischemia is still controversial [17,18]. In some studies, a clear association was found between new transient and / or permanent right bundle branch block and perioperative CK-MB levels [22]. In the study of Mustonen et al. [17], it is thought that the number of postoperative rhythm disturbances depends on the injuries associated with cold on the myocardium. For this reason, the low rate of postoperative rhythm disturbance in this study may be avoided by hypothermia.

Blood cardioplegia is known to provide more effective intraoperative myocardial protection than crystalloid cardioplegic solutions. Pehkonen et al. [23] found no correlation between cardioplegia technique and postoperative rhythm disturbances and found that left postoperative rhythm disturbance decreased with improved myocardial protection. It has been found that right coronary artery bypasses and stenosis are associated with the formation of numerous new right bundle branches. [24].

In this study, we compared the occurrence of postoperative rhythm disturbance of selective continuous cardioplegia from RCA grafts in addition to antegrade cardioplegia, especially in patients with RCA proximal occlusion, instead of intermittent antegrade + continuous retrograde cardioplegia. No statistically significant difference was observed between the technique used and postoperative rhythm disturbance (p=0.378). Although there was a numerical difference between the two groups in terms of postoperative rhythm disturbance development, there was no statistically significant difference due to the small number of patients. However, we believe that this difference may be statistically significant with a larger study and sufficient number of patients. More extensive work is needed for this.

In our study, we could not find a correlation between the numbers of vessels bypassed and postoperative rhythm disturbances. There was no correlation between preoperative factors and time of aortic cross clamp, CPB time, intra-operative data such as inotropic support requirement and IABP use, cardioplegia applied.

Mosseri et al. [25] found a clear association between postoperative rhythm disturbances and the first septal perforator branch of the left anterior descending artery and found that the lesions in the left anterior descending coronary artery, which was impaired in the first perforator, produced local damage and transmission disorders after CABG.

Our study has some limitations; the number of patients is low, study design is retrospective, and the amount of cardioplegia given may vary between groups due to differences in applied techniques. Furthermore postoperative complications other than low cardiac output were not mentioned. Lastly we have some missing data on comparing of pre and postoperative echocardiographic parameters.

In conclusion, this study of patients with CABG, especially RCA proximal occlusion in patients with antegrade cardioplegia plus selective continuous cardioplegia from RCA graft; there was statistically significant difference among groups considering hospital stay and ICU stay in the favor of Group 1. Although it was not statistically significant we found a decrease in number of postoperative rhythm disorders observed cases with continuous selective RCA graft perfusion. New studies with large number of patients is needed, RCA should be assessed for the effect of selective continuous cardioplegia on postoperative rhythm disturbances from RCA grafts in addition to antegrade cardioplegia in patients with proximal occlusion.

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Hidden details in cases with palpitation complaints: Type D personality depression and anxiety

Çarpıntı şikayeti ile başvuran olgularda gizli kalmış ayrıntılar: D tip kişilik depresyon ve anksiyete

Yasin Taşdelen [1], İbrahim Yağcı [2], Fatih Aydın [3], Yüksel Kıvrak [4]

[1] Aydin State Hospital, Department of Psychiatry, Aydin, Turkey
[2] Kars State Hospital, Department of Psychiatry, Kars, Turkey
[3] Eskisehir State Hospital, Department of Cardiology, Eskisehir, Turkey
[4] Kafkas University School of Medicine, Department of Psychiatry, Kars, Turkey

Abstract

Aim: In patients with complaints of palpitation and where an organic cause cannot be determined, the rate of type D personality and depression and anxiety scores are unknown. Knowing these may contribute to the understanding and treatment of the etiology of the palpitation.

Methods: Patients who applied to Cardiology Polyclinic with palpitation complaint, whose possible organic etiologies of the palpitation were excluded and those over 18 years old were included in the study. Sociodemographic data form, Type D Personality Scale, Hospital Anxiety and Depression Scale were used in the study.

Results: Depression scores were higher in the patient group ($p<0.05$). When the mean distribution of anxiety scores were examined, no significant difference was found between the groups. D type personality was detected in 60% of the patient group and 22% of the control group. When the results of Spearman's correlation analysis made for the relationship between type D presence of patient and control group and age, gender, marital status, depression and anxiety scores were examined, there was a negative, weak and significant relationship between type D presence and educational status in the patient group ($p<0.05$). There was a strong positive correlation between type D presence and depression and anxiety scores in the patient and control group subjects ($p<0.05$).

Conclusions: Knowing that type D personality and depression which are proven to affect many cardiologic diseases are also frequent in palpitation may help better understanding and treatment of palpitation.

Keywords: Anxiety, Depression, Palpitation, Type D personality

Öz

Amaç: Çarpıntı şikayeti olan ve organik bir neden tespit edilemeyen hastalarda, D tipi kişiliğin oranı ve depresyon, anksiyete puanları bilinmemektedir. Bunların bilinmesi çarpıntının etiyolojisini anlamada ve tedavisinde katkı sağlayabilir.

Yöntemler: Kardiyoloji Polikliniğine çarpıntı şikayeti ile başvuran, çarpıntının olası organik etiyolojileri ekarte edilmiş olan ve 18 yaşından büyük hastalar araştırmaya dâhil edilmiştir. Çalışmada sosyodemografik veri formu, D Tipi Kişilik Ölçeği, Hastane Ansiyete ve Depresyon Ölçeği kullanıldı.

Bulgular: Depresyon puanları hasta grubunda yüksek bulundu ($p<0,05$). Hasta grubundakilerin %60'ında, kontrol grubunun %22'sinde D tipi kişilik tespit edildi. Hasta ve kontrol grubu olguların D tipi varlığı ile yaş, cinsiyet, medeni durum, depresyon ve anksiyete puanları ilişkisi için yapılan Spearman korelasyon analizi sonuçları incelendiğinde D tipi varlığı ile; Hasta grubunda eğitim durumu arasında negatif yönde, zayıf ve anlamlı ilişki bulundu ($p<0,05$). Hasta ve kontrol grubu olgularda D tipi varlığı ile depresyon ve anksiyete puanları arasında güçlü, pozitif yönde ve anlamlı ilişki bulundu ($p<0,05$).

Sonuç: Birçok kardiyolojik hastalıkta etkili olduğu bilinen D tipi kişiliğin ve depresyonun, çarpıntıda da fazla olduğunun bilinmesi palpitasyonun etiyolojisini anlamada ve tedavisini yapmada katkı sağlayabilir.

Anahtar kelimeler: Anksiyete, Depresyon, Çarpıntı, Tip D kişilik

Corresponding author / Sorumlu yazar:
İbrahim Yağcı
Address / Adres: Kars Harakani Devlet Hastanesi, Kars, Turkiye
E-mail: ibrahimyagci53@hotmail.com

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Introduction

Type D personality was defined as a personality disorder associated with negative affectivity (depressive affect, anxiety, anger, aversion to hostility) and high levels of social inhibition [1]. Type D personality has a tendency to avoid social relations, have negative feelings, and to avoid these negative emotions. Type D individuals generally have weak personal ties with other people and tend to feel uncomfortable with strangers [2].

Type D personality in cardiac patients has been shown to be a cardiovascular risk marker in relation to mental health, quality of life, morbidity and mortality [2]. Individuals with type D personality are at risk of developing psychiatric and medical disorders. For this reason, type D personality can be considered as a psychopathological condition that can affect the health and life span and require psychological and or pharmacological treatment.

Patients with type D personality disorder have anxiety, depressive symptoms, somatic complaints and suicidal thoughts. Cardiac diseases are also common in patients with type D personality disorder and are independent predictors of cardiac symptoms [3]. The association between type D personality and cardiovascular disease has been examined and it is concluded that the type D personality is independently associated with Coronary Heart Disease and hypertension. Studies have shown that people with coronary artery disease with type D personality may be expected to develop depressive symptoms which can be persistent [4,5].

Palpitations are defined as rapid, strong, or irregular pulses that are felt on the head and are a common symptom among outpatients. Etiology includes heart diseases (43%), psychiatric causes (31%), other causes (10%) and unknown reasons (16%) [6,7]. Panic disorder and anxiety disorders are the main psychiatric disorders that cause palpitation [8]. Even when there is a physical illness to explain the palpitation, the intensity of palpitation felt and expressed in the cases accompanied by a psychiatric disorder appears to be increasing.

In patients with complaints of palpitation and where an organic cause cannot be determined, the rate of type D personality and depression and anxiety scores are unknown. Knowing these may contribute to the understanding and treatment of the etiology of the palpitation. We also think that this study will contribute to the literature because of the absence of another study that examines palpitation and type D personality in the World.

Materials and methods

Patients over 18 years old who applied to out-patient clinic of Cardiology with palpitation complaint were included in the study. During the study, the possible organic causes of palpitation were eliminated with the exclusion of patients with anemia, hypothyroidism, hyperthyroidism, diagnosed arrhythmia, and those who have pathological findings in their ECO-ECG and 24-hour ECG Holter records. Patients under psychiatric treatment were excluded from the study. Sociodemographic data form, Type D Personality Scale, Hospital Anxiety and Depression Scale were given to the subjects and they were asked to fill these forms. The results were evaluated by a psychiatrist.

This prospective case-control study has been approved by the ethics committee of our university. Informed consent was received from the patients included in the study. This research was conducted according to the principles of the World Medical Association Declaration of Helsinki "Ethical Principles for Medical Research Involving Human Subjects".

Data Collection Tools

Sociodemographic Data Form: It is a patient evaluation form prepared by the researcher that includes demographic findings such as age, gender, marital status, educational status, chronic illness history, smoking and alcohol use.

Type D Personality Scale DS-14: Type D Personality Scale (DS-14) is developed to assess Negative Affectivity (NA), Social Inhibition (SI) and Type D. DS-14 scale includes 14 items and it is composed of two sub-scales measuring NA and SI. Each item is a Likert type scale scored between 0-4 [9]. Both sub-scales have a cut-off point ≥10. Test-retest validity is good and internal validity is high in both sub-scales. The Cronbach α values were 0.88 for NA and 0.86 for SI. The psychometric quality and prognostic power of the scale were statistically proven in Belgian cardiac patients. Structural and internal consistency of NA and SI subscales was confirmed in studies conducted in Danish and German cardiac patients [10,11].

Hospital Anxiety Depression Scale (HAD-S): It is a self-assessment scale developed by Zigmond et al. [12] to determine the risk in terms of anxiety and depression in patients, and measure the level and severity change. Validity and reliability of Turkish form was done by Aydemir et al [13].

Statistical Analysis

SPSS 15.0 program was used for statistical analysis of the data. Pearson Chi-Square and Fisher's Exact test were used to compare categorical data among the groups. For comparing data between the groups, independent sample t test was used for normal data and Mann Whitney U tests were used for non-normal data. The relationship between type D presence and other variables was assessed with Spearman's rho. $p<0.05$ was considered statistically significant.

Results

There were 31 female and 19 male patients in the patient group and 28 female and 22 male volunteers in the control group. The mean age of the patient group was 38.8±10.8 and the mean age of the control group was 39.9±11.2. There was no significant difference between the mean age of the patients and control group ($p>0.05$) (Table 1). There was no significant difference between groups in terms of gender, education and marital status ($p>0.05$).

When HAD-S scores of the groups were examined, there was no significant difference between male and female depression scores ($p>0.05$). The depression scores of the patient group were significantly higher than the depression scores of the control group ($p<0.05$). When the mean distribution of anxiety scores according to gender of patients and control group were examined, there was no significant difference between the groups ($p>0.05$) (Table 2).

Table 1: Sociodemographic characteristics of the study and control groups

		Study group (n:50)	Control group (n:50)	p
Age (Mean±SD)		38.8±10.8	39.9±11.2	0.618
Sex	Female	31	28	0.542
	Male	19	22	
Marital status	Married	35	38	0.499
	Single	15	12	
Education	Preliminary	24	26	0.938
	High school	24	22	
	University	2	2	
Type D Personality	Present	30	11	<0.001*
	Absent	20	39	

SD: Standard deviation, * p<0.05

Table 2: Comparison of depression and anxiety scores of the study and control groups

	Study group (n:50) Mean±SD	Control group (n:50) Mean±SD	p
Depression Scores	6.1±2.7	4.5±2.6	0.003*
Anxiety Scores	6.1±3.1	4.9±2.8	0.121

SD: Standard deviation, * p<0.05

Type D personality was detected in 60% of the patient group and 22% of the control group. When the results of Spearman's correlation analysis made for the relationship between type D presence of patient and control group and age, gender, marital status, depression and anxiety scores were examined, there was a negative, weak and significant relationship between type D presence and educational status in the patient group (p<0.05) (Table 3). There was a strong positive correlation between type D presence and depression and anxiety scores in the patient and control group subjects (p<0.05) (Table 3).

Table 3: The association of type D presence, age, gender, marital status and depression and anxiety scores between study and control groups

	Study group		Control group	
	Type D			
	r	p	r	p
Age	0.188	0.190	0.095	0.510
Gender	0.135	0.351	0.113	0.435
Education	-0.285	0.045*	-0.046	0.753
Marital status	0.089	0.538	-0.041	0.779
Depression	0.773	<0.001*	0.655	<0.001*
Anxiety	0.683	<0.001*	0.674	<0.001*

* p<0.05

Discussion

Personality traits are considered a strong predictor of medical outcomes of cardiac diseases [14]. Type D individuals have been reported to be more prone to heart disease in particular. It has been shown that Type D personality affects cardiac disease susceptibility and prognosis, regardless of the person's emotional state [4,15].

Type D personality is characterized by a tendency to negative feelings and by controlling these feelings by avoiding social relationships [1]. The suppression of feelings has been found to be associated with an increase in cardiovascular reactivity and a decrease in heart rate variability [16,17]. We thought that having a Type D personality may be involved in the etiology of palpitations in the patients applied to cardiology polyclinic with palpitation complaints and where a cause could not be found. We found that the rate of type D personality was significantly higher in the study group than in the control group, and that there was a strong correlation between palpitation complaints and type D personality. Palpitations can lead to anxiety and low quality of life, and vice versa; That is, anxiety and low quality of life can trigger palpitations. The relationship between psychological status and cardiovascular reactivity has been shown in the pathogenesis of many cardiovascular diseases such as coronary artery disease and hypertension. Significant changes are observed in blood pressure and heart rate, and there is also an important relationship between the level of anxiety and arrhythmia [18].

Studies have shown that the prevalence of type D personality in healthy groups may reach up to 32% [10]. In the control group of our study this rate was 22% and in the study group it was 60%.

When we look at the relationship between type D personality and gender; some studies indicate that type D personality is seen more often in women, while others say that type D personality is not significantly related to sex [2]. In our study, there was no statistically significant relationship between gender and type D personality even though Type D personality presence was more in females in the study group and more in males in the control group.

Our study shows that type D personality may be an independent risk factor for palpitations. Type D increases the level of cortisol in the individual and also increases alertness and sleepless time. Type D personality has been associated with increased levels of inflammatory biomarkers in patients with cardiovascular disease [20-22] and decreased endothelial function [23]. It has been observed that there is an increase in proinflammatory cytokine levels and activities in type D personality and disorders in cytokine network [21]. Cytokines with increased activity and amount, increased levels of cortisol, and elevated cardiac oxidative stress causes imbalances in heart rate and rhythm which lead to inappropriate tachycardia and bradycardia in patients with type D. We think that patients may have a complaint of feeling pulse more due to increased heart output independent of heart rate, which are called palpitations. There are also studies showing that individuals with type D personality have increased heart rates, increased ventricular arrhythmia and cardiac output [24,25].

Biological factors such as inflammation and endothelial dysfunction may cause depression [26]. There are different opinions about the relationship between depression and inflammation. First, depressive symptoms can be seen with the cause of the disease resulting from the inflammation. Second, proinflammatory cytokines resulting from inflammation may cause depressive symptoms [26]. In our study, depressive symptoms were more frequent in people who showed D personality traits. It supports the results of our study.

Exaggerated symptoms of patients with type D personality may be the result of incorrect illness perceptions. People with personality traits that are characterized by high

negative mood emotions tend to exaggerate normal body sensations [27]. In addition, these people tend to believe that their illness will be more severe [28]. The reason for this may be deterioration of the health condition, or it may be a result of non-self-management behavior. Type D Personality is associated with an unhealthy lifestyle [29]. Smoking, alcohol consumption, sedentary lifestyle is frequent in these people. These are important risk factors for cardiac diseases. Psychosocial and behavioral interventions to change functional illness beliefs and health behaviors can lead to the improvement of mental and physical conditions of type D patients.

There are some limitations in our study. Electro-physiologic examinations to detect very rare causes of disease-related disturbance (because it is not routinely lightening the etiology of the trauma and is an invasive method) have not been applied. When the hospital anxiety and depression scale scores were examined, the depression score of the study group was higher than the control group and this was statistically significant. Anxiety scores were not significantly different between the two groups. There was a negative, weak and statistically significant relationship for educational status in the study group; That is, as the level of education increases, the personality type D decreases. To support this hypothesis, there is a need for studies with larger populations to study the relationship between education and type D personality.

In conclusion, additional information has been given that type D personality increases risk of organic heart failure such as heart failure, atrial fibrillation, coronary heart disease, and worsens the prognosis. People with type D personality without organic heart failure also suffer from palpitations and possibly by increasing the frequency of arrhythmia. We think that type D personality should be kept in mind as an independent cause in palpitations etiology and should be considered when approaching palpitations. In those who have palpitations, both type-D personality ratios and depression scores are higher. To identify that Type D personality and depression -which are known to be effective in many cardiovascular diseases- are also highly effective in palpitations may help to understand and treat the etiology of palpitations. In patients who apply with palpitation complaint, after excluding the possible organic etiologies of the palpitation, it is important to determine the appropriate treatment modality with detailed mental status examination and a study to probe a psychiatric disorder, and to avoid unnecessary advanced, expensive examinations and to prevent deterioration of the quality of life of the patient.

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Reliability and validity of the Turkish version of short form 36 (SF-36) in patients with rheumatoid arthritis

Romatoid artritli hastalarda Türkçe kısa form 36'nın (SF-36) güvenilirlik ve geçerliliği

Başak Bilir Kaya [1], Afitap İçağasıoğlu [2]

[1] Erenköy Physical Therapy and Rehabilitation Hospital, Istanbul, Turkey
[2] Medeniyet University, Goztepe Training and Research Hospital, Department of Physical Therapy and Rehabilitation, Istanbul, Turkey

Corresponding author / Sorumlu yazar:
Başak Bilir Kaya
Address / Adres: 19 Mayıs Mah. Şemsettin Günaltay Cad. Sultan Sok No:14, Erenköy Kadıköy, İstanbul, Türkiye
E-mail: basakbilir@gmail.com

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Abstract

Aim: Investigating reliability and validity of the Turkish version of short form-36 (SF-36) in patients with rheumatoid arthritis

Methods: Demographic data of the patients with rheumatoid arthritis were recorded. Health Assessment Questionnaire (HAQ) and Short Form 36 (SF-36) were filled out. Disease activities were computed using Disease Activity Score 28 (DAS-28). Patients were recalled after three months and were asked to state how they felt compared to their first visit, and the same tests were repeated.

Results: 141 patients were admitted (9.9% male, 90.1% female). In the reliability study of SF-36, the Cronbach alpha value of the subscales varied in the range 0.792-0.992, hence SF-36 was found to be highly reliable. The item total score correlations were computed for each subscale and were found to be in the ranges: 0.436-0.840 for physical functioning, 0.887-0.895 for role function (physical), 0.861-0.958 for pain, 0.564-0.892 for general health perception, 0.702-0.841 for vitality (energy/fatigue), 0.949-0.952 for social functioning, 0.396-0.473 for role function (emotional) and 0.456-0.824 for mental health. The SF-36 scores from two consecutive visits spaced 3 months apart were compared and the p values were found to be greater than 0.05. The validity study was conducted for the 63 patients whose reported conditions did not change between two visits. The test-retest relation was evaluated using intra-class correlation coefficients, which ranged from 0.51 to 0.78 and the correlations of the two tests were found to be statistically significant. The comparison of SF-36 scores from two consecutive visits, all with $p>0.05$, showed no statistically significant changes.

Conclusion: The Turkish version of SF-36 was found to be reliable and valid in patients with rheumatoid arthritis.

Keywords: Reliability, Validity, Rheumatoid arthritis, SF-36

Öz

Amaç: Romatoid artritte Türkçe SF-36'nın güvenilirlik ve geçerliliğini araştırmak.

Yöntemler: Çalışmaya alınan Romatoid artritli hastaların demografik özellikleri kayıt edildi. Sağlık değerlendirme anketi (HAQ) ve SF-36 formları doldurduldu. Hastalık aktiviteleri DAS-28 kullanılarak hesaplandı. Hastalar 3 ay sonra tekrar çağırılarak kendilerini ilk gelişlerine göre nasıl hissettikleri soruldu ve ilk gelişlerinde yapılan testler tekrarlandı.

Bulgular: Çalışmadaki 141 hastanın %9,9'u erkek; %90,1'i kadındır. SF-36'nın güvenilirlik çalışmasında ölçek alt boyutlarının Cronbach alfa değerleri 0,792-0,992 arasında değişmekte olup, bunun sonucunda SF-36 yüksek düzeyde güvenilir bulunmuştur. Madde-toplam puan korelasyon katsayıları da her bir alt ölçek için ayrı ayrı hesaplanmıştır. Fiziksel fonksiyonda 0,436-0,840, fiziksel rol güçlüğünde 0,887-0,895; ağrıda 0,861-0,958, sağlığın genel olarak algılanmasında 0,564-0,892; vitalite (enerji)'de 0,702-0,841; sosyal fonksiyonda 0,949-0,952; emosyonel rol kısıtlamasında 0,396-0,473 ve mental sağlıkta 0,456-0,824 arasında bulunmuştur. Daha sonra her iki SF-36 ölçümü karşılaştırılmış ve $p>0,05$ olduğu için ikinci ölçümlerde ilk ölçümlere göre bir farklılık saptanmamıştır.

SF 36 geçerlilik çalışması, beyana dayalı durumları ikinci gelişlerinde ilkine göre değişmeyen 63 olgu üzerinde yapılmış olup; test tekrar test arasındaki korelasyon, intra-class korelasyon katsayıları ile değerlendirildiğinde her iki uygulama arasında istatistiksel olarak anlamlı ilişki görülmektedir. Bu çalışmada korelasyon katsayıları 0,51 ile 0,78 arasında değişmektedir. SF-36 puanlarının ilk ve ikinci ölçümleri arasında istatistiksel olarak anlamlı farklılık görülmemektedir ($p>0,05$).

Sonuç: Sonuç olarak Türkçe SF-36 Romatoid artritli hastalarda güvenilir ve geçerli bulunmuştur.

Anahtar kelimeler: Güvenilirlik, Geçerlilik, Romatoid artrit, SF-36

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Introduction

Patients with rheumatoid arthritis often report symptoms that impair their quality of life. There is no clear idea of what is the best measure to use for the assessment of this chronic disease, and the factors that most of the scales take into account are limited to acute phase reactants such as joint involvement and sedimentation (ESR). Many researchers also include the disability part of the health assessment questionnaire (HAQ) to be more comprehensive [1]. HAQ currently also used to assess physical disability in rheumatoid arthritis. Its' validation study was carried out in many countries including England and Turkey [2]. It is often used in the United States to assess the outcome of observational and clinical trials [3,4]. One study showed that the most commonly used health status questionnaire in patients with outpatient rheumatology clinics is HAQ, although it is not known exactly how much it affects treatment decisions [5]. There is increasing evidence that HAQ is predictive for progression of the disease in the long term [6,7] and short term [8]. Although it is a valuable measure of physical function losses caused by RA, it does not include emotional and psychological problems. It cannot show exactly how the patient perceives his illness causes loss of quality of life. In addition, HAQ attaches more importance to the functions of the upper limb than to evaluate all areas of the physical function. It is particularly important to use health assessment questionnaire that measures quality of life in chronic illnesses. Ideally, this health assessment questionnaire should include general health information that is valid (accurate measurement of expected outcome) and reliable (which may give similar results when repeated), acceptable to patients and clinicians, applicable in intensive clinical conditions, and specific for the disease [9, 10]. SF-36 (short form 36) [11] is a general health screening survey designed in the United States. It has been shown to be valid and acceptable in a healthy population and reliability studies have been performed in different patient groups [12]. Koçyiğit et al. [13] translated SF 36 into Turkish and evaluated the reliability and validity of 50 patients with osteoarthritis and 50 patients with low back pain. Similar to HAQ, the patient-centered approach takes the patient's ill effects into the patient rather than the disease and blood test-focused outcomes used by the clinician. It differs from HAQ because the questions are designed to examine eight different subgroups of health and include physical activity constraints that the patient perceives as disease-related. However, there is no study on the reliability and validity of Turkish SF-36 in RA patients. The aim of this study is to assess the reliability and validity of Turkish SF-36 in RA patient group.

Materials and methods

One-hundred-forty-one rheumatoid arthritis patients who admitted to outpatient clinic of department of physical therapy and rehabilitation of Goztepe training and research hospital were taken into the study.

Inclusion criteria were designated as: patient older than 18 years old and younger than 90 years old, having RA diagnosis according to the 1987 ACR criteria. Exclusion criteria were designated as: patients with advanced heart failure (grade 3-4), acute or chronic kidney failure, and malignancy.

The health assessment questionnaire (HAQ) and SF-36 were used to measure quality of life after the demographic characteristics of the patients were recorded. The Health Assessment Questionnaire (HAQ) is composed of 20 questions and questions eight activities. They include dressing and grooming, arising, eating, walking, hygiene, reach and grip. Each answer is rated from 0 to 3 [14].

The DAS28 score in the evaluation of disease activity was calculated as follows.

DAS28 = 0.56 x sqrt(tender28) + 0.28 x sqrt(swollen28) + 0.70 x ln (ESR) + 0.014 x GH

There are special types of calculators and software that make these calculations and such software is used in calculations. The value obtained was used to classify the disease activity as follows; the patient is in remission at 2. 4 or below; between 2.4 and 3.6: low disease activity; between 3.6 and 5.5: moderate disease activity; over 5.5: high disease activity [15].

The hourly sedimentation value used to assess disease activity was noted from the routine laboratory tests performed by the patients and the Rheumatoid Factor was taken as positive or negative evaluation from any test performed during or after the diagnostic phase. Patients were recalled after 3 months and asked how they felt themselves based on their first arrival. Then they are divided to three groups according to their answers: better, same and worse. Then the tests that were carried out at the first arrival were repeated.

Statistical Analysis

For the statistical analyzes, the NCSS 2007 & PASS 2008 Statistical Software (Utah, USA) program was used. When the study data were evaluated, descriptive statistical methods (mean, standard deviation (SD), median) as well as Paired sample t test were used for intra-group comparison of normal distribution parameters and Wilcoxon sign test was used for intra-group comparison of non-normal distribution parameters. Mc-Nemar test and Cohen Kappa coherence analysis were used for the comparison of qualitative data. Spearman's correlation analysis and Intra-class Correlation Coefficient were used to evaluate the inter-parameter relations. The results were assessed at a 95% confidence interval (CI) and a significance level of $p < 0.05$.

Results

Demographic Characteristics

The study was carried out on a total of 141 cases between the dates of 01.09.2006 - 01.04.07. Patents' ages ranged from 22 to 80 years. 9.9% of the patients (n = 14) were male; 90.1% (n = 127) were females. The additional diseases and habits of the cases are shown in Table 1 and the distribution of drugs used is shown in Table 2.

Disease Activity Measurements

When we evaluated the activation classification according to the DAS 28 total score by McNemar test at the 2nd measures according to the first measures, we found that there was no significant difference between them with the significance close to each other ($p>0.05$).

Table 1: The Additional diseases and habits

	n	%
Additional Disease	59	41.8
Hepatitis B	2	1.4
Tuberculosis	10	7.1
Hypertension	33	23.4
Coronary Disease	14	9.9
Diabetes	16	11.3
Alcohol Abuse	2	1.4
Tobacco Use	18	12.8

Table 2: Drugs used by the patients

	n	%
Methylprednisolone	59	41.8
Prednisolone	2	1.4
Methotrexate	10	7.1
Chloroquine	33	23.4
Hydroxychloroquine	14	9.9
Lenflunamide	16	11.3
Sulfasalazine	2	1.4
Anti TNF	18	12.8
Nonsteroid anti-inflammatory	134	95.0
Bisphosphonate	134	95.0

Table 3: The values of the DAS 28 first and second measurements

	1st measurement Mean±SD	2nd measurement Mean±SD	p[1]
DAS 28.1	3.23±2.19 (3)	3.44±2.16 (3)	0.642
DAS 28.2	1.42±2.21 (0)	1.05±1.85(0)	0.016*
DAS 28.3	2.38±2.77 (2)	1.67±2.45 (1)	0.001**
DAS 28.4	22.10±15.49(18)	26.58±18.97 (22)	0.002**
DAS 28.5	3.49±11.95 (0.69)	1.69±5.45 (0.54)	0.140
DAS 28.6	3.37±2.17 (3)	3.35±2.12 (3)	0.397
DAS 28.7	1.94±0.91 (2)	1.53±0.92 (1)	0.001**
Total score	4.09±2.35 (3.39)	3.64±2.18 (2.92)	0.018*

[1] Wilcoxon Signed Rank test, *p<0.05, **p<0.01

DAS28.1: VAS (visual analog scale pain)
DAS28.2: Swollen joint (SW)
DAS28.3: Tender joint (TEN)
DAS28.4: Sedimentation (ESR)
DAS28.5: CRP
DAS28.6: The patients' general health (GH)
DAS28.7: Global disease activity (By doctor)

The non-coincidence rate is 32.6% (Cohen Kappa: 0.364). In the first measurement, the remission rate was 25.6% while in the second measurement it was 30.2%. low activity increased by 27.1% in the first measurement and 32.6% in the second measurement; at the first measurement, the moderate activity was seen as 22.5% in the second measurement and as 21.7% in the first measurement, the high activity rate was 24.8% in the first measurement and it decreased to 15.5% in the second measurement.

The values of the DAS 28 first and second measurements based on sub-parameters are presented in Table 3. When we evaluate the relationship between the DAS 28 initial measurements and the second measurements according to Spearman's correlation analysis, there is a significant correlation between the two measurements (p<0.01).

SF-36 Scale Validity and Reliability Analysis

The Cronbach alpha coefficient was used for the Validity and Reliability Analysis. Cronbach alpha coefficient is a measure of the similarity and closeness of individual points to each other in cases where individual points are found by collecting answers to questions on a scale containing k questions. The alpha coefficient is used to question whether the problem on the scale has formed a whole to explain or question a heterogeneous structure [16].

The evaluation of the alpha coefficient is based on the following criteria:

- If 0.0 <0.40, the scale is not reliable.
- If 0.40 <0.60 the scale has low reliability
- If 0.60 <0.80 is quite reliable
- If 0.80 <1.00, the scale is a highly reliable one

The SF-36 scale consists of 8 sub-dimensions. The subscales of the SF-36 questionnaire were validated for reliability. The Cronbach's alpha coefficients of the SF-36 subscales are shown in Table 4.

Table 4: The Cronbach's alpha coefficients of the SF-36 subscales

	Number of Question	Cronbach alpha coefficient
Physical Functioning	10	0.889
Physical Role Functioning	4	0.992
Pain	2	0.792
General Health	5	0.818
Vitality(energy)	4	0.816
Social Function	2	0.908
Emotional Role Functioning	3	0.836
Mental Health	5	0.918

Table 5: SF-36 measurements evaluation (n=129)

	1st measurement Mean±SD	2nd measurement Mean±SD	p[1]
Physical Functioning	68.83±20.97	72.17±18.38	0.065
Physical Role Functioning	55.03±44.56	58.52±45.33	0.391
Pain	58.64±22.10	59.79±22.24	0.555
General Health	49.44±21.56	47.32±19.78	0.215
Vitality(energy)	43.79±19.23	43.52±17.64	0.862
Social Function	72.28±26.23	76.35±23.55	0.107
Emotional Role Functioning	54.52±46.01	56.84±47.39	0.616
Mental Health	55.47±18.46	57.98±18.02	0.112

[1] Paired Samples t-test

Cronbach alpha values of scale subscales ranged from 0.792 to 0.992 and our scale was found to be highly reliable. The item-total score correlation coefficients for each subscale were calculated separately for the related items. It was found between 0.436-0.840 in physical function, 0.887-0.895 in physical role difficulty, 0.861-0.958 in pain, 0.564-0.892 in general perception of Health, 0.702-0.841 in Vitality (energy), 0.949-0.952 in social function, 0.396-0.473 in emotional role restriction, and 0.456-0.824 in mental health.

The evaluations made by collecting sub-dimension scores for both measurements are shown in Table 5. In the first measurement, 141 cases were applied; in the second measure this number dropped to 129. Our evaluations were made on 129 cases. There was no statistically significant difference between the changes of physical function, physical role function, pain, general health, vitality, social function, emotional role function and mental health scores after the first measurement (p>0.05).

In their second visit, the patients were asked about their previous development and the following results were obtained: the patients were worse by 17.1%, while 48.82% remained the same, and 34.1% were better. The SF-36 validity study will be based on 63 cases that have not changed and remained the same.

As shown in Table 6, there was no statistically significant difference between the physical function, physical

role function, pain, general health, Vitality, social function, emotional role and changes in mental health scores after the first measurement (p>0.05). The rise in social function score was found to be at the limit of significance.

Table 6: Evaluation of SF36 (n=63)

	1st measurement Mean±SD	2nd measurement Mean±SD	p[1]
Physical Functioning	69.36±19.80	72.69±17.36	0.154
Physical Role Functioning	58.73±43.10	64.28±44.61	0.362
Pain	61.30±21.49	63.79±18.26	0.313
General Health	49.50±21.29	49.52±16.79	0.995
Vitality(energy)	41.98±19.47	43.65±18.07	0.406
Social Function	74.20±25.18	80.75±20.05	0.050
Emotional Role Functioning	62.96±44.03	60.31±46.70	0.685
Mental Health	54.03±18.66	57.64±17.22	0.116

[1] Paired Samples t-test

SF 36 scale scores were evaluated on 63 patients who did not change at first visit according to their first visit. Correlation between test and re-test were evaluated with intra-class correlation coefficients and statistically significant relationship is observed between the two applications (Table 7). The correlation coefficients ranged from 0.51 to 0.78. The highest difference in the subsequent measures according to the first measure is seen in the social function score with 6.54 points.

Table 7: SF 36 Test re-test validity results (n=63)

SF 36 (0-100)	Intra-Class Correlation Coefficients	SF 36 scores Median Difference	SD	%95 CI
Physical Functioning	0.681	-3.33	18.3	-7.94-1.27
Physical Role Functioning	0.572	-5.55	48.03	-17.65-6.54
Pain	0.689	-2.49	19.43	-7.38-2.40
General Health	0.636	-0.01	19.82	-5.00-4.97
Vitality(energy)	0.785	-1.66	15.81	-5.64-2.31
Social Function	0.518	-6.54	25.97	-13.08-0.001
Emotional Role Functioning	0.523	2.64	51.60	-13.35-15.64
Mental Health	0.664	-3.61	18.01	-8.15-0.91

The comparison of two measurements of HAQ scores was made with Wilcoxon Signed Rank test and no statistically significant difference was observed (p>0.05). There was a statistically significant difference between the first physical function scores and HAQ 1 scores on the negative side and statistically 85.3% (p<0.01). Physical role score with a score of 60.1%, pain score was 61.7%; with a general health score of 42.5%, vitality score of 40.5%, social function score of 55.2%, emotional role function score of 34.9% and a mental health score of 29.6% in the negative direction (Table 8).

There was a statistically significant correlation (81.0%) between the second physical function scores and HAQ 2 scores on the negative side (p <0.01). Physical role score with a score of 62.5% with pain score at 65.9%; with a general health score of 45%, with vitality score of 48.7%, social function score of 51.3%, emotional role function score of 46.6% and a mental health score of 44.9% in the negative direction (Table 8).

Table 8: HAQ and SF 36 scores relation

	HAQ 1st measurement (n=141)		HAQ 2nd measurement (n=129)	
SF 36 (0-100)	r	p	r	p
Physical Functioning	-0.853	0.001**	-0.819	0.001**
Physical Role Functioning	-0.601	0.001**	-0.625	0.001**
Pain	-0.617	0.001**	-0.659	0.001**
General Health	-0.425	0.001**	-0.450	0.001**
Vitality(energy)	-0.405	0.001**	-0.487	0.001**
Social Function	-0.552	0.001**	-0.513	0.001**
Emotional Role Functioning	-0.349	0.001**	-0.466	0.001**
Mental Health	-0.296	0.001**	-0.449	0.001**

r: Spearman's correlation coefficient,** p<0.01

There was a statistically significant correlation (57.4%) between the first physical function scores and DAS 28 first measurement total scores on the negative side (p <0.01). The physical role was 53.8%; pain score at 57.5%; with a general health score of 23.4%, with vitality score of 17.9%, social function score of 46.6%, emotional role function score is 29.6%, mental health score is 17.0% all in negative direction (Table 9).

Table 9: DAS 28 total score and SF 36 scores relation

	DAS 28 1st measurement (n=141)		DAS 28 2nd measurement (n=129)	
SF 36	r	p	r	p
Physical Functioning	-0.574	0.001**	-0.543	0.005**
Physical Role Functioning	-0.538	0.001**	-0.571	0.001**
Pain	-0.575	0.001**	-0.653	0.001**
General Health	-0.234	0.005**	-0.365	0.001**
Vitality(energy)	-0.179	0.034*	-0.415	0.001**
Social Function	-0.466	0.001**	-0.413	0.001**
Emotional Role Functioning	-0.296	0.006**	-0.359	0.00**
Mental Health	-0.170	0.035*	-0.315	0.001**

r: Spearman's correlation coefficient,* p<0.05, ** p<0.01

A statistically significant correlation was found between the second physical function scores and DAS 28 total scores on the negative side 54.3% (p <0,01). Physical role score was 57.1%; pain score 65.3%; a general health score f 36.5%, 41.3% in vitality score, 41.3% in social function score; emotional role function score was 35.9% and 31.5% in the mental health score and all with negative direction (Table 9).

Discussion

The SF-36, commonly used in health care systems in the United States and UK, is a generic scale for measuring the health status and quality of life. Jenkinson et al. [17] stated that the performance of SF-36, especially psychometric and clinical validity, could be affected by the patient group and clinical condition under which the test was performed, and stated that satisfactory performance was not guaranteed for all patient groups and clinical conditions. This prediction requires that reliability and validity studies be conducted in that patient group before the scale is used in specific studies for specific patient groups. There is evidence that SF-36 is as good as disease-specific health scales in studies performed on some patient groups, for example in hip replacement patients [18,19]. In some subsequent studies, the validity of English SF-36 in the RA patient group [19,20] and responsiveness [21] was examined., Koçyiğit et al. [13] translated SF 36 into Turkish and conducted a reliability and validity study in 50 patients with osteoarthritis and 50 patients with low back pain.

Reliability shows the reproducibility of the accuracy of a measurement made by a scale [22]. The smaller the measurement error of your scale, the more reliable it is [22]. Internal consistency shows the relationship between a scale and the substance, and the extent to which the materials measure the desired concept. The classical statistical method is determined by the Cronbach-alpha coefficient (α). The α value is a number between 0 and 1, and the closer to one (1) is, the higher the internal consistency of the scale. Higher internal consistency supports the reliability of the scale [16].

This study was conducted with 141 patients with rheumatoid arthritis. Cronbach alpha coefficients of each subscale ranged from 0.772 to 0.992 in scale reliability studies, and according to these results, SF-36 is a reliable measure in patients with rheumatoid arthritis.

Developing the scale Ware et al. [23] Cronbach found the alpha coefficient between 0.62 and 0.94. Brazier et al. [24] they found Cronbach Alpha coefficients of sub-scales between 0.73 and 0.96. In a study of healthy individuals working in the UK, these values ranged from 0.76 to 0.90 [25]. In a study of patients with psoriatic arthritis, these values were obtained between 0.82-0.92 [26]. In a study of patients with systemic lupus erythematosus, Cronbach alpha values were calculated over 0.71 [27]. The Cronbach alpha coefficients obtained in our study were found to be sufficient in terms of reliability. The item-total score correlation coefficients are generally between 0.396 and 0.958, and the relevant items for each subscale are calculated separately. Between 0.436 and 0.840 in physical function, between 0.887 and 0.895 in physical role strength; between 0.861 and 0.958 for pain, between 0.564 and 0.892 for general perception of health; in vitality (energy) between 0.702 and 0.841; social functioning was between 0.949 and 0.952, emotional role restriction was between 0.396 and 0.473 and mental health was found between 0.456 and 0.824. In the study in which the scale was developed, item-total score correlation coefficients were found between 0.43-0.90 [23]. Husted et al. [26] found that the total score correlation coefficients were over 0.4 in their study of patients with psoriatic arthritis. Another study was performed in patients with systemic lupus erythematosus and the coefficients were again found to be over 0.4 [27].

All the correlation coefficients obtained in our study are significant and are higher than the correlations between the sub-scales in which the substances do not belong. As a result, SF-36 was found to be reliable for Turkish patients with rheumatoid arthritis.

Another process for the reliability of SF-36 is the test-again test evaluation. There was no statistically significant difference between the physical function, physical role difficulties, pain, general health, Vitality, social function, emotional role, and mental health scores after the initial measurement ($p>0.05$) (Table 6).The difference between the physical function, physical role difficulties, pain, general health, Vitality, social function, emotional role and mental health scores after the initial measurement ($p>0.05$) (Table 6). In other words, SF-36 has the test-retest reliability in patients with rheumatoid arthritis.

The validity study was performed on 63 cases whose SF 36 scale scores were not changed according to their initial arrival. The relationship between the test and re-test is evaluated with the in-class correlation coefficient; there is a statistically significant correlation between the two applications. In our study, correlation coefficients ranged between 0.51 and 0.78 (Table 7). The highest difference in the subsequent measures according to the first measure was seen in the social function score with 6.54 points.

Birrell et al. [28] in a study of 86 rheumatoid arthritis patients in the UK, physical and social functions of SF-36 were correlated well with HAQ, while the physical and emotional role subgroups were independent of disease activity. Based on these results, it was emphasized that the physical and emotional role subgroups of SF-36 were not related to the main scales of disease activity.

In this study, when the first SF-36 measurements of patients were compared with the HAQ, it was found that there was a statistically significant in negative way (85.3%), when compared with the SF-36 subunits, the emotional role function score was 34.9% and in mental health subgroups % 29,6 in negative way (Table 8). This shows that the emotional role subgroup is not directly affected by disease activity in rheumatoid arthritis. There may be different aspects which effects emotional situation in rheumatoid arthritis patients other than disease activity. Furthermore, in a study of 60 patients with rheumatoid arthritis using infliximab, emotional role function and mental health subgroups were also shown to be the least susceptible to change [29].

In conclusion, Turkish SF-36 in rheumatoid arthritis group was found to be reliable and valid. As the quality of life in the definition of 'health' of the World Health Organization is also important, it is recommended to use SF-36 in patients with rheumatoid arthritis in order to determine the quality of life of the patients and to reveal the psychosocial aspect of the disease.

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Temperament and character traits in patients with anorectal disorder

Anorektal bölge rahatsızlığı olan hastalarda mizaç ve karakter özellikleri

Bülent Devrim Akçay [1], Vahit Onur Gül [2], Serhat Özer [3]

[1] Department of Psychiatry, Gulhane Training and Research Hospital, University of Health Sciences, Ankara Turkey,
[2] Department of General Surgery, Gulhane Training and Research Hospital, University of Health Sciences, Ankara Turkey
[3] Intensive Care Unit Clinics, Gulhane Training and Research Hospital, University of Health Sciences, Ankara Turkey

Abstract

Aim: Patients with anorectal disorders can have different temperament and character traits from healthy individuals and this condition is thought to be able to change the clinical course of the disease with comorbid psychiatric disorders. In this cross-sectional study, it is aimed to examine temperament and character traits in patients with anorectal disorders.

Methods: We compared 102 patients diagnosed with one of the four most common anorectal disorders (hemorrhoidal disease, anal fissure, anorectal abscess/fistulae, and sacrococcygeal pilonidal disease) who applied to the out-patient clinic and 80 healthy adults without any medical condition. Both groups were administered sociodemographic and descriptive information questionnaire, Temperament and Character Scale (TCS), Beck Depression Scale (BDI), Beck Anxiety Scale (BAI) and State and Trait Anxiety Scale (STAI).

Results: According to the control group, the patients with anorectal disorders had higher harm avoidance (HA) scores from temperament dimensions and lower self-directedness (SD) scores from character dimensions. The anxiety and depression rates were higher in the group with anorectal disorders.

Conclusion: Anorectal disorders are common diseases in the society. Temperament and character traits are closely related to comorbid psychiatric disorders seen in patients with anorectal region disease. At the same time temperament and character traits can affect compliance with medical and surgical interventions for anorectal disease. Our study has provided important data to encourage clinicians to evaluate patients in a multidisciplinary approach in the treatment of anorectal disorders that are generally predisposed to chronicity.

Keywords: Anorectal disorder, Temperament and character traits, Mental disorders

Öz

Amaç: Anorektal bölge hastalıkları olan hastaların sağlıklı bireylerden farklı olarak mizaç ve karakter özelliklerinin etkileneceği düşüncesinden hareket ederek, bu kesitsel çalışmada anorektal bölge rahatsızlığı olan hastalarda mizaç ve karakter özelliklerinin incelenmesi amaçlanmıştır.

Yöntemler: Ayakta tedavi kliniğine müracaat eden ve en sık rastlanılan dört anorektal bölge rahatsızlıklarından (hemoroidal hastalık, anal fissür, anorektal abse/fistüller ve sakrokoksigeal pilonidal hastalık) birisi için tanı konulmuş 102 hasta ile herhangi bir tıbbi rahatsızlığı olmayan 80 sağlıklı yetişkinden oluşan kontrol grubu karşılaştırılmıştır. Her iki gruba da sosyo-demografik bilgiler ve tanımlayıcı bilgiler anketi, Mizaç Karakter Ölçeği (MKÖ), Beck Depresyon Ölçeği (BDÖ), Beck Anksiyete Ölçeği (BAÖ) ve Durumluk ve Sürekli Kaygı Ölçeği (STAİ) uygulanmıştır.

Bulgular: Anorektal bölge rahatsızlığı olan hasta grubu kontrol grubuna göre mizaç boyutlarından zarardan kaçınma (ZK) skorlarının daha yüksek, karakter boyutlarından kendini yönetme (KY) skorlarının daha düşük olduğu saptanmıştır. Anorektal bölge hastalığı olan grupta depresyon ve anksiyete oranları daha yüksektir.

Sonuç: Anorektal bölge hastalıkları toplumda sık görülen hastalıklardır. Anorektal bölge rahatsızlığı olan hastalarda görülen komorbid psikiyatrik rahatsızlıklarla mizaç ve karakter özellikleri yakın ilişki içerisindedir. Aynı zamanda mizaç ve karakter özellikleri anorektal bölge hastalıkları için uygulanan tıbbi ve cerrahi müdahalelere uyumu etkileyebilmektedir. Çalışmamız, genellikle kronikleşmeye yatkın anorektal hastalıkların tedavisinde klinisyenleri multidisipliner bir yaklaşımla değerlendirmeye teşvik etmek için önemli veriler sağlamıştır.

Anahtar kelimeler: Anorektal bölge rahatsızlığı, Mizaç ve karakter özellikleri, Ruhsal bozukluklar

Corresponding author / Sorumlu yazar:
Bülent Devrim Akçay
Address / Adres: Gülhane Eğitim Araştırma Hastanesi Ruh Sağlığı ve Hastalıkları Kliniği Etlik, Ankara, Türkiye
E-mail: drbulentakcay@yahoo.com

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Introduction

Anorectal region diseases are common diseases in the community. Of the chronic diseases of this region, chronic hemorrhoidal disease occur at the rate of 45%, chronic anal fissure at the rate of 6-7%, chronic anal abscess/fistula at the rate of 4-5% and chronic sacrococcygeal pilonidal disease at the rate of 3-4%. Anorectal region diseases are the diseases which can relapse after surgical treatment as well as medical treatment and which may tend to become chronic [1,2]. Complaints such as pain, constipation/diarrhea, and hemorrhage emerging along with the chronic inflammatory process in chronic anorectal diseases are quite severe and disturbing symptoms which decrease patients' quality of life significantly [3]. Because of these disturbing complaints, patients exhibit escape or avoidance behavior from the society, or put up with this under intense distress. The drop in quality of life in conjunction with the impairment in social relationships of the patients diagnosed with the chronic anorectal disease can form a basis for psychiatric disorders which may lead to disability in the upcoming period by resulting in anxiety, depression, and alcohol/substance abuse [2]. However, temperament and character traits play an important role in the occurrence of psychiatric disorders. At the same time, the person who is shaken by the disease tries to adapt to the disease and tries to adapt his/her living conditions to the disease. The more this new situation emerging with the occurring disease causes obstacles in the future plans of the person and flow of daily living, the more severe outcomes will ensue. These problems can range from adaptation attempts to clinical mental disorders. Patients' orientation capacities, which change in quality and duration, to this new condition emerging with diseases and these diseases directly affecting their qualities of life are closely related to their temperament and character traits. Other situations associated with temperament and character traits can be evaluated as whether patients can adapt to living together or to the treatment of their disease, to which extent they can use coping mechanisms with the emerging new condition and the ability to be able to generate a new living plan [4,5,6].

Temperament is an intrinsic characteristic which is transmitted with inheritance and changes very little during life. Character, however, refers to the attitudes developed, learned under the influence of culture and raising, therefore, it includes features that can be changed over time [7]. In the previous years, the studies on other disease groups other than anorectal regional disease revealed that there was a differentiation in the subcomponents of temperament and character compared to the healthy group. [8]. As a result of the literature review conducted by the researchers no study examining the correlation of anorectal region diseases with personality and temperament was encountered. Patients with anorectal disorders can have different temperament and character traits from healthy individuals and this condition is thought to be able to change the clinical course of the disease with comorbid psychiatric disorders. In this cross-sectional study, it is aimed to examine temperament and character traits in patients with anorectal disorders.

Materials and methods

This cross-sectional study was conducted between 14.04.2016 and 28.09.2016. The research sample was constituted by 102 patients who were admitted to the outpatient clinic of General Surgery in our hospital and who were diagnosed with one of four most commonly encountered anorectal region diseases (hemorrhoidal disease, anal fissure, anorectal abscess/fistula and sacrococcygeal pilonidal disease). The participants were composed of male and female patients over the age of 18 years who had a level of education and mental status to be able to fill in the scales and questionnaires delivered for assessment evaluation and who filled in the informed consent form. The data concerning the subject were collected from a total of 102 patients who voluntarily participated in the study within this group and the control group composed of 80 healthy adults who were not diagnosed with any psychiatric disease according to the DSM-IV diagnostic criteria, who were never treated for mental disorders at any time of their lives, and who were matched with the patient group for age and gender. Prior to the study, the ethics committee approval dated 07.04.2015 and numbered 2015/01 was obtained from the local ethical committee of the hospital. A face-to-face questionnaire was administered to the patients who were diagnosed by a proctologic history and examination in the general surgery outpatient clinic. This questionnaire consisted of socio-demographic information and descriptive information, Temperament and Character Inventory (TCI), Beck's Depression Inventory (BDI), Beck's Anxiety Inventory (BAI) and State-Trait Anxiety Inventory (STAI).

Sociodemographic Data Form: In the sociodemographic data form filled by the patients, the query form included patients' gender, age, income, marital status (married/not married), education status (primary/high school /undergraduate/graduate), employement status (full- time/ half-time/unemployed), operation history, being on medication, use of alcohol (consumes/does not consume), smoking(smokes, does not smoke), post-operative relapse (yes/no), complaint (pain, constipation/diarrhea, hemorrhage).

Structured Clinical Interview for DSM-IV Axis-I Disorders (SCIDI/CV): It is the structured clinical interview tool andministered by the interviewer in order to investigate the diagnosis of axis I mental disorders according to DSM-IV It was developed by First et al. SCID-I: It is a structured clinical interview scale developed by the American Psychiatric Association for DSM-IV Axis-I diagnose [9]. The Turkish validity and reliability study of the SCID-I was conducted by Corapcioglu et al. [10].

Temperament and Character Inventory (TCI): The TCI developed by Cloninger based on personality theory is a 7-factor, 240-item self-assessment report with four temperament (novelty seeking, harm avoidance, reward dependence, persistence) and three character dimensions (self-directedness, cooperativeness, self-transcendence) which is answered as "true" or "false". Except for persistence, other temperament and character dimensions are composed of subscales [11]. The Turkish validity and reliability study of the inventory was conducted by Kose et

al. [12] in 2001 and this version was approved by Cloninger as the Turkish TCI.

Beck's Depression Inventory (BDI): It is a self-assessment scale consisting of 21 items. It provides 4-point Likert type measurement. Each item gets an increasing score between 0 and 3 and the total score is obtained by their summation. The cut-off point of the inventory in the Turkish validity and reliability study by Hisli et al. [13] is 17. While scoring the inventory, the score between 0 and 10 points refers to no depression, 11-17 points refers to mild depression, 18-23 points refers to moderate depression and 24 points and above refers to severe depression.

Beck's Anxiety Inventory (BAI): It is a self-assessment inventory developed by Beck in 1988, and it is used to determine the frequency of anxiety symptoms experienced by individuals. It is a Likert type inventory including 21 items. The Turkish validity and reliability was carried out by Ulusoy et al. [14] in 1998. 0-7 points were evaluated as minimal anxiety, 8-15 points as mild anxiety, 16-25 points as moderate anxiety, 26-63 points as severe anxiety.

State-Trait Anxiety Inventory (SAI, TAI): This inventory was developed by Spielberger and Lushen in 1970 [15]. The Turkish adaptation was performed by Oner in 1977 [16]. It consists of two separate tests each with 20 questions. Emotions or behaviors expressed in the items of the state anxiety inventory are composed of 4 options depending on the severity of the experience (1: never, 2: some, 3: very and 4: completely). The emotions or behaviors expressed in the items of trait anxiety inventory are composed of the options, namely 1: almost never, 2: sometimes, 3: most of the time and 4: almost always according to their frequency. There are 10 reverse scored items (1, 2, 5, 8, 10, 11, 15, 16, 19 and 20 items) in the

State Anxiety Inventory while there are 7 reverse scored items (21, 26, 27, 30, 33, 36 and 39 items) in the Trait Anxiety Inventory. The total weighted score of the reverse scored items is subtracted from the total weighted score obtained for direct items and a constant value is added to this number. This value is 50 for the State Anxiety Inventory and 35 for the Trait Anxiety Inventory. The total score from both inventories ranges from 20 to 80. High scores indicate high anxiety level while low scores indicate low anxiety levels. The state anxiety inventory is very sensitive in assessing suddenly changing emotional reactions whereas trait anxiety inventory is very sensitive in measuring the continuity of anxiety which is generally likely to be experienced by the person.

Statistical Analysis

Statistical analyzes were performed using the SPSS 15.0 program. In addition to using the descriptive statistical techniques (mean, standard deviation) for the assessment of the data, the categorical characteristics of the groups were compared with the chi-square test. For Independent groups t-test was used comparisons of two groups for the normally distributed quantitative data. The significance level was considered to be $p < 0.05$ in all tests.

Results

The socio-demographic and descriptive findings of the patient group with anorectal region disease diagnosis (ARDD) and control group included were given in Table 1. There was no statistically significant difference in terms of age, gender, marital status, education level, employment status, monthly income level, smoking and alcohol use among the patient group with the diagnosis of anorectal region disease and control group (Table 1).

When the ARDD group was compared with the control group in terms of the temperament dimensions of the TCI, all subscales along with HA scores were found to be statistically significantly higher than the control group ($p < 0.001$). There was no statistically significant difference between two groups in terms of the mean scores of total NS, RD and P. Evaluating the character dimensions of the TCI, all subscales along with SD and C scores of the ARDD groups were found to be statistically significantly lower compared to the control group ($p<0.005$) whereas it was determined to be statistically significantly higher in the ARDD group in terms of the mean ST score compared to the control group ($p < 0.05$), (Table 2).

Table 1: Sociodemographic characteristics of the ARDD and control groups

	ARDD group		Control group		p[1]
	Number	%	Number	%	
Gender					
Female	11	10.8	9	11.3	0.921
Male	91	89.2	71	88.8	
Age					
16-21	25	24.5	17	21.3	0.937
22-30	56	54.9	44	55.0	
31-45	21	20.6	19	23.8	
Educational Status					
Primary Education	22	21.6	16	20.0	0.994
Secondary education	18	17.6	15	18.8	
Undergraduate	52	51.0	41	51.3	
Graduate	10	9.8	8	10.0	
Income					
Low	8	7.8	5	6.3	0.911
Moderate	86	84.3	69	86.3	
High	8	7.8	6	7.5	
Marital status					
Single	75	73.5	58	72.5	0.877
Married	27	26.5	22	27.5	
Employment Status					
Working full-time	75	93.8	94	92.2	0.865
Working half-time	2	2.5	4	3.9	
Unemployed	3	3.8	4	3.9	
Status of Alcohol Use					
Yes	33	32.4	23	28.8	0.601
No	69	67.6	57	71.3	
Smoking Status					
Yes	70	68.6	56	70.0	0.842
No	32	31.4	24	30.0	
Total	102	100.0	80	100.0	

[1] Chi-square test

Table 2: Comparison of the ARDD and control groups in terms of the TCI parameters

	ARDD group Mean±SD	Control group Mean±SD	p[1]
Temperament components			
Novelty Seeking (NS)	18.79±4.60	18.66±4.54	0.793
Harm Avoidance (HA)	20.60±4.29	16.40±3.29	0.001*
Reward Dependence (RD)	13.21±3.23	13.44±3.26	0.821
Persistence (P)	4.77±1.94	4.84±1.88	0.602
Character components			
Self-directedness (SD)	21.06±5.16	25.48±6.64	0.004*
Cooperativeness (C)	22.21±6.57	28.19±3.97	<0.001*
Self-Transcendence (ST)	19.14±2.81	16.60±3.56	0.029*

[1] T test in the independent groups, * p<0.05

Table 3: Comparison of the ARDD and control groups in terms of anxiety, depression, state and trait anxiety scores

	ARDD group Mean±SD	Control group Mean±SD	p[1]
Beck's Anxiety Score	20.98±10.57	1.83±3.10	<0.001*
Beck's Depression Score	19.18±9.86	1.98±3.25	<0.001*
State Anxiety Score	41.95±5.65	28.65±5.59	0.640
Trait Anxiety Score	41.50±6.57	28.31±5.24	0.234

[1] T test in the independent groups, * p<0.05

The mean BAI score of the patients with ARDD was 20.98±10.57 and that of the control group was 1.83±3.10 while the mean BDI score of the patient group was 19.18±9.86 and that of the control group was 1.98±3.25 and this difference between two groups was statistically significant (p <0.001). The mean state anxiety score of the patients in the ARDD group was 41.95±5.65 and that of the control group was 28.65±5.59 while the mean trait anxiety score of the patient group was 41.50±6.57 and that of the control group was 28.31±5.24 and this difference between two groups was not found to be statistically significant (Table 3).

Discussion

Examining the studies conducted, although temperament character traits have been studied for many diseases, it was observed that a common temperament and character profile could not be established for patients with anorectal region disorder. The temperament model of Cloninger describes four temperament dimensions which are genetically independent of each other, which are assumed to be moderately stable throughout life, to be invariant to sociocultural influences and to contain preconceptual biases in perceptual memory. Of the dimensions in this model, NS was suggested to have a functional association with three basic behavior system which initiated behaviors, RD was suggested to have a functional association with three basic behavior systems which maintained behaviors and HA was suggested to have a functional association with three basic behavior systems which terminated behaviors [7].

Cloninger's character model includes three character dimensions which are assumed to mature in adulthood and to influence personal and social activity by acquiring insight about self- concepts. Character segments are presumed to have a weak genetic inheritance and that they improved gradually rather with social learning [17]. A study investigating the relationship among personality, psychological stress, and pain in patients with non-specific musculoskeletal disorders and comparing 78 patients with 112 healthy control subjects determined that the patient group got high HA and low SD scores. As a result of the study, it was suggested that the personality profile with a tendency towards mood and pain disorders could have high HA and low SD [18]. Similarly, the patient group in our study had also high HA and low SD scores. It was considered that ARDD might have been associated with persistent pain as well as a personality profile that may generate predisposition towards comorbid psychiatric disorders such as depression and anxiety. At the same time, the patients in the ARDD group were observed to have lower scores coming from the SD and C subscales of the character dimensions of the TCI. These results also support the knowledge that those with anorectal region disorders may have a different character profile [5,19]. The HA temperament dimension is inherent to a large extent; it is associated with serotonergic system changes and high HA is associated with susceptibility to anxiety and depression. In the study comparing 78 patients with different persistent pain syndromes and 118 healthy control subjects, it was determined that high HA and low SD arose with psychological stress, anxiety and depression which are probably associated with chronic pain [18]. Also, in the present study, the ratios of anxiety and depression were found to be higher in the ARDD group in which high HA and low SD scores were detected compared to the control group. These results were similar to the previous studies in which high HA and low SD were found to be associated with susceptibility to anxiety and depression.

The differences between patient and control groups are evident in the SD scores reflecting features such as self-esteem, poor personality integrity, efficacy, leadership, honor and hope.

It was stated in the results of the previous studies which found low SD scores that low SD scores were associated with low self-esteem [20]. All of the subscales of SD were found to have low scores in the ARDD group compared to the control group in our study as well. The result of reduced self-esteem in the ARDD group was concluded with low SD scores in the ARDD group in parallel with other studies.

Another study by Conrad et al. [21] on chronic pain patients emphasized the significance of high HA scores. As a result of the study by Van Campen et al. [22] on patients with chronic fatigue syndrome, the HA and SE scores of the patient group were found to be higher. In a study investigating temperament and character traits in Irritable Bowel Syndrome, the total scores of HA temperament dimension and ST character dimension were found to be significantly higher than the control group. The authors suggested that these subscales may be predictive of irritable bowel syndrome disease [23]. In a study conducted by Chatterjee et al. [24] in 1997 examining the relationship between anxiety disorder and temperament character traits, the mean HA score was higher, the mean NS score was lower and the mean SD and C scores were found to be lower in those with anxiety disorder compared to the control group. Pelissolo et al. [25] determined that the mean HA score in the social phobia group was higher than the control group and that the mean SD score was lower. The mean C and ST scores, which

are other character parameters, were observed to be lower than those of the control group, although it was not statistically significant.

In the study by Marteinsdottir et al. [26] comparing patients with anxiety disorder with healthy volunteers, the mean HA score was higher, the mean P, SD, C and ST scores were found to be lower. Mörtberg et al. [27] evaluated patients with anxiety disorder before and after treatment in terms of TCI and observed that patients with anxiety disorder had a higher HA and lower SD and P scores than the control group at the beginning of treatment. The common finding of all previous studies was that patients with anxiety disorder had significantly higher levels of HA, a temperament dimension of the TCI, and significantly lower levels of SD and C, character dimensions of the TCI, compared to the control group. Similarly, although HA was found to be higher in the ARDD group than the control group in our study, the same result could not be obtained for SD and C character dimensions.

Numerous negative emotions such as having a chronic disease, coping with disease symptoms, difficulties or limitations due to treatment, and concerns about the future affect the physical, cognitive and social life and quality of life of the individual [28]. In a study investigating the effect of type D personality on health-related quality of life in patients with anal fissures, patients with type D personality were found to have worse social roles and somatic pain compared to the patients without that personality type. In conclusion, type D personality was determined to be an important predictive for individual differences in anal fissure and to play an important role in the treatment of patients with anal fissure. Since the evaluation and treatment efforts are comprehensive in these patients, the conclusion that a multidisciplinary treatment team consisting of specialist nurses, psychologists and rehabilitation consultants were needed, and reached [29]. As a result of our study, it was concluded that the temperament and character profile of patient has an important place in providing contribution to the solution of the problems by the health personnel in respect to the issues such as observing the problems experienced by patients with chronic perianal regions multi-dimensionally, aiming to determine in which subject help can be provided when the quality of life deteriorates, enabling the improvement of the quality of life by knowing the dysfunctions and stresses expressed by the patient and determining the appropriate timing of the surgical operation and selecting the appropriate surgical approach. The studies investigating the association of psychiatric disorders with other diseases found a high risk of psychiatric disorder in many chronic disease groups such as diabetes, cancer, cardiovascular, cutaneous diseases, respiratory system, gastrointestinal system diseases [30]. Temperament and character traits tend to be chronic just like anorectal region diseases, and this may increase the risk of psychiatric disorder by predisposing patients to comorbid psychiatric disorders such as depression and anxiety. It should also be taken into consideration that the treatment of psychological problems such as depression and anxiety affects compliance to the treatment of patients with chronic disorders positively [31].

The causes of the general concern of the patients draw attention as follows: control of the patient's lives by disease, incontinence problems, uncertainty of the exacerbation of the disease, problems of treatment success, negative communication with surrounding people. As a result of these evaluations, one of the treatment goals should be eliminating these concerns since the patient's temperament and character traits are important determinants in the formation of these anxieties. Timely and systematic evaluations of symptoms in patients with chronic diseases, planning and administering appropriate interventions by the members of treatment team can enable patients to maintain a quality life.

In conclusion, our study is the first study revealing temperament character traits in patients with anorectal region diseases and, at the same time, investigating the relationship between temperament character traits and psychiatric symptoms. Temperament and character traits were suggested to be closely associated with comorbid psychiatric disorders occurring in patients with chronic anorectal disease and, at the same time, it was considered that temperament and character traits might have affected compliance to medical and surgical interventions for anorectal disease. In this respect, clinicians provided important data on the encouragement to evaluate patients in a multidisciplinary approach regarding the treatment choices of anorectal region diseases, which tend to become chronic. Despite the limitations related to the disease, it should be kept in mind that making patients feel good, supporting the maintenance of daily activities have an important place in health care. While initiating the treatment for anorectal region diseases, after a clinical definition and assessment, a good doctor-patient relationship should be established, how the patient perceives the disease, their expectations, what s/he understands from recovery, their fears and concerns should be determined and it should be explained in an appropriate manner. It should not be overlooked that the temperament character traits of the patient are also important for the basis of this solid therapeutic relationship to be established with the patient. Although there is a limited number of studies reporting the effects of temperament and character traits on the additional psychiatric disorders in patients with anorectal region diseases, selection of appropriate treatment modalities, disease progression, treatment compliance and treatment response development, more comprehensive studies to be conducted in the future will allow for these relationships to be revealed more clearly.

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Evaluation of increased high-sensitivity cardiac troponin in patients with radiofrequency ablation

Radyofrekans ablasyon uygulanmış hastalarda artmış yüksek-duyarlıklı kardiyak troponin seviyesinin değerlendirilmesi

Yahya Kemal İçen [1], Mevlüt Koç [1]

[1] University of Health Sciences, Adana Health Practices and Research Center, Department of Cardiology, Adana, Turkey

Abstract

Aim: In our study; we explored which ablation parameter is mostly associated with the increased high-sensitivity troponin tests (hs-cTnT) in patients undergone radiofrequency ablation (RFA).

Methods: We included patients who underwent RFA within the previous year, and later admitted to emergency service with chest pain to our study. ECG and echocardiographic examination were performed before the electrophysiological study (EPS) for all patients. After RFA, information regarding the total duration, energy and mean temperature was recorded. Blood samples were collected via venous route from patients who underwent RFA, and later admitted to emergency service with chest pain to study hs-cTnT.

Results: There were 119 patients [38 males, median age 51years (IQR:29)] included in our study. 6 of them (80.7%) were detected to have atrioventricular nodal re-entrant tachycardia (AVNRT), 14(11.8%) Wolff Parkinson White Syndrome (WPW), and 9 (7.5%) Right Ventricular Outflow Tract (RVOT) Tachycardia. Hs-cTnT and total RFA duration (r=0.683,p<0.001), total energy (r=0.423, p<0.001) and mean temperature (r=0.371, p<0.001) were correlated. In linear regression analysis; total RFA duration (OR:0.842, 95% CI: 0.685-0.999, p<0.001) and mean temperature (OR:10.738, 95% CI: 6.420-15.055, p<0.001) were detected to be independent predictors for hs-cTnT.

Conclusion: This study has shown us that it should be noted that patients who underwent RFA for a prolonged duration and at high temperature may admit to the emergency service with chest pain, therefore, their troponin levels may increase, and also in these patients no further work-up or treatment would be required.

Keywords: High-sensitivity troponin, Radiofrequency ablation, Emergency service

Öz

Amaç: Çalışmamızda; radyofrekans ablasyon (RFA) uygulanan hastalarda ablasyon parametreleri ile yüksek duyarlıklı troponin testi (hs-cTnT) düzeyinin ilişkisini araştırdık.

Yöntemler: Bir yıl önce RFA yapılan ve daha sonra göğüs ağrısı ile acil servise başvuran hastaları çalışmamıza dahil ettik. EKG ve ekokardiyografik inceleme tüm hastalar için elektrofizyolojik çalışma (EPS) öncesinde yapıldı. RFA'dan sonra toplam süre, enerji ve ortalama sıcaklık ile ilgili bilgiler kaydedildi. Acil servise göğüs ağrısı ile başvuran RFA uygulanmış hastalardan kan örnekleri venöz yolla alındı

Bulgular: Çalışmamıza 119 hasta [38 erkek, medyan 51 yaş (IQR: 29)] alındı. Bunların 6'sında (%80,7) atriyoventriküler nodal re-entran taşikardi (AVNRT), 14'ü (%11,8) Wolff Parkinson White Sendromu (WPW) ve 9'u (%7,5) Sağ Ventrikül Çıkıntı Yolu (RVOT) Taşikardisi tespit edildi. Hs-cTnT ve toplam RFA süresi (r=0,683, p<0.001), toplam enerji (r=0,423, p<0,001) ve ortalama sıcaklık (r=0,371, p<0,001) korele bulundu. Doğrusal regresyon analizinde; toplam RFA süresi (OR: 0,842, %95 GA: 0,685-0,999, p<0.001) ve ortalama sıcaklık (OR: 10,738, %95 GA: 6,420-15,055, p<0,001), hs-cTnT için bağımsız ön gördürücü olarak saptandı.

Sonuç: Bu çalışma bize, RFA uygulanan uzun süreli ve yüksek sıcaklıktaki hastaların göğüs ağrısı ile acil servise başvurabileceğini, bu nedenle troponin düzeylerinin artabileceğini ve bu hastalarda daha ileri tedavi veya takip gerekmeyeceğini göstermiştir.

Anahtar kelimeler: Yüksek duyarlıklı troponin, Radyofrekans ablasyon, Acil servis

Corresponding author / Sorumlu yazar:
Yahya Kemal İçen
Address / Adres: Sağlık Bilimleri Üniversitesi, Adana Şehir Hastanesi, Adana, Türkiye
E-mail: dryahyakemalicen@gmail.com

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Introduction

Radiofrequency ablation (RFA) is an invasive interventional method used for the treatment of arrhythmias with high rate of acute success and very low rate of recurrence [1]. For this reason, current guidelines recommend RFA as first line indication therapy [2]. Sometimes, patients admit to emergency service with chest pain after RFA, and their troponin levels are found to be increased [3]. This increase in troponin levels may very well be related to myocardial injury during RFA, but also to some other reasons [4]. An increase can be detected even in very small myocardial injuries with the new generation high-sensitivity troponin tests (hs-cTnT) [5]. The information regarding the extent of increase in troponin and whether the troponin increase is mostly associated with the amount of energy given, total RFA duration or mean temperature is not clearly reported in the literature. In our study; we explored which ablation parameter out of mean temperature, total energy or total RFA duration is mostly associated with the increased hs-cTnT in patients undergone RFA.

Materials and methods

We included patients who underwent RFA within the previous year, and later admitted to emergency service with chest pain to our study. We excluded patients who had diseases causing hs-cTnT elevation such as heart failure, coronary artery disease, renal dysfunction, and also patients with impaired liver functions, who had permanent pacemaker and metabolic disease. Patients' demographic data and height-weight indices were calculated. ECG (Nihon Kohden 1150k) and pulse were recorded for all patients before the electrophysiological study (EPS). Left atrial volume (LAV), left atrium diameter (LAD) and ejection fraction were calculated in echocardiographic examination (Vivid-7, GE Wingmed sound Horten, Norway). Electrophysiological study was performed using EP Tracer device (Medtronic, Inc., USA) by inserting catheters via femoral region in all patient. Quadrupole diagnostic catheter (6Fr, 110 cm, Marinr® SC Series, Medtronic, Minneapolis, MN, USA) was inserted into right atrial appendix, quadrupole RF ablation catheter (7Fr, 110 cm, RF Mariner® MC, Medtronic, USA) into right ventricular region on which his record was taken, ten-pole coronary sinus catheter (7Fr, 110 cm, RF Mariner® MC, Medtronic, USA) into coronary sinus. In atrioventricular nodal re-entrant tachycardia (AVNRT) patients, tachycardia was induced using scheduled atrial and ventricular stimulation or jump and echo beats were determined. In Wolff Parkinson White (WPW) syndrome patients, localization of accessory tract was detected by guidance of coronary sinus catheter. In right ventricular outflow tract tachycardia (RVOT) patients; earliest V record was determined at right ventricular outflow tract. Ablation was performed by adjusting electrical power to upper limit of 50 watts, target temperature to upper limit of 70oC using RFA 500 khz generator device (Medtronic Attakr II, Medtronic Inc., MN, USA). The absence of tachycardia induction after junction rhythm or disappearance of jump and echo beats in AVNRT patients, disappearance of delta wave in superficial ECG or shifting of eccentric distribution to concentric distribution on coronary sinus catheter in WPW patients, and disappearance of clinical V waves in VES patients were accepted as endpoints. Later, hs-cTnT assessment was performed using electroimmunoassay method (Roche Diagnostics, Mannheim, Germany) with blood samples obtained via venous route from patients admitted to emergency service with chest pain. All patients gave informed consent. Local ethics committee gave the necessary legal permissions for the study.

Statistical Analysis

We divided the variables as continuous and categorical. We tested the normality of continuous data using the Kolmogorov-Smirnov test. As not all of our data normally distributed, we showed interquartile range (IQR) values in addition to median value. We performed a correlation analysis between hs-cTnT and ablation parameters. As distributions were normal, we used Spearman's correlation coefficient. We performed linear regression analysis with variables detected to be significantly correlated. P value of <0.05 was regarded as significant. All statistical analyses were performed with SPSS statistics software (Ver. 20.0, SPSS Inc., Chicago, IL, USA).

Results

We included 119 patients [38 males, median age 51 (IQR:29)] into our study. 96 of them (80.7%) had AVNRT, 14 (11.8%) had WPW, and 9 (7.5%) had RVOT. Median value of total RFA duration was 97 (IQR:106) seconds, median value of total amount of energy was 53.5 (IQR:15) watt, median value of mean temperature was 51 (IQR:7) °C, and median value of hs-cTnT measured at admittance to emergency service was 103 (IQR:157.5) pg/dL (Table 1). In the correlation analysis performed between hs-cTnT and electrophysiological parameters, significant correlation was found with total RFA duration (r=0.683, p<0.001, figure 1), total energy (r=0.423, p<0.001, figure 2), mean temperature (r=0.371, p<0.001, figure 3). A linear regression analysis was performed between hs-cTnT and ablation parameters. Total RFA duration (OR:0.842, 95% CI: 0.685-0.999, p<0.001) and mean temperature (OR: 10.738, 95% CI: 6.420-15.055, p<0.001) were detected to be independent predictors for hs-cTnT (Table 2).

Table 1: Demographic, laboratory and electrophysiological findings of patients

Patients, n	119
Age, years	51 (IQR:29)
Male gender, (%)	38 (31.9)
Diagnosis AVNRT (%)	96 (80.7)
Diagnosis WPW (%)	14 (11.8)
Diagnosis RVOT (%)	9 (7.5)
BMI, kg/m^2	25.9 (IQR:6.64)
Pulse, beat/minute	75 (IQR:13)
EF,%	60 (IQR:4)
LAD, mm	35 (IQR:4)
LAV, mm	48 (IQR:2)
Total time, second	97 (IQR:106)
Total energy, watt	53.5 (IQR:15)
Mean Temperature, °C	51 (IQR:7)
Hs-cTnT, ng/l	103 (IQR:157.5)

AVNRT: atrioventricular reentrant tachycardia, BMI: body mass index, Hs-cTnT: high sensitive cardiac troponin T, LAD: left atrial diameter, LAV: left atrial volume, EF: ejection fraction, RVOT: right ventricle outflow tract, WPW: wolf Parkinson white, IQR: inter quartile range.

Table 2: Linear regression analyses for elevated Hs-cTnT

	Odds ratio	95 % CI	p
Total time	0.842	0.685-0.999	<0.001
Total energy	0.486	(-1.459)-2.431	0.621
Mean Temperature	10.738	6.420-15.055	<0.001

Hs-cTnT: high sensitive cardiac troponin T

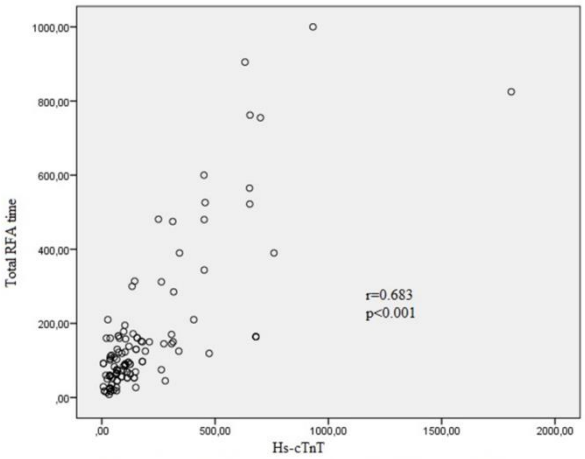

Figure 1: Simple scatter graph showing correlation between hs-cTnT and total RF time.

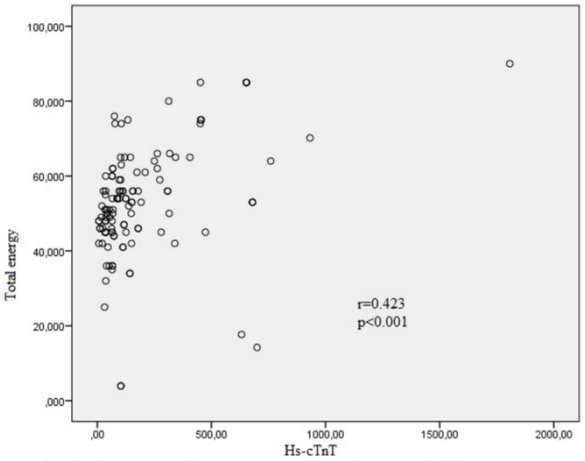

Figure 2: Simple scatter graph showing correlation between hs-cTnT and total energy

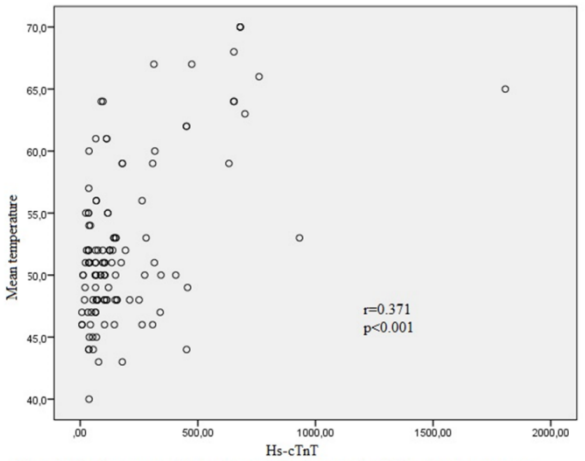

Figure 3: Simple scatter graph showing correlation between hs-cTnT and mean temperature.

Discussion

In our study, we explored the extent of correlation of hs-cTnT with ablation parameters and which one of them is the independent predictor. Significant correlation was detected between all ablation parameters and hs-cTnT. In linear regression analysis; while RFA duration and mean temperature were detected as independent predictors, total energy was not found to be an independent predictor.

In a meta-analysis of studies performed with cardiac troponin I (c-TnI) assessments, it was stated that RFA increases troponin level, and in the presence of coronary artery disease, interpretation might be difficult [6]. As we excluded CAD patients in our study, contrary to previous studies troponin increases made difficult to interpret non-cardiac causes. In another study performed with C-TnI, temperature and duration were demonstrated to be significantly correlated with troponin elevation [7]. In other two studies performed with c-TnI, a strong correlation was mentioned between RFA duration and total energy [8,9]. In another study evaluating hs-cTnT and hs-TnI together in patients with ventricular tachycardia and atrial fibrillation, both were detected to be significantly correlated with the amount of energy given [10]. In a study by Vasatova et al., a correlation between RFA duration and hs-cTnT was mentioned [11]. Hs-cTnT is elevated in many RFA patients, and also may be elevated in supraventricular arrhythmias without RFA is performed. Hs-cTnT elevation was reported in AVNRT patients admitted to the emergency service without coronary artery disease [12]. In another study, patients who admitted to emergency service and had increased hs-cTnT levels were selected and followed-up for a period of time. No significant finding was detected for cardiovascular event [13]. In another study, a significant correlation was found between high heart rate and troponin level [14]. In a study performed in patients with atrial fibrillation, c-TnT levels were demonstrated to be increased in all patients undergone ablation [15]. Again, in patients with atrial fibrillation, cryoablation and RF ablation was compared, and troponin level was detected to be increased in both groups [16]. In a study comparing linear ablation, and RF ablation performed with the guidance of complex fractionated electrogram, less troponin elevation was detected in linear ablation group than the other group [17]. Apart from all these studies, it was stated that c-TnT may increase in patients with atrial fibrillation only due to tachycardia [18]. An overall correlation was mentioned in all these previous studies, but no comparison was performed. The significant ablation parameters in the correlation analysis were not evaluated in regression analysis. Therefore, it was not mentioned which ablation parameter would be the independent predictor.

Our study has some limitations. We did not include patient groups with longer period, more amount of energy and more temperature (e.g., atrial fibrillation, atrial flutter) into our study. As we did not collect routine troponin data from the patients before and after RFA, we did not have information regarding basal troponin values, we did not follow-up the patients with hs-cTnT level of more than expected in the hospital due to possible complications.

In conclusion, we detected that RFA duration and temperature are independent predictors for hs-cTnT increase, and the total amount of energy is not an independent predictor. This study has shown us once more that it should be noted that patients who underwent RFA for a prolonged duration and at high temperature may admit to the emergency service with chest pain, therefore, their troponin may increase, and also in these patients no further work-up or treatment would be required.

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Assessment of lateral to medial dissection of Calot's triangle in laparoscopic cholecystectomy: A case-control study

Laparoskopik kolesistektomide Calot üçgeninin lateralden mediale disseksiyonunun değerlendirilmesi: Vaka-kontrol çalışması

Oğuz Uğur Aydın [1], Necdet Deniz Tihan [2], Mehmet Zafer Sabuncuoğlu [3], Özgür Dandin [4], Fatih Serkan Yeğen [5], Ahmet Ziya Balta [6], Dursun Özgür Karakaş [7]

[1] Guven Hospital, Department of General Surgery, Ankara, Turkey
[2] Yuksek Ihtısas Research and Training Hospital, Bursa, Turkey
[3] Suleyman Demirel University, Department of General Surgery, Isparta, Turkey
[4] Akcaabat State Hospital, Department of General Surgery, Trabzon, Turkey
[5] Ali Osman Sonmez Oncology Hospital, Department of General Surgery, Bursa, Turkey
[6] Sultan Abdülhamit Han Research and Training Hospital, Department of General Surgery, Istanbul, Turkey
[7] Kasimpasa Military Hospital, Department of General Surgery, Istanbul, Turkey

Abstract

Aim: We aimed was to compare intraoperative results of the dissection of the Calot's triangle through classical method and the dissection starting from the posterior side of the cystic duct toward the cystic artery along lateral to the medial surface in LC.

Methods: In Group 1 (n=60), peritoneum was dissected anteriorly along medial to the lateral surface of the Hartmann's pouch. In Group 2 (n=60), the peritoneal dissection started from the posterior side of the cystic duct toward the cystic artery along lateral to the medial surface of the Hartmann's pouch. Data including demographic characteristics of the patients, cystic duct dissection time, cystic artery dissection time, and intraoperative bleeding amount were recorded.

Results: The median cystic duct and cystic artery dissection times were 308.00 (IQR=68-927) sec and 403.50 (IQR=98-1045) sec, respectively. In Group 1, these values were 347.90±186.33 and 469.73±225.02 sec for cystic duct and cystic artery dissection, respectively. In Group 2, the median cystic duct and cystic artery dissection times were 285.50 (IQR=68-927) sec and 389.50±143.28 sec, respectively. There was no statistically significant difference in the Calot's triangle dissection time (p=0.122 and p=0.075, respectively) and intraoperative blood loss amount between the groups (p=0.852).

Conclusion: Our study results suggest that this technique can be safely performed in an acceptable time in LC patients. It also appears to be a safe alternative option for residents, left-handed surgeons, and patients with biliary and vascular abnormalities.

Keywords: Laparoscopic cholecystectomy, Lateral dissection, Medial dissection, Calot's triangle

Öz

Amaç: Laparoskopik kolesistektomide Calot üçgeninin diseksiyonunun intraoperatif sonuçlarını; klasik yöntemle ve sistik kanalın arkasından sistik artere doğru, lateralden mediale yapılan disseksiyonla karşılaştırmayı amaçladık.

Yöntemler: Grup 1'de (n = 60) periton; önde Hartmann poşunun anterior yüzeyi boyunca kese lateral yüzeyine dek disseke edildi. Grup 2'de (n = 60) peritoneal diseksiyon, sistik kanalın arka tarafından sistik artere doğru, lateralden mediale doğru yapıldı. Hastaların demografik özellikleri, sistik kanal disseksiyon süresi, sistik arter disseksiyon zamanı ve intraoperatif kanama miktarı da dahil olmak üzere veriler kaydedildi.

Bulgular: Medyan sistik kanal ve sistik arter diseksiyon süreleri sırasıyla 308,00 (IQR = 68-927) sn ve 403,50 (IQR = 98-1045) sn idi. Grup 1'de sistik kanal ve sistik arter diseksiyonu için bu değerler sırasıyla 347,90±186,33 ve 469,73±225,02 sn idi. Grup 2'de median sistik kanal ve sistik arter diseksiyon süreleri sırasıyla 285,50 (IQR = 68-927) sn ve 389,50±143,28 saniye idi. Calot üçgeni disseksiyon zamanında (p sırasıyla 0,122, 0,075) ve gruplar arasındaki intraoperatif kan kaybı miktarı arasında istatistiksel olarak anlamlı fark yoktu (p=0,852).

Sonuç: Bu tekniğin laparoskopik kolesistektomi yapılan hastalarda kabul edilebilir bir süre içinde güvenli bir şekilde uygulanabileceğini düşünmekteyiz. Aynı zamanda laparoskopik kolesistektomiye yeni başlayanlar, sol elini kullanan cerrahlar ile safra ve vasküler anomalileri olan hastalar için güvenli bir alternatif seçenek olarak göründüğünü düşünmekteyiz.

Anahtar kelimeler: Laparoskopik kolessistektomi, Lateral disseksiyon, Medial disseksiyon, Calot üçgeni

Corresponding author / Sorumlu yazar:
Oğuz Uğur Aydın
Address / Adres: Güven Hastanesi, genel cerrahi bölümü, Ankara, Türkiye
E-mail: oguzuguraydin71@gmail.com

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Introduction

Laparoscopic cholecystectomy (LC) is the gold standard in the treatment of gallbladder diseases with smaller incisions, less postoperative pain, and shorter hospital stay compared to open cholecystectomy [1]. However, this technique has some risks of potentially severe complications, such as biliary duct injury (BDI) and intra- and postoperative bleeding [2-4]. These complications may originate from anatomical variations, surgical skills and experiences, previous hepatobiliary infections, pathologies of the gallbladder, surgical techniques, and technological capabilities. In particular, in the education of surgical residents during the learning curve, the intraoperative complications such as bleeding may extend the operation time.

At the end of the 19th century, Jean-François Calot was first described a very important anatomical landmark of a special value in hepatobiliary surgery in his academic thesis [5]. Although modern description of the Calot's triangle is slightly different from the original definition, this critical anatomical space still remains important for hepatobiliary surgeons.

Cystic artery, common hepatic duct, and cystic duct are contemporary borders of the Calot's triangle [6]. It is critical to perform an attentive dissection in this anatomical triangular area, before the ligation and division of the cystic duct and artery during cholecystectomy and common bile duct surgery. These are the mainstays of LC. Despite some authors have described many dissection techniques for safer LC [7-9], there is still no consensus about the exploration of the critical anatomical structures, such as cystic duct and cystic artery in this laparoscopic procedures and, therefore, more precise approaches are required to minimize complications.

Classically, the surgeon starts the dissection of peritoneum in LC from the anterior side of cystic artery toward the cystic duct along medial to the lateral surface of the Hartmann's pouch. However, this technique has some challenges due to vascular variations.

In this study, we aimed to compare intraoperative results of the dissection of the Calot's triangle through classical method and the dissection starting from the posterior side of cystic duct toward the cystic artery along lateral to the medial surface in LC.

Materials and methods

This clinical, comparative study was designed as case-control study, and it was approved by the Ethics Committee of Şevket Yılmaz Training and Research Hospital. The study was conducted in the general surgery department of Şevket Yılmaz Training and Research Hospital, Suleyman Demirel University and Ankara Guven Hospital. A written informed consent was obtained from each patient. The study was conducted in accordance with the principles of the Declaration of Helsinki.

A total of 120 patients from three centers who were scheduled for LC due to symptomatic cholelithiasis between January 2015 and July 2016 were included in the study (Table 1). Patients who had acute or chronic cholecystitis, porcelain gallbladder, or empyema of the gallbladder were excluded from the study. In addition, patients with comorbidities such as liver diseases (e.g. cirrhosis), intra- and extrahepatic biliary tract abnormalities, or an additional disease which may affect the biliary tract surgery, intra-abdominal adhesions affecting the corpus of the gallbladder due to a previous upper abdominal surgery and coagulopathies were also excluded. Also, those with a provisional diagnosis of gallbladder cancer or with a stone with >2.5 cm diameter were excluded. All patients were examined with preoperative ultrasonography (USG), and the absence of pericholecystic fluid and dilated extrahepatic biliary tract was radiologically confirmed.

Data including demographic characteristics of the patients such as age, sex, and body mass index (BMI), and intraoperative data cystic duct dissection time, cystic artery dissection time, and intraoperative bleeding amount were recorded.

Surgical procedure

Standard LC was performed. In the operating room, the optimal Calot's triangle dissection technique for the patient was selected based on the discretion of the surgeon. Patient's divided into two groups. In Group 1, after inserting laparoscopic tools via the ports, the gallbladder was lifted and the cystic duct was identified by lifting the infundibulum of the gallbladder from the liver bed and dissecting the peritoneum anteriorly along medial to the lateral surface of the Hartmann's pouch (regular right-sided dissection of the Calot's triangle). The most optimal cystic duct exposure was obtained by retracting it anteriorly and superiorly. Different from the classical approach, in Group 2, the peritoneal dissection started from the posterior side of the cystic duct toward the cystic artery along lateral to the medial surface of the Hartmann's pouch (left-sided dissection of the Calot's triangle). The gallbladder was enucleated from its fossa after isolation, ligation, and dividing the cystic duct and artery and, then, the specimen was removed from the abdomen via the umbilical port. Due to the risk of abdominal wall bleeding, the ports were retrieved under the guidance of a camera. The fascia was closed where necessary to prevent incisional hernia.

The patients were operated by experienced surgeons who had experience with more than 200 LC procedures. In addition, all surgeons performed at least five left-sided Calot's triangle dissection before.

During surgery, cystic duct and cystic artery dissection times were measured using a digital chronometer. Surgeons performed standard antegrade dissection of the gallbladder from the fossa vesica biliaris subsequent to the cystic duct and artery ligation; therefore, total time of the procedure was unable to be recorded.

Intraoperative blood loss was classified into five groups through visual evaluation: no bleeding in case of less than 1 cc blood loss, minimally bleeding in case of 1-5 cc blood loss, mild blood loss in case of 6-15 cc blood loss, moderate bleeding in case of 16-25 cc blood loss, and severe bleeding in case of more than 25 cc blood loss during the dissection.

Statistical analysis

Statistical analysis was performed using the Statistical Package for the Social Sciences (SPSS) version 21.0 (IBM Corp, Armonk, NY, USA). As the sample number of each group was >50, normality was analyzed using the Kolmogorov-Smirnov test. Descriptive data were expressed in mean ± standard deviation for normally distributed data and in median, min-max

values and percentage for non-parametric data. Parametric values were compared using the Student t-test, while non-parametric values were evaluated using the Mann-Whitney U test. The homogeneity of variances for the Student t-test was analyzed by the Levene's test. The chi-square test with the Yates continuity correction was used to compare categorical variables. An alpha (α) value of 0.05 and a p value of <0.05 were considered statistically significant.

Results

Of a total of 120 patients, 32 (26.7%) were males and 88 (73.3%) were females. The overall mean age was 51.36±16.19 (IQR=18-87) years. The mean age of Group 1 and Group 2 was 54.36±16.29 years and 48.36±15.66 years. The overall mean BMI was 25.98±3.06 kg/m2. The mean BMI was 26.44±2.33 kg/m2 in Group 1 and 25.66 (IQR=20.32-39.12) kg/m2 in Group 2. There was a statistically significant difference in the age and BMI values between the groups (p=0.042; p=0.024, respectively) (Table 1).

On the other hand, we found no statistically significant difference in the Calot's triangle dissection times between the groups (p=0.122 and p=0.075, respectively). The median cystic duct and cystic artery dissection times were 308.00 (IQR=68-927) sec and 403.50 (IQR=98-1045) sec, respectively. In Group 1, these values were 347.90±186.33 and 469.73±225.02 sec for cystic duct and cystic artery dissection, respectively. In Group 2, the median cystic duct and cystic artery dissection times were 285.50 (IQR=68-927) sec and 389.50±143.28 sec, respectively (Table 1).

None of the patients experienced severe (>25 cc) blood loss during the Calot's triangle dissection. The intraoperative blood loss amounts are summarized in Table 2. There was no statistically significant difference in the intraoperative blood loss amount between the groups (p=0.852).

In addition, none of the patients developed early major complications such as massive bleeding requiring re-laparotomy or biliary fistulas. Only in one patient (0.8%), superficial surgical site infections developed and were treated with oral amoxicillin-clavulanate antibiotherapy.

Discussion

In the literature, several techniques have been described to reduce the complications such as intraoperative BDI and bleeding during dissection of the Calot's triangle, which is the critical step of LC. In difficult open and LC cases, subtotal excision of the gallbladder has been used as a secure option, particularly in the event of fibrosis or severe inflammation. Using this method, the wall of the gallbladder is partially left through the liver bed, right side of the hepatic hilum or common hepatic duct [10-12]. Additionally, intraoperative cholangiography has been used as one of the important methods to prevent the structural injuries [13-15]. In a report of Kato et al. [16], LC from fundus downward was introduced as a new preventive method. In this procedure, the peritoneum was initially divided from the inferior of gallbladder and extended to the neck. After enucleation of the gallbladder, the cystic structures were isolated, ligated, and divided.

In 1995, Strasberg et al. [2] introduced that surgeons should not clip and cut the cystic artery and duct before the Calot's triangle with the cystic artery duct dissected and identified completely and they identified "critical view of safety" (CVS). According to this technique, the infundibulum of the gallbladder is completely separated from the liver bed by dissections and all surrounding fatty and fibrous tissues in the Calot's triangle are removed to provide maximum visualization.

Table 1: Demographic characteristics and Calot's dissection times

		Group 1	Group 2	Total	p
Gender (n; %)	male	20 (33.3%)	12 (20.0%)	32 (26.7%)	[1] 0.074
	female	40 (66.7%)	48 (80.0%)	88 (73.3%)	
Age (year)		54.36±16.29 (25; 87)	48.36±15.66 (18; 83)	51.36±16.19 (18; 87)	[2] 0.042
BMI (kg/m²)		26.44±2.33 (21; 31,95)	25.66 (20.32; 39.12)	25.98±3.06 (20.32; 39.12)	[3] 0.024
Cystic duct dissection time (second)		347.90±186.33 (72; 853)	285.50 (68; 927)	308.00 (68; 927)	[2] 0.122
Cystic artery dissection time (second)		469.73±225.02 (98; 1045)	389.50±143.28 (115; 760)	403.50 (98; 1045)	[2] 0.075

[1] Chi-square (Fisher exact) test, [2] Student –T Test, [3] Mann-Whitney Test

Table 2: Intraoperative blood loss amount

		Group 1	Group 2	Total	p [1]	
Peroperative bleeding (n; %)	none	37 (61.7)	35 (58.3%)	72 (60.0%)	No hemorrhage	0.852
	minimally	16 (26.7)	19 (31.7%)	35 (29.2%)	Hemorrhage	
	mild	6 (10.0)	5 (8.3%)	11 (9.2)		
	moderate	1 (1.7%)	1 (1.7%)	2 (1.7%)		
	high	0 (0.0%)	0 (0.0%)	0 (0.0%)		

[1] Chi-square Test with Yates continuity correction

In addition, Vettoretto et al. [17] compared the critical view of safety technique with classical infundibular technique for hilar dissection. Despite the resemblance of biliary and hemorrhagic complications in both techniques, operation time was shorter and the method was simpler with the critical view of safety technique. In another study, Sekimoto et al. [8] described a new approach to visualize this triangular anatomical space more detailed and to prevent injury to the biliary and vascular structures. In this procedure, instead of the gallbladder fundus, the liver's lateral segment and quadrate lobe were initially retracted with a forceps which was placed from the lateral port for better exposure of the Calot's triangle during LC. However, in case of sagging gallbladder, this method can lead to poor field of vision [18].

Since early days of laparoscopy, the infundibular or infundibular-cystic method has been used for the dissection of gallbladder by by the surgeons. According to this technical approach, isolation of cystic duct is initially performed through the Calot's triangle dissection from the back and front side [19]. However, the hidden cystic duct, probably due to inflammation, may cause a false infundibulum view, thereby, accidentally leading to misdiagnose the common hepatic duct as the cystic duct [19].

In a study, Kunasani and Kohli [20] suggested that, in the Calot's area dissection, enlarged cystic lymph nodes which are common manifestations in patients with cholecystitis, could be used as a landmark. The risk of BDI could be reduced by the lateral approach to this tissue during dissection. However, in these patients, lymph node dissection may cause bleeding. In our study, we also attempted to prevent the blurry and distorted view of the dissection area due to bleeding caused by lymph node dissection at the beginning of surgery.

To prevent the common bile duct injury, another procedure was reported by Sari et al. [21]. In their method, first, the bile was aspirated from the gallbladder by puncturing with the Veress needle and, then, a small amount of diluted methylen blue was injected to the gallbladder to visualize the bile tree, including the cystic and common bile ducts, and safer LC was able to be performed. However, we consider that this method is time-consuming and may result in several complications, such as poor view of the dissection area and infections.

In another study, Wijsmuller et al. [22] demonstrated that isolating and dividing the cystic artery before the cystic duct increased the Calot's triangle area in LC. During surgery, this maneuver offered better visualization of the cystic duct and reduced the risk of BDI. Avgerinos et al. [23] also performed LC in about 1,000 patients using this technique and achieved quite satisfactory results. However, in more than 25 patients, the procedure was converted to open surgery due to bleeding, anatomical difficulties, firm adhesions, and severe inflammation. However, in difficult cases, the initial artery dissection and cutting may cause right hepatic artery injury and increase the morbidity.

Furthermore, in 2009, Almutairi et al. [24] described another new method to obtain more effective anatomical exposure. In this method called triangle of safety technique, the dissection initially starts from the gallbladder corpus and cystic artery is identified. Then, the dissection extends to the junction of cystic duct with infundibulum. Dissection of the duct is performed over the gallbladder corpus near this junction, and Calot's triangle is by-passed. This approach is considered to be more useful in the presence of vascular and ductal variations and to prevent probable injuries [24]. In general, the right-handed surgeons start to the dissection of the Calot's triangle from the point of cystic artery and medial side of the gallbladder.

In 2011, Hannan et al. [25] described a new method to avoid injury and complications in pediatric patients who underwent LC by sparing the cystic artery. In this technique, the dissection was performed using the hook cautery from distal to lymph with no-touch-technique to the cystic artery, and the Calot's triangle was exposed.

For the exposure of the Calot's triangle clearly, the energized (ultrasonic scalpel, electric coagulation and monopolar electrosurgery) and cold (blunt and sharp) dissections are commonly used in LC (1). As a different method, Ohashi et al. [26] used a special surgical brush to perform safer and rapid exposure of the Calot's triangle. In addition, Cai et al. [1] presented the blunt dissection technique and its results in their single-center study. The authors provided the exposure of the Calot's triangle by flush and aspiration, and they concluded that this method could avoid biliary structures-related complications in LC cases.

Although there is no common consensus on dissection technique of the Calot's triangle in LC, medial to lateral dissection is frequently used and surgical residents are trained in this field in Turkey. Therefore, the majority of surgeons consider that lateral to medial dissection is time-consuming and probably leads to more complications, including iatrogenic ductal and vascular injuries. However, in certain cases, an alternative approach may be required. In our study, we found no statistically significant difference in the intraoperative bleeding and dissection times between the groups.

To the best of our knowledge, there is no study in the literature in which the intraoperative results of medial to lateral and lateral to medial dissections were compared. For experienced surgeons, less than 5 LC procedures performed by using the left-sided Calot's triangle dissection technique would be sufficient to complete their learning curve about this relatively undesired approach. We believe that this clinical and anatomical pilot study would be encouraging for surgeons to decide the most optimal approach in LC. In addition, we consider that this technique is useful and facilitator, particularly for residents by exploring and understanding the anatomy.

The major limitation of this study is the selection of the patients. To ensure the homogeneity of the study, very strict exclusion criteria were applied. However, it was difficult to estimate the efficacy of left-sided dissection technique in complicated patients who were scheduled for LC. Nevertheless, this is a necessity to rule out other factors which may influence the dissection time, such as adhesions due to acute or chronic cholecystitis and/or previous upper abdominal surgery. In this regard, strict exclusion policy could not be considered as a complete study limitation. In the light of the promising results of this pilot study, we plan a further, large-scale study including a higher number of consecutive patients.

Another limitation of the study is the statistical difference in the age and BMI values of the patient groups. However, we believe that age and BMI would not influence the study results, considering the advanced surgical experience of the authors in LC.

In conclusion, extrahepatic biliary tree shows many anatomical variations, and it is an absolute necessity to recognize and dissect the Calot's triangle during surgery to avoid iatrogenic injuries. Therefore, surgeons should be familiar with normal Calot's triangle anatomy, from both left and right side, and be ready to the potential anatomical variations of this special area. Our study results suggest that this technique can be safely performed in an acceptable time in LC patients. It also appears to be a safe alternative option for residents, left-handed surgeons, and patients with biliary and vascular abnormalities.

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Case report
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A forgotten approach after cardiac arrest due to acute myocardial infarction: Neuroprotective therapeutic hypothermia

Akut miyokard infarktüsüne bağlı kardiyak arrest sonrası unutulan yaklaşım: Nöroprotektif terapötik hipotermi

Abdullah Özçelik [1], Yakup Alsancak [1], Ahmet Seyfeddin Gürbüz [1], Abdullah İçli [1], Ahmet Soylu [1]

[1] Necmettin Erbakan University, Meram Medicine Faculty Hospital, Division of Cardiology, Konya, Turkey

Abstract

In patients with spontaneous circulation after cardiopulmonary resuscitation, therapeutic hypothermia is defined as the reduction of body temperature to 32-34 ° C within the first 4-6 hours for neuroprotective purposes and to be maintained at this level for 12-24 hours after reaching the target temperature. Therapeutic hypothermia has been practiced since the 1940s. The aim of therapeutic hypothermia is to reduce cerebral edema, convulsive activity, metabolic demand and associated complications by providing low body heat. Therapeutic hypothermia is applied to increase life expectancy and quality of life. In out-of-hospital cardiac arrest, should be performed in comatose patients where initial rhythm is ventricular fibrillation and spontaneous circulation is returned. Herein, we present a 44 years old patient who had an aborted sudden cardiac death due to acute myocardial infarction and performing cardiopulmonary resuscitation for 30 minutes and discharged after 6 days with a successful therapeutic hypothermia.

Keywords: Cardiac arrest, Therapeutic hypothermia, External cooling

Öz

Kardiyopulmoner resisütasyon sonrası spontan dolaşım sağlanan hastalarda, nöroprotektif amaçlı ilk 4-6 saat içinde vücut ısısının 32-34 °C'ye kadar indirildiği ve hedef ısıya ulaştıktan sonra 12-24 saat bu düzeyde tutulmasına terapötik hipotermi denir. Terapötik hipotermi 1940'lardan bu yana uygulanmaktadır. Terapötik hipoterminin amacı, düşük vücut ısısı sağlayarak serebral ödem, konvülziyon aktivitesi, metabolik talebi ve bunlarla ilgili gelişecek komplikasyonları azaltmaktır. Terapötik hipotermi yaşam beklentisi ve hayat kalitesini artırmak için uygulanır. Hastane dışı kardiyak arrestlerde başlangıç ritmin ventriküler fibrilasyon olduğu ve spontan dolaşımın geri döndüğü komatöz hastalarda yapılmalıdır. Burada, akut miyokard enfarktüsü nedeniyle ani kardiyak ölümle sonuçlanan ve 30 dakika süreyle kardiyopulmoner resisütasyon uygulanan ve 6 gün sonra başarılı bir terapötik hipotermi sonrası taburcu edilen 44 yaşında bir hasta sunuyoruz.

Anahtar kelimeler: Kardiyak arrest, Terapötik hipotermi, Eksternal soğutma

Introduction

Cardiovascular diseases are the most common cause of death in the world and in our country. The most important problem encountered after spontaneous circulation in cardiopulmonary resuscitation (CPR) patients is poor survival of the neurological condition and deterioration of prognosis, decrease of life quality and life expectancy. The mortality rate in out-of-hospital cardiac arrest in USA is as low as 65-95% and the rate of neurological sequelae recovery in survivors is as low as 10-20% [1]. The most common cause of death in out-of-hospital cardiac arrest is neurological damage. Neurological damage also contributes to mortality in in-hospital cardiac arrest [2]. Hypothermia in resuscitation is a topic that is being discussed so much today, to ensure that patients recover neurologically after resuscitation, to try to improve their life expectancy and quality of life. Patient with spontaneous circulation after CPR has been administered is called therapeutic hypothermia to maintain body temperature at 32-34°C within the first 4-6 hours to achieve a successful neurological reversal and 12-24 hours when the target temperature is reached [3]. Hyperthermia is an expected condition after arrest and worsens neurological outcomes [4]. Therapeutic hypothermia improves neurological outcomes when combined with standard post-resistive maintenance [5].

Corresponding author / Sorumlu yazar:
Abdullah Özçelik
Adress: Necmettin Erbakan Üniversitesi, Meram Tıp Fakültesi Hastanesi, Kardioloji kliniği, Meram, Konya, Türkiye
e-Mail: drabdullahozcelik@gmail.com

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Herein, we aimed to draw attention to therapeutic hypothermia with present a 44 years old patient who had an aborted sudden cardiac death due to acute myocardial infarction and performing CPR for 30 minutes and discharged after 6 days with a successful therapeutic hypothermia.

Case Presentation

A 44-year-old male patient with unknown systemic disease has found by emergency team after sudden loss of consciousness with cardiac arrest at work. A cardiac rhythm was provided after 30 minutes of CPR. The patient brought to the emergency service, because of electrocardiogram compatibility with the acute anterior MI, the patient was taken immediately to the coronary angiography laboratory. Coronary angiography showed , total occlusion of left anterior descending coronary artery (LAD) after first diagonal artery, first obtuse marginalis (OM1) with acute severe thrombotic, with normal circumflex coronary artery and right coronary artery are normal (Figure 1A-B). A drug-coated stent was immediately implanted for proximal LAD lesion (Figure 1C). Then, due to the patient was in the shock table, drug-coated stents were implanted in the same procedure to the CX OM1 lesion (Figure 1D). The patient's blood pressure improved after primary coronary intervention, and then he was taken into coronary intensive care unit. Patient was mechanically ventilated and had no painful stimulus. Pupillary fixation, no brainstem reflexes were obtained and the bilateral basal skin reflex was unresponsive. Glasgow Coma Score was detected as 3. 24 hours of sedation and therapeutic hypothermia was scheduled for the patient with involuntary contractions. External cooling was performed in order to avoid the table of pulmonary edema due to the presence of acute myocardial infarction and a 25% ejection fraction in the echocardiography. Hypoxic brain damage was defined by neurological department and mannitol was initiated in the direction of neurology. Brain computed tomography (CT), brain diffuse magnetic resonance (MR) and electroencephalography (EEG) were planned. Brain CT and diffusional MR were reported with in normal range. EEG was consistent with the presence of ischemic hypoxic encephalopathy and focal epileptic activity. At the end of the 24-hour period, the patient, who had been warmed up gradually and was sedated, was extubated after 48 hours due to the consciousness opening. The patient was a conscious normal and co-operative patient, and neurology was consulted again because of short-term episodes of consciousness change. A neurologically evaluated patient was offered antiepileptic drug and policlinic control. In the control echocardiography, the ejection fraction was found to be 35% and the major valve pathology was not observed. On the 8th day of follow-up, the patient's conscious, orientation, motor and sensory examination were normal. The patient was discharged with a planned cardiac rehabilitation program.

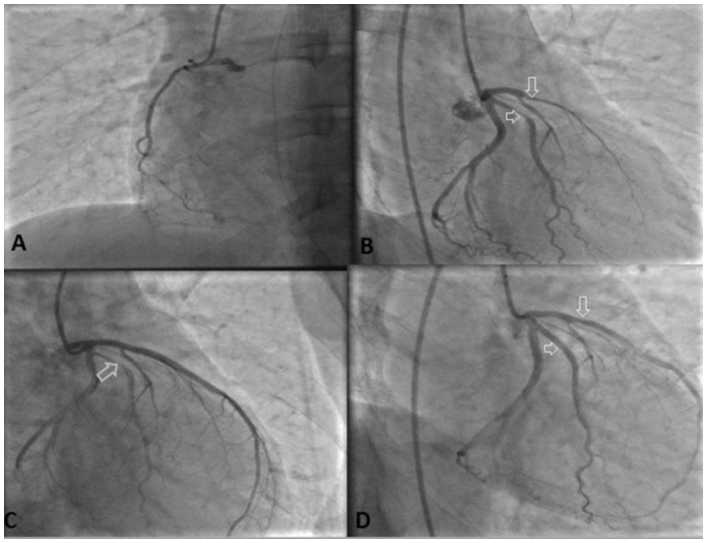

Figure 1: A- Right coronary artery without any stenosis B –A totally occluded left anterior descending artery and obtuse marginal coronary artery with severe thrombotic stenosis (arrows), C-Left anterior descending coronary artery after stent implantation (arrow) D-Obtuse marginal coronary artery after stent implantation without lesion (arrow)

Discussion

Therapeutic hypothermia has been practiced since the 1940s. Initial experiments had been carried out at low temperatures (<30 ° C). It requires serious intensive care follow-up with the emergence due to many side effects at low temperatures. When the central temperature drops below 32°C, fatal arrhythmias and bradycardias can develop due to a decrease in the depolarization of the cardiac message cells [1]. In the 1990s, brain protection could not be adequately maintained with pharmacological agents, causing hypothermia after cardiac arrest to resurface [6]. Between 1980 and 1990 animal experiments and small clinical trials showed that less side effects were observed in 32-35°C [7]. In recent years, studies on this subject have begun to increase. We also followed the body temperature to 32-36 ° C when the patient was hypothermic.

The patient with the suitable indication with spontaneous circulation after cardiopulmonary resuscitation has been administered should be given 12-24 hours (mean 18 hours) after the body temperature has been lowered to 32-34 ° C within the first 4-6 hours to achieve a successful neurological reversal, the process of keeping it at this level is called therapeutic hypothermia. The aim of therapeutic hypothermia is to reduce cerebral edema, convulsive activity, metabolic demand and associated complications by providing low body heat. Effected by deceleration in dexterous enzymatic reactions, inhibition of free radical reactions, protection of lipoprotein membrane flow, reduction in oxygen demand, reduction in intracellular acidosis, inhibition of synthesis, release and uptake of excitatory neurotransmitters [8]. Our patient underwent therapeutic hypothermia at the 3rd hour of cardiac arrest and continued for 24 hours. Then the patient was gradually heated.

Therapeutic hypothermia is a useful therapeutic approach for the protection of the brain and other organs in patients with coma when spontaneous circulation returns. It is applied to increase the quality of life and life expectant. In out-of-hospital cardiac arrests, initial rhythm ventricular fibrillation (VF) should be performed in comatose patients returning spontaneous circulation, any initial rhythm after in-hospital

arrest, pulseless electrical activity outside the hospital, or in adult comatose patients with asystole and spontaneous circulation returned. Patients to whom therapeutic hypothermia can be administered should be started within 5-15 minutes after CPR collapse, CPR lasting for 60 minutes, return to normal sinus rhythm after spontaneous circulation, mean arterial pressure (MAP) >60 mmHg and/or systolic arterial pressure (SAP) >90 mmHg, eyes spontaneously closed, Glasgow coma scales below 8. Given these strict criteria, only 10% of cases can be applied. The patient under 18 years of age, be pregnant, have an MAP <60 mmHg and/or SAP <90 mmHg, have coagulopathy (seeing for warfarin treatment) or thrombocytopenia, hypothermic for the patient after cardiac arrest (body temperature <30°C) (drug overdose, head trauma, stroke, status epilepticus), terminal illness, uncontrolled arrhythmia in the patient is contraindicated for the application of therapeutic hypothermia [9-10]. Active control of post-arrhythmic body temperature should be achieved as soon as possible and hypothermia should be actively controlled even in patients who are mildly hypothermic at the time of admission [11]. Although hypothermia is provided by various methods, these methods do not have the advantages of each other, and intravenous infusion of cold fluid and simultaneous surface cooler are the most preferred methods. During the therapeutic hypothermia, the body core temperature must be constantly monitored. The gold standard method is central venous heat measurement. The reheating must be done in degrees not exceeding 0.5°C /hour. Otherwise, rapid heating can cause electrolyte abnormalities (hyperkalemia), brain edema, convulsions and other problems. We used to therapeutic hypothermia because of the absence of an out-of-hospital asystole patient who returned spontaneous circulation and an adult comatose patient. External cooling was applied to avoid volume load and pulmonary edema due to poor cardiac systolic function.

Such patients need a multidisciplinary approach by a team consisting of cardiology, anesthesia, and neurologist to ensuring them benefit at the highest level. Cerebral damage after aborted cardiac arrest is an important cause of morbidity and mortality. In recent years, although therapeutic hypothermia has been reported to be useful in cardiac arrest cases due to non-VF rhythm problems, it is suggested that good prognosis rates are as low as 7-12% after therapeutic hypothermic application in these cases. Although the positive effect of hypothermia treatment on neurological prognosis, it is still not routinely applied [12]. Despite the need for new large randomized clinical trials, we wanted to draw attention to the fact that therapeutic hypothermia may have promising results in non-VF cardiac arrest cases such as asystole and that therapeutic hypothermia should be used more widely.

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Case report
Olgu sunumu

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A case of Behcet's disease with upper extremity thrombosis

Üst Ekstremite Trombozlu Behçet Hastalığı Olgusu

Ayşegül Albay [1], Büşra Kanatsız [1], Ayşe Rana Platin [2], Hacer Sali Çakır [3], Gülay Oludağ [4], Sema Basat [5]

[1] Umraniye number 26 Family Heath center, Istanbul, Turkey
[2] University of Health Science, Department of Family Medicine, Umraniye Education and Research Hospital, Istanbul, Turkey
[3] Family Medicine, Ortahisar Community Health Center, Trabzon, Turkey
[4] Home-Health Unit, Aksaray Education and Research Hospital Aksaray, Turkey
[5] University of Health Science, Department of Internal Medicine, Umraniye Education and Research Hospital, Istanbul, Turkey

Abstract

Behcet's disease is a multi-system vasculitis in which recurrent oral and genital ulcers, uveitis as well as musculoskeletal, neurologic and gastrointestinal system involvement are observed. In previous studies, vascular involvement rate ranges between 1-38%. Most common vascular complication is superficial vein thrombosis of the extremities, followed by deep vein thrombosis. In this study, we will present a case of Behcet's disease with upper extremity thrombosis.

Keywords: Behcet's disease, Upper extremity, Superficial vein thrombosis

Öz

Behçet hastalığı tekrarlayan oral, genital ülserler, göz bulgularının yanısıra kas-iskelet, nörolojik ve gastrointestinal sistem (GİS) tutulumları ile seyreden sistemik bir vaskülittir. BH'da vasküler tutulum oranı serilere göre %1-38 arasında değişmektedir. En sık görülen vasküler komplikasyon ekstremitelerin yüzeyel ven trombozu iken bunu derin ven trombozu (DVT) izler. Bu yazıda, üst ekstremite trombozu olan bir Behçet hastalığı olgusundan bahsedilecektir.

Anahtar kelimeler: Behçet hastalığı, Üst ekstremite, Yüzeyel ven trombozu

Introduction

Behcet's Disease (BD) was first defined by the Turkish dermatologist Hulusi Behcet in patients with recurrent oral and genital ulcers and hypopyon iridocyclitis [1]. Other studies showed articular, pulmonary, gastrointestinal, urogenital, cardiac, vascular and neurologic system involvement accompanied these three symptoms [2]. The prevalence of BD in Turkey is 20-421/100,000 [3]. Symptoms, severity and clinical course of the disease differ among patients. The prevalence and severity of the disease are higher in men than in women [4]. The rate of vascular involvement in BD is 1-38% in some studies [5]. The most commonly seen vascular complication is superficial vein thrombosis followed by deep vein thrombosis of the extremities [6]. Superficial or deep vein thromboses of the lower extremities are more commonly seen than upper extremity thrombosis [7].

In this case report we present the case of a patient who admitted to the Department of Emergency Medicine at Umraniye Training and Research Hospital with a swollen arm and was diagnosed with upper extremity superficial vein thrombosis. The patient was diagnosed with BD two years ago and hadn't been taking his medication regularly.

Case presentation

A 32-year-old male patient who had been followed for two years for BD was admitted to the Department of Emergency Medicine at Umraniye Training and Research Hospital with a swollen and painful arm. The patient had a history of one time pulmonary emboli and two times orchitis. He was admitted to an outpatient clinic two years ago due to his recurrent oral apthous ulcers and was diagnosed with BD with a positive pathergy test. He had no history of genital ulcers and uveitis. He did not take his medicine regularly because he thought the treatment didn't help him. He is currently on day 100 mg acetylsalicylic acid treatment. There was no significant family medical history.

Corresponding author / Sorumlu yazar:
Ayşegül Albay
Adress: Uzun ayna cad. No: 8/B, Ümraniye 26 nolu ASM, İstanbul, Türkiye
e-Mail: aysegul.akbay@gmail.com

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The patient had been suffering from right leg pain and admitted to the Emergency Department four days ago. He had a normal physical examination. Deep vein thrombosis of the right leg was suspected. Complete blood count, ALT, AST, creatinine, serum glucose, Na, K, D-dimer levels and color doppler ultrasonography result were normal. He was referred to an outpatient clinic but not admitted.

In his left antecubital fossa where venous puncture was made four days ago, there was a seven cm diameter, edematous, painful, warm and hyperemic lesion. Five cm diameter difference was detected between left and right elbows of him. On his lower extremities multiple erythema nodosum lesions were detected. There was no diameter difference between his left and right legs. A lot of papulopustular lesions with residual scars were seen on his back. He denied oral or genital ulcers and uveitis.

Left upper extremity color doppler ultrasonography was performed with the preliminary diagnosis of venous thrombophlebitis. The ultrasound was reported as focal inflammation around soft tissue of the left elbow and thrombosis in collateral veins in the same region, other main branches of deep and superficial veins were normal. The patient was referred to Department of Cardiothoracic and Vascular Surgery. Subcutaneous bemiparin sodium 7500 IU/day and oral amoxicillin/clavulanic acid (1000 mg twice a day) treatments was given to the patient.

Four days later the patient was admitted to the Family Medicine outpatient clinic because of increased pain in his legs. In his physical examination, it was noticed that edema and hyperemia of the left antecubital fossa lessened (figure 1a) and the diameter difference in the upper extremities decreased two cm.

The number of erythema nodosum lesions on his legs increased and their color became darker (Figure 1 b-d). There was no diameter difference between lower extremities of him. Bilateral lower extremity doppler ultrasonography was performed and reported as "minimal intimal irregularities and thickening accompanied by multifocal calcific deposits in all the examined arteries, plaque and thrombus formation were not observed in venous system".

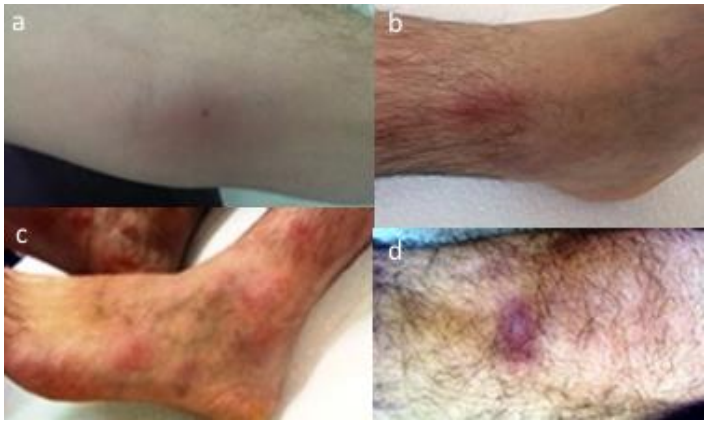

Figure 1: a: Antecubital fossa after four days treatment, b-d: The number of erythema nodosum lesions on his legs increased and their color became darker

Discussion

We report the case of a patient diagnosed with upper extremity venous thrombosis, a rare complication of BD. The patient had been followed for BD for two years, and hadn't been taking his medication regularly.

BD is a systemic vasculitis, which affects the veins and arteries of all sizes. Perivascular infiltration by neutrophils and monocytes and immune-mediated vasculitis cause endothelial dysfunction, and increase the risk of thrombosis. Endovascular and perivascular inflammation may lead to stenosis, thrombi and aneurism [6].

Venous involvement is more common than arterial involvement in BD. Although superficial vein thrombosis and deep vein thrombosis are commonly seen in lower extremities, upper extremity venous thrombosis is rarely seen [7].

In a study conducted by Kuzu et al. [8] involving 1200 patients, venous and arterial involvement were seen in 173 (14.4%) and 19 (1.6%) of the patients respectively. Of the patients with venous involvement, 154 (12.8%) were venous thrombosis, 17 (1.4%) were superior vena cava syndrome, five (0.4%) were inferior vena cava syndrome, five (0.4%) were varicose veins, two were upper extremity thrombosis, one was cavernous sinus thrombosis, one was internal jugular vein thrombosis and one was hepatic vein thrombosis.

The risk of venous thrombosis is increased in patients who were treated by heparin infusion or underwent venous blood sampling [9]. The venous punction performed four days ago led to a further increase in the risk of thrombosis in our patient. Therefore, higher tendency to develop thrombosis should be kept in mind, when an invasive procedure is planned in patients with BD.

Treatment of BD varies according to age, gender, clinical signs and the severity of the disease. Colchicine is the most commonly used drug for treatment of BD. It is preferred, especially for the patients with mucocutaneous symptoms [10]. Topical corticosteroids are effective treatment modalities for oral and genital ulcers. They decrease inflammation if especially used in the first five days of inflammation when the inflammation is severe. Azathioprine suppresses humoral and cellular immunity. For retinal vasculitis, it is used in combination with prednisolone at a dose of 1-2 mg/kg/day. Cyclosporin that is used for the treatment of uveitis inhibits T lymphocytes selectively. Infliximab and etanercept are tumor necrosis factor alpha inhibitors commonly used for the treatment of BD recently [11].

Vascular involvement is commonly seen in the first five years of the disease [12]. Our patient was diagnosed with pulmonary emboli a year after the diagnosis of BD, and upper extremity vein thrombosis the next year. This could be related with severe prognosis of the disease in our case patient or poor patient adherence to the treatment regimen.

For the good prognosis of the disease, regular follow-up is very important. Inadequate number of rheumatologists in Turkey leads to irregular follow-up and lower compliance of the patients with treatment. In this respect, primary care physicians should take an active role in frequent follow-up visits of the patients with BD and close monitoring of the treatment, enhance treatment compliance of the patients and refer patients with exacerbation to the Rheumatology clinic to receive immune-suppressive treatment as soon as possible.

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Prognostic importance of congenital cataract morphology: A case report

Konjenital katarakt morfolojisinin prognostik önemi: Olgu sunumu

Çağrı İlhan [1]

[1] Hatay State Hospital, Antakya, Hatay, Turkey

Abstract

Congenital cataract (CC) has an important place in pediatric ocular diseases. CCs are different from senile nuclear cataracts in terms of their etiologic, clinic and morphological characteristics. CCs occur many different forms such as non-hereditary isolated cases or autosomal dominant bilateral cases. In addition, many of ocular and systemic diseases can be associated with CC and ophthalmologist should be aware of these potential risks. In this article, we queried whether the different morphological features of CC have prognostic importance by considering a case of CC.

Keywords: Congenital cataract, Cataract morphology, Polar cataract, Sutural cataract

Öz

Pediatrik göz hastalıkları içinde konjenital kataraktlar önemli bir yere sahiptir. Etiolojik, klinik ve morfolojik özellikleri göz önünde bulundurulduğunda konjenital kataraktlar erişkin nükleer kataraktlardan farklıdır. Konjenital kataraktlar ailesel geçiş göstermeyen izole vakalar şeklinde görülebileceği gibi otozomal dominant bilateral vakalar şeklinde de görülebilir. İlaveten konjenital kataraktlar, bir çok oküler ve sistemik hastalıkla ilişkili olabilir ve göz hekimleri bu potansiyel birlikteliklerin farkında olmalıdır. Biz bu yazımızda, bir konjenital katarakt olgusu üzerinden, farklı konjenital katarakt morfolojilerinin prognostik önemi olup olmadığını sorguladık.

Anahtar kelimeler: Konjenital katarakt, Katarakt morfolojisi, Polar katarakt, Sutural katarakt

Introduction

Cataract means the opacification of human natural crystalline lens. It is known as a geriatric disease because incidence of cataract increases with aging. Nevertheless, cataract can be seen in pediatric population. If cataract exists in birth, it is called as congenital cataract (CC). If cataract does not exist in birth and it occurs before 16-year-old, it is called as juvenile cataract [1]. Some books mentioned from infantile cataract which, means formation of cataract occurred in first year of life [2]. CC is responsible from 15-20 percent of pediatric blindness [3]. CCs are different from senile cataracts in terms of their etiologic, clinic and morphologic characteristics. Always, there is no visual impairment in disorder's clinic. In this article, we queried whether the different morphological features of CC have prognostic importance by considering a case of CC.

Case presentation

A 14-year-old female patient presented to our clinic for routinely ocular examination. Best corrected visual acuity (BCVA) and intraocular pressure for both of eyes were normal. In biomicroscopic examination, sutural cataract and blue dot opacities were seen in both of eyes (Figure 1). Retina, macula and optic disk were normal. When queried her medical history, she did not report having any systemic and ocular chronic disease, using any cataract-related drug or experiencing any trauma. Similar cataract morphology that did not impair vision, was also found in 46-year-old mother of patient (Figure 2). Anterior segment photographs were taken and written approval was obtained from her mother for using of photographs in academic purposes. Ocular examinations of other family members were completely normal.

Corresponding author / Sorumlu yazar:
Çağrı İlhan
Adress: Hatay Devlet Hastanesi, Antakya, Hatay, Türkiye
e-Mail: cagriilhan@yahoo.com

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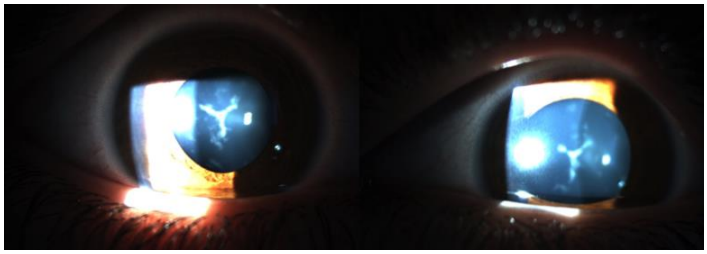

Figure 1: Fourteen-year-old patient's anterior segment photo

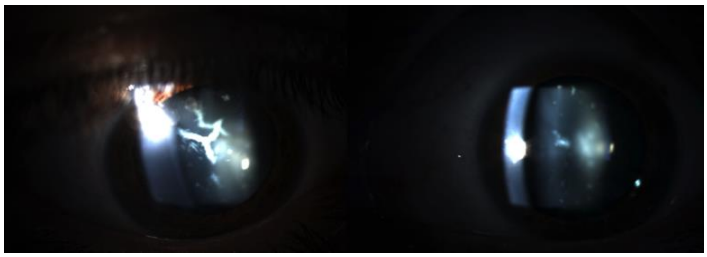

Figure 2: Forty-six-year-old mother's anterior segment photo

After the examinations of patient and her mother, findings were considered as isolated autosomal dominant congenital sutural cataract. We did not plan any surgery for clinically non-significant cataract and we recommended annual ocular examination for both of patients.

Discussion

Sixty-percent of pediatric cataracts are idiopathic while 10-25 percent of them are associated with genetic disorders [4]. CC is the most important etiologic factor in pediatric cataracts and it is seen in 40-60 of 100000 living birth [1, 5]. In generally, unilateral CCs are idiopathic and they are not associated with any systemic or genetic disorders. However, the majority of bilateral CCs result from several genetic conditions. These genetic conditions can be trisomy (13, 18, 21), deletion (5p, 18p, 18q) and disorders autosomal recessive inherited. In addition, a study reported that CC was inherited as autosomal dominant in 30 of 39 families with bilateral CC [6].

Defects in genes effecting crystalline lens development cause CC. These defective genes encode some proteins which play a role in enzyme synthesis (like galactosemia) or signal transmission or are used as structural substance (like crystalline) or transmembrane proteins (like aquaporin and connexin) [7].

Some multisystem diseases can cause CC. These diseases can affect primarily kidneys (Lowe syndrome, Alport syndrome, Hallerman-Streiff-Francois syndrome), skeletal system (Stickler syndrome, Smith-Lemli-Opitz syndrome), central nervous system (Marinesco-Sjogren syndrome, Zellweger syndrome), muscular system (myotonic dystrophia) or skin (Cockayne syndrome, incontinentia pigmenti, ichtiosis).

Intrauterine trauma, radiation or TORCH infections (the acronym consisted of Toxoplasmosis, Other, Rubella, Cytomegalovirus, Herpes infections) can be reason of CC. Microphthalmia, aniridia and retinal abnormalities commonly accompany these cataract formations.

Morphology of CC effects visual prognosis, like duration and reason of cataract. CCs are very different from senile nuclear cataracts in terms of morphology of them. They can be classified based on the place of opacity in the lens. Nuclear, lamellar, cortical, sutural, pulverulent, cerulean and colariform cataracts locate in central of the lens. Polar cataracts locate in anterior (anterior polar, anterior pyramidal, anterior subcapsular) or posterior (posterior subcapsular, posterior lenticonus, posterior fetal vasculature) layers of the lens [2]. In addition, many of CC morphologies give hint about CC associated ocular and systemic abnormalities.

Congenital nuclear cataracts locate between Y sutures of embryonic or fetal nucleus and they are present in birth. This cataract has autosomal dominant inheritance and it generally impairs patient's vision [2]. Opacification of fetal nucleus' superficial lamellas called as congenital lamellar cataract. These opacifications can be different grades of severity and formation and they are commonly occurred as bilateral and asymmetric. Congenital lamellar cataracts less decrease vision when compared with other forms of CC [8]. Y shaped opacifications are occurred in congenital sutural cataracts. This cataract morphology does not progress and patient's vision does not decrease unless cortical and nuclear cataracts. Congenital sutural cataract can be inherited as autosomal dominant or it can be occurred idiopathic. Rarely, it can be seen in Nance-Horan syndrome and cranio-lenticulo-sutural dysplasia [9, 10]. Congenital pulverulent cataract has an appearance like thin cloud of dust. In this cataract morphology, opacities take place in embryonic nucleus. In general, congenital pulverulent cataract is non-progressive and it does not decrease vision [11]. Congenital cerulean cataract is seen as blue-white dots and these opacities take place in superficial layers of fetal or adult nucleus. In general, congenital cerulean cataract is bilateral and progressive and it does not decrease vision until to adulthood [12].

Dot like opacities in anterior lens surface are called as congenital anterior polar cataract. This non-progressive CC morphology can be unilateral or bilateral. It does not decrease vision unless it takes place in central of lens. Nevertheless, if it projects from anterior lens capsule to anterior chamber, it causes blurred vision and amblyopia. At this time, it is called as congenital anterior pyramidal cataract and it is more serious cataract morphology than anterior polar cataract [13]. One clinical study revealed that more than one of four of anterior lens opacifications causes amblyopia [14].

The severity of congenital posterior polar cataract morphologies increases from Mittendorf spot to persistent fetal vasculature. In these cataract formations, persistent fetal vasculature resulting from abnormal regression of primary vitreous can decrease vision seriously [15].

Complete opacification of nucleus and cortex of lens cause total cataract. Trauma, familial cases and metabolic diseases can be responsible for this cataract morphology.

In conclusion, all of CCs are not same and they have different etiologic, clinic and morphologic features. These differential features can help to predict course of disease and to diagnose of related ocular, systemic and genetic conditions. Thus, morphology of CC may be an important factor to tune of cataract surgery time for better visual results. In summary, the different morphological features of CC may have prognostic importance and effect decision of surgery.

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Atypically mitral valve originated giant myxoma presenting with acute ST-segment elevation myocardial infarction and acute pulmonary edema

Akut ST elevasyonlu miyokard infarktüsü ve pulmoner ödem ile presente olan mitral kapakta atipik yerleşimli dev miksoma

Ertan Demirdaş [1], Kıvanç Atılgan [1], Zafer Cengiz Er [1], Ferit Çiçekçioğlu [1]

[1] Bozok University, Faculty of Medicine, Department of Cardiovascular Surgery, Yozgat, Turkey

Abstract

Cardiac myxoma is a rare disease with an incidence of 0.0017-0.03%, and most frequently are seen between the third and sixth decades. The 65% of cases are female. They originate from left atrium in 75% of the cases, from right atrium in 18% and from ventricles in 4%. The most rarely seen cardiac origins are valvular tissues and respectively origin from tricuspid valve, mitral valve, pulmonary valve and aortic valve. The exact incidence of myxomas originating from the mitral valve is not clear. Clinical signs are classified in three groups such as systemic symptoms, symptoms related to thromboembolisms and symptoms related to intracardiac obstructions. Weakness, fever, weight loss, arthralgia are some of the systemic symptoms. Thromboembolisms are caused by either the tumoral tissue or the clot locating on the mass. Dyspnea, orthopnea, dizziness, syncope and pulmonary edema are examples of symptoms resulting from intracardiac obstructions, depending on the size, mobility and localization of the tumor. We aim to present a 77-year-old female presenting with dyspnea, angina pectoris and tachycardia and getting a diagnosis of a giant myxoma originating from the mitral annulus and posterior leaflet causing myocardial infarction with ST elevation, acute pulmonary edema, pulmonary hypertension, paroxysmal atrial fibrillation.

Keywords: Myxoma, Mitral valve, Acute coronary syndrome, Pulmonary edema

Öz

Kardiyak miksomalar %0,0017-0,03 insidansına sahip oldukça nadir olan bir hastalık olup en sık üçüncü ve altıncı dekadlar arasında görülür. Olguların %65'ini kadınlar oluşturur. Olguların %75'inde sol atriyumdan, %18'inde sağ atriyumdan, %4'ünde ise ventriküllerden köken alırlar. En nadir görüldükleri yer ise kapak dokuları olup sıklık sırası triküspit kapak, mitral kapak, pulmoner kapak ve aortik kapaktır. Kapak kökenli miksomaları gerçek insidansı belirsizdir. Klinik belirtileri sistemik semptomlar, emboliler ve intrakardiyak obstrüksiyonlardan kaynaklanır. Güçsüzlük, ateş, kilo kaybı, eklem ağrıları sistemik semptomlardan bazılarıdır. Tromboemboliler tümoral dokunun kendisinden kaynaklanabildiği gibi kitle üzerinde organize olmuş pıhtılardan da meydana gelebilmektedir. Dispne, ortopne, baş dönmesi, senkop ve pulmoner ödem intrakardiyak obstrüksiyonlardan kaynaklanan semptomlardır ve lokalizasyon, boyut ve hareketliliğe göre değişkenlik gösterebilir. Bu makalede dispne, göğüs ağrısı ve taşikardi ile prezente olan ve ST elevasyonlu miyokard enfarktüsü, akut pulmoner ödem, pulmoner hipertansiyon, paroksismal atriyal fibrilasyona yol açan mitral anuler ve posterior kapakçıktan köken alan dev miksoma tanısı alan 77 yaşında bir kadın hastayı sunmayı amaçladık.

Anahtar kelimeler: Miksoma, Mitral kapak, Akut koroner sendrom, Pulmoner ödem

Corresponding author / Sorumlu yazar:
Kıvanç Atılgan
Address / Adres: Bozok Üniversitesi, Tıp Fakültesi, Kardiyovasküler Cerrahi Anabilim Dalı, Yozgat, Türkiye
e-Mail: kivancatilgan@gmail.com

Informed Consent: The author stated that the written consent was received from the patient who was presented in this study.
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Introduction

The primary cardiac neoplasms are rarely seen in comparison to secondary cardiac neoplasms. The 80% of the primary cardiac neoplasms are benign and most of them are myxomas [1]. The remaining part of primary cardiac neoplasms is malignant, and often consists of angiosarcoma [2]. Besides, most of the cardiac malign neoplasms are formed by metastasis originating from pulmonary and are seen a hundred fold than the primary malign cardiac neoplasms [3]. Although the most of the primary cardiac neoplasms are benign, they may cause serious complications resulting with a remarkable increase in morbidity and mortality.

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Case presentation

A 77-year-old female patient applied to our hospital with unstable angina, dyspnea and tachycardia. In the telegraphy there were signs of acute pulmonary edema (Figure 1). In the lung examination bilateral basal crepitant rales were auscultated. ST segment elevation occurred in D2, D3, AVF and V6 derivations and reciprocal ST depression in V1-V3 derivations was observed, the rhythm was sinus (Figure 2). Troponin-I level was higher than 50000 pg/mL, and CKMB level was 101.7 U/L. The patient underwent emergent coronary angiographic intervention with a diagnosis of acute inferoposterior myocardial infarction. With percutaneous transluminal coronary angioplasty, the totally occluded middle circumflex artery lesion was extinguished (Figure 3). Following this process, atrial fibrillation occurred. In the medical history, the patient was complaining of palpitation attacks, which helped us in diagnosing paroxysmal atrial fibrillation. Hemodynamic findings were stable. Intravenous infusion of 1200 mg amiodarone was applied after the electrolyte replacement. Three hours later normal sinus rhythm was restored. On the transthoracic echocardiography a heterogeneous, smooth intracardiac mass with a size of 3.16x2.8 cm and originating from mitral annulus and posterior leaflet with a wide based pedicle. The mass was moving through the left atrium and left ventricle during the diastolic and systolic intervals (Figure 4). A third degree tricuspid regurgitation, normally sized tricuspid annulus, pulmonary arterial pressure of 90-95 mmHg, left atrial dimeter of 4.9 mm and an ejection fraction (EF) of 45% were other echocardiographic findings. Intravenous furosemide was applied due to pulmonary edema. The patient was observed in the intensive care unit and on the third day the patient underwent an elective open heart surgery.

Operational Technique

After median sternotomy bicaval venous cannulation of right atrial appendix and arterial cannulation of the ascending aorta were applied and cardiopulmonary bypass was started with mid-hypothermia (28°C). Cardiac arrest was provided with cold crystalloid cardioplegia and left atriotomy was applied. A smooth, jelly mass with the dimensions of 4x3.5 cm, originating from posterior mitral annulus and valve with a broad-based pedicle and prolapsing in to the left ventricle was observed (Figure 5). The mass was extracted with the pedicle without any harm on the valvular tissue. The remaining area was cauterized with 25W in order to annihilate possible residual myxoma cells. After the completion of left atriotomy closure, intraoperative transesophageal echocardiography was applied and reported as normal functional valvular tissue. The patient was transferred to the intensive care unit with dobutamin drug support with a dose of 5 mcg/kg/min.

In the early postoperative the transthoracic echocardiography, EF was 45-50%, PAB was 30 mmHg, and there was no valvular dysfunction. The patient was discharged on the postoperative seventh day.

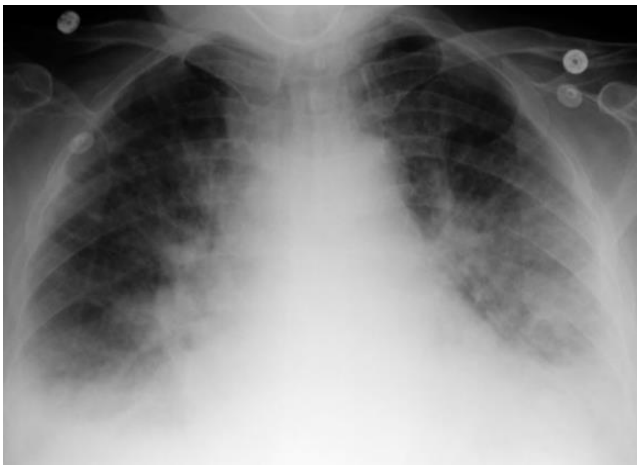

Figure 1: Posterior-anterior chest radiograph: Acute pulmonary edema

Figure 2: ECG of the patient, Acute Myocardial Infarction with ST-segment elevation in D1, D2, AVF, V6 derivations

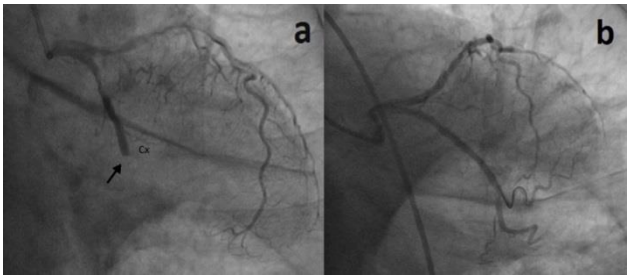

Figure 3: a. Angiographic image of acutely occluded Circumflex artery, b. Angiographic image of Circumflex artery after balloon angioplasty

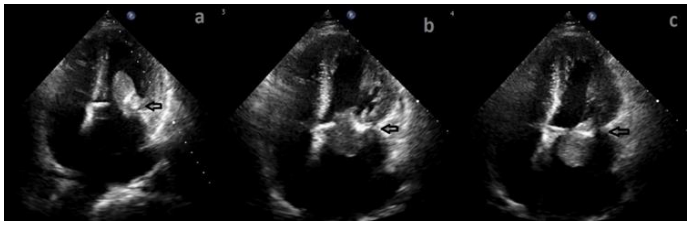

Figure 4: a. Transthoracic image of mobile giant myxoma in left ventricle, b. Myxoma moves through the mitral valve, c. Myxoma moves through left atrium

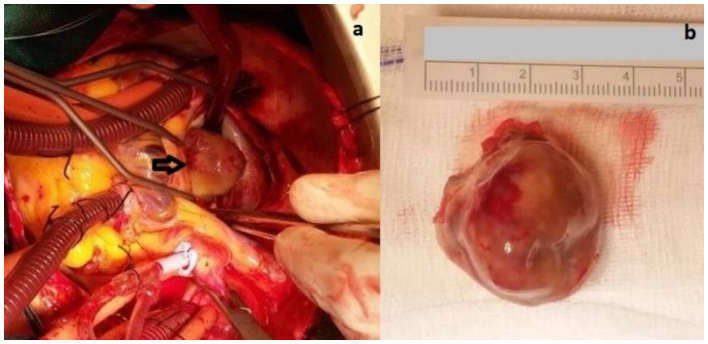

Figure 5: a. Intraoperative image of myxoma, b. Image of myxoma after resection

Discussion

Cardiac myxoma is a rare disease with an incidence of 0.0017-0.03%, and it is most frequently seen between the third and sixth decades. The 65% of cases are female [4]. They originate from left atrium in 75% of the cases, from right atrium in 18% and from ventricles in 4% [5]. The most rarely seen cardiac origins are valvular tissues and respectively origin from tricuspid valve, mitral valve, pulmonary valve and aortic valve [6]. The exact incidence of myxomas originating from the mitral valve is not clear.

Clinical signs are classified in three groups such as systemic symptoms, symptoms related to thromboembolisms and symptoms related to intracardiac obstructions. Weakness, fever, weight loss and arthralgia are some of the systemic symptoms. Anemia, high levels of CRP and erythrocyte sedimentation rate is examples for the laboratory findings.

Some of the symptoms of intracardiac obstructions are dyspnea, orthopnea, dizziness, syncope and pulmonary edema depending on the size, mobility and localization of the tumor [7]. There are two types of cardiac myxomas, polypoid and round-type. Polypoid myxomas are hemi-transparent and gelly-formed, and thus it accompanies a higher risk of embolization. On the other hand, round-type myxoma causes embolization less and the reason is mostly the cloth load on tumor in comparison with the polypoid myxomas' tumoral tissue embolism. Embolization rate is 45-60% for the left originated myxomas and 8-10% for the right originated myxomas, and mostly renal, cerebral and lower extremity arteries are affected [7,8].

Acute coronary syndrome (ACS) is a quite rare embolic complication of myxoma and caused mostly by the tumoral tissue or the cloth material due to the right angle between the aorta and coronary arteries [8]. Hence, in some cases the increased vascularization of myxoma and accompanying coronary artery anomalies may cause ACS, which is called coronary steal syndrome [9-11]. In the literature, it is possible to see only few cases reporting for myxomal coronary steal syndrome. Anyway, it is a significant point for a clinician to think about in a patient presenting with an ACS and myxoma.

Congestive heart failure prevalence among the myxoma cases is 60% but less seen in valvular myxomas in comparison to atrial ones. Because mobile valvular myxomas are diagnosed earlier than they become big enough to cause heart failure due to early embolic symptoms [12]. Myxomas originating from mitral valve are usually localized on the atrial surface and has an equal distribution on both anterior and posterior leaflets [12,13].

In this complicated case, we observed both acute and chronic complications of a giant myxoma as congestive heart failure, arrhythmia, acute pulmonary edema, pulmonary hypertension, tricuspid valve insufficiency and acute coronary syndrome caused by the thromboembolism of coronary arteries. Myxomas originating from valvular tissues are less seen than atrial ones and most of them are diagnosed before they reach giant dimensions due to becoming symptomatic earlier. In this case we observed a myxoma, which became symptomatic in late period and giant enough to cause chronic symptoms like pulmonary hypertension, congestive heart failure, arrhythmia [14,15].

Cardiac myxomas are the most frequently seen benign tumors of heart but sometimes they may have conclusions worse than the malign neoplasms depending on the localization, histology, dimensions and etc. With an early diagnosis and proper operational technique it is possible to cure the patient without any morbidity and mortality.

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Case report
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Unusual presentation of Streptococcus pneumoniae infection as a chest wall abscess

Streptococcus pneumoniae enfeksiyonunun göğüs duvarı absesi olarak alışılmamış sunumu

Murat Sarıçam [1], Serkan Kaya [1]

[1] Namık Kemal University, Department of Thoracic Surgery, Tekirdag, Turkey

Abstract

Chest wall abscess may develop due to primary infection, thoracic wall surgery or trauma. Treatment modality includes identification of the etiology, appropriate antibiotherapy and also surgical drainage in necessary conditions. We reported a 56 year old male who admitted to our clinic with a painful swelling on his back which developed rapid enlargement within two weeks. Computed tomography showed agreement with an abscess formation on the left lateral and posterior chest wall but was unable to diagnose any pathologic involvement in the lung parenchyma or ribs. We performed surgical drainage of the extrapleural collection that presented the growth of Streptococcus Pneumoniae in the postoperative studies. The aim of our report is to introduce an unusual and rare clinical presentation of the bacteria as an extrapulmonary manifestation which required surgical drainage.

Keywords: Chest wall abscess, Streptococcus Pneumoniae, Surgical drainage

Öz

Göğüs duvarı apsesi primer enfeksiyon, göğüs duvarı cerrahisi veya travmaya bağlı olarak gelişebilir. Tedavi yöntemi etiyolojinin saptanması, uygun antibiyoterapi ve gerekli durumlarda cerrahi drenaj uygulanmasıdır. Sırtındaki ağrılı şişlikte son iki haftada hızla büyüme oluşan 56 yaşındaki erkek hastayı sunmaktayız. Bilgisayarlı tomografide sol yan ve arka göğüs duvarında apse ile uyumlu görünüm saptanırken akciğer parankimi veya kaburgalarda herhangi patolojik bulguya rastlanmadı. Cerrahi drenaj uyguladığımız ekstraplevral koleksiyonun ameliyat sonrası incelemesinde Streptococcus Pneumoniae üremesi olduğu bildirildi. Sunumumuzun amacı bakterinin ekstrapulmoner bulgu olarak ortaya çıkan ve cerrahi drenaj gerektiren alışılmamış ve nadir klinik yansımasını takdim etmektir.

Anahtar kelimeler: Göğüs duvarı absesi, Streptococcus Pneumoniae, Cerrahi drenaj

Introduction

Chest wall abscess develops commonly upon infection, trauma or a complication of thoracic wall surgery. Treatment modality includes revelation of the etiology and effective antibiotherapy, however demanding surgery in selected cases [1]. Previous studies in the literature frequently reveal data about the chest wall abscess taking ground on other pathologies [1,2]. Our report is the first one to present a posterolateral chest wall abscess originating from an extrapulmonary Streptococcus Pneumoniae infection.

Case presentation

A 56-year-old male presented to our clinic with a painful swelling on his back which increased to the present size in two weeks period. He shared no history of trauma, respiratory complaints or past history of tuberculosis. The medical history of this patient was unremarkable except diabetes mellitus for which he had been taking medication for 15 years. Our physical examination showed averagely built man with a tense, immobile and fluctuating abscess formation in the left subscapular region surrounding the whole posterior chest wall, extending from vertebral column to anterior midaxillary line (Figure 1). Blood tests revealed white blood cells of 21.05x103 /µL, erythrocyte sedimentation rate of 102 mm per hour and C-reactive protein of 102.6 mg/L. Serology test for human immunodeficiency virus (HIV) was negative.

Corresponding author / Sorumlu yazar:
Murat Sarıçam
Address / Adres: Hurriyet M. Gezer C. No:12, D:5, 59030, Süleymanpaşa, Tekirdağ, Türkiye
e-Mail: msaricam@nku.edu.tr

Informed Consent: The author stated that the written consent was received from the patient who was presented in this study.
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Computed tomography of the thorax showed a collection extending across the left posterolateral chest wall measuring 87x56 mm in size but no sign of pulmonary or intrathoracic pathology (Figure 2). Under general anesthesia, a 15cm horizontal incision over the abscess achieved the drainage of pus which nearly amounted to 1500 mL. Furthermore, irrigation of the space, the debridement of the adhesions, also sampling of the fluid for microbial culture and pathologic examination were carried out. Microbial culture study reported the growth of Streptococcus Pneumoniae which is susceptible to ampicillin and ceftriaxone, whereas Ehrlich-Ziehl-Neelsen staining could not detect any acid resistant bacillus and the result of mycobacterium culture was negative. We discharged the patient on the fifth day after an uneventful postoperative period and administered antibiotheraphy for further ten days. Follow up period did not feature any complication or relapse.

Figure 1: Abscess on the posterolateral chest wall of the patient

Figure 2: Computed tomography scan demonstrating the fluid collection on the chest wall but no intrathoracic pathology

Discussion

Chest wall infections may arise primarily or as a secondary infection caused by previous procedures or preexisting diseases. These infections may be simply treated by administering antibiotic therapy or may demand prolonged drainage and reconstructive operations [1].

Soft tissue abscesses of the chest wall are characterized by usual signs and symptoms of an abscess anywhere on the body, such as swelling, fever, malaise or pain. Computed tomography can successfully identify content and the localization of the collection. Diagnosis can be achieved with a diagnostic aspiration which will guide to the etiology of the abscess. Prompt drainage and appropriate antibiotherapy usually lead to effective treatment [2]. Tuberculosis must always be taken into consideration, regarding the worldwide increase in its number of cases.

Streptococcus Pneumoniae is a gram-positive organism which is the most common cause of community-acquired pneumonia, bacterial meningitis, otitis media and bacteremia, as well as an important cause of sinusitis, septic arthritis, peritonitis and endocarditis [3]. It is less well known as a cause of infections in many other sites, including abdominal organs and soft tissues, which may be very severe [4]. High-risk groups for its infection include children younger than 2 years of age, adults older than 65 years of age, the patients with immune deficits (e.g., HIV infection, malignancy, alcoholism or diabetes mellitus) and the cases associated with decreased pulmonary clearance functions (e.g., asthma or chronic obstructive pulmonary disease) [5]. Treatment of the infection demand appropriate antibiotherapy, decided upon the identification and sensitivity tests of the bacteria. Previous studies in the literature usually cover data about chest wall abscesses arising on the base of tuberculosis, trauma or chondritis [6,7].

Our report is the first one to issue a chest wall abscess developing directly from an extrapulmonary Streptococcus Pneumoniae infection. A successful treatment modality was established by accurate diagnosis, adequate antibiotherapy and effective surgical intervention.

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