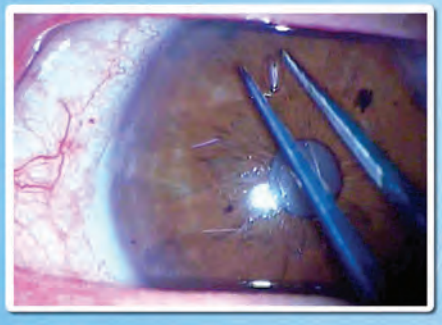
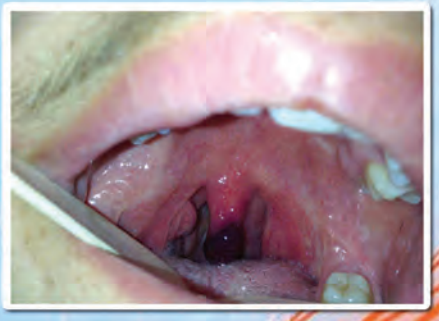
e-ISSN: 2149-3189
Volume 1 Issue 2 July 2015
http://www.eurj.org

The European Research Journal





The European Research Journal

Editorial Board

Contact Information
The European Research Journal (EuRJ)
Bursa Association of Public Hospitals 75. Yıl Bulvarı, Park Caddesi, No:1
Nilüfer/BURSA -TURKEY

Tel : +90(224) 600 33 98/99

e–mail: info@eurj.org
web: http://www.eurj.org

The European Research Journal is published 3 times a year.

This is the first and only officially hardcopy of journal. It will be published only online.

TABLE OF CONTENTS

Original Articles

Case Reports

The European Research Journal

Original Article

http://www.eurj.org

e-ISSN: 2149-3189 DOI: 10.18621/eurj.2015.1.1.33

The factors affecting surgical success rate for the patients with congenital esotropia

Tugba Goncu[1], Funda Dilmen[1], Ali Akal[1], Fatih Mehmet Adibelli[1], Sevim Cakmak[1]

[1] *Department of Ophthalmology, Harran University, School of Medicine, Sanliurfa, Turkey*

ABSTRACT

Objective. To evaluate the factors and preoperative clinical features affecting surgical success rate in patients with congenital esotropia. *Method.* The medical files of patients who underwent surgery for congenital esotropia between June 2012 and September 2014 were retrospectively reviewed. Data from the patients' full ophthalmological examination included visual acuity, ocular alignment, duction, versions and sensory tests for binocularity, cycloplegic retinoscopy and fundus evaluation. Presence of previous ambliyopia treatment, fixation preference, cross-fixation, anisometropia >1.5D, ocular motility abnormalities were noted. The relationship of these variables with the surgical success rate was evaluated. *Result.* A total of 48 patients (25 female,52.1%) were included. The mean age of the patients was 4.4±5.2 years. Successful surgical outcome was achieved in 39 (81.3%). All the patients were followed for 14.1±4.4 months. There was no relation between surgical success and patients' gender, positive family history, consanguinity, previous ambliyopia treatment, anisometropia, abnormal ocular motility and cross-fixation and mean cycloplegic refraction (p>0,05). However, fixation preference and mean preoperative deviation found to be related with surgical failure (p<0,05). *Conclusion.* In this study many variables such as epidemiologic characteristics and clinical features of patients were investigated for their possible association with surgical success rate. Only preoperative fixation preference without ambliyopia and mean preoperative deviation were found to be risk factors for the surgical failure in this group of patients with infantile esotropia.

Eur Res J 2015;1(2):33-38

Keywords: Congenital esotropia, surgical success, ambliyopia, anisometropia, fixation preference

Introduction

Strabismus is an ophthalmological disorder in which the eyes are misaligned; it affects 2-4% of children [1]. About half of these disorders are esodeviations, whose causes are anatomical, neurological, mechanical, refractive, genetic and accommodative [2,3]. Congenital esotropia is a common type of esotropia, representing 28% to 54% of all esotropias and having an incidence of about

Address for correspondence:
Tugba Goncu M.D, Assistant Professor in Ophthalmology, Harran University, Faculty of Medicine, Department of Ophthalmology 63100, Sanliurfa, Turkey
Tel:+90(532) 490 81 02, Fax: +90(414) 318 31 92 Email: drtgoncu@hotmail.com
Received: 22.03.2015; Accepted: 24.05.2015: Published Online: 04.07.2015

1% to 2% of general population [4,5]. It is characterized by a constant esodeviation with onset prior to 6 months of age. The treatment of choice is surgery [6-10]. The surgical success rate is reported in a range of 19% to 79% in the literature [6-11]. The risk factors for surgical failure and reoperation are still controversial. However, earlier surgery before 15 months of age, larger angle, presence of amblyopia, positive family history and accompanying ocular motility abnormalities such as inferior oblique muscle overaction (IOOA), dissociated vertical deviation (DVD), latent nystagmus are suggested to be the risk factors for reoperation [6-8]. However, for congenital esotropia, the impact of consanguineous marriage, fixation preference, presence of cross-fixation or anisometropia on postoperative outcomes are not investigated previously.

The purpose of this study was to evaluate the factors and preoperative clinical features affecting surgical success rate in patients with congenital esotropia with a minumum postoperative follow-up period of 6 months.

Materials and methods

Medical records of consecutive patients who underwent surgery for congenital esotropia in Harran University, Faculty of Medicine, Department of Ophthalmology between June 2012 and September 2014 were reviewed. The study design was approved by Institutional Ethics Committee and the study was carried out in accordance with the Declaration of Helsinki. The patients who underwent surgery for the correction of esotropia were included in the study. The patients who had ocular, neurological, chromosomal, or congenital disease and history of previous ocular surgery were excluded from the study. Among patients, only ones who had postoperative follow-up for at least 6 months were eligible for the study.

Data from the patients' full ophthalmological examination included visual acuity (if visual acuity assessment could not be performed with Lea figures or Snellen, then fixation pattern was evaluated), fixation preference, presence of cross-fixation, ocular alignment (if the patient was cooperative, measurements were performed with alternating prism cover test; if not, the Krimsky test was the preferred method), duction, versions and sensory tests for binocularity (Worth 4 dot test) and stereopsis (Titmus fly test), as well as cycloplegic retinoscopy and detailed biomicroscopic and fundus evaluation. Presence of positive family history, previous ambliyopia treatment and consanguineous marriage were noted from medical history.

Fixation preference was defined as fixing with one eye during examination period however, there was spontaneous alternating of fixation with cover test. According to the mean cycloplegic refraction obtained, patients were classified as emetropic (-1 to +1 diopters D), mild hyperopic (+1 to +3 D), moderate hyperopic (+3 to +6D), severe hyperopic (more than +6 D) and myopic (more than -1 D). Oblique muscle function was subjectively graded on a scale of -4 (underaction) to +4 (overaction), with 0 being normal. A difference of 1.5 D or more in spherical equivalent between the two eyes, was defined as anisometropia. A successful outcome was defined as orthotropia or a horizontal tropia of 10 prism diopters (PD) or less, at distance and/or near in the primary position. The preoperative examination which was performed 1 or 2 days before surgery and postoperative examinations were performed at final visit were analysed.

Statistical Analysis

All analyses were performed with SPSS (Statistical Packages for Social Sciences) for Windows version 17.0 (SPSS®, Chicago, IL, USA). All data were expressed as mean and standard deviation. Histogram graphs and the Kolmogorov-Smirnov test were used to test whether the distribution of the data differed significantly from normal. The differences between the patient groups were assessed for statistical significance using the Mann Whitney U test, chi-square test and Fisher Exact test when appropriate. A p value less than 0.05 was considered as statistically significant.

Results

After reviewing the medical charts, 48 patients who met the criteria were included in the study. The mean age of the patients was 4.4±5.2 years, with a range of 0.5 to 23 years at initial examination. There were 25 (52.1%) female and 23 (47.9%) male patients. The mean follow-up was 14.1±4.4 months, with a

preoperative clinical characteristics of all patients are shown in Table 1

Thirty-eight patients underwent bilateral medial rectus recession, three underwet monocular resection-recession for correcting esotropia in primary position. Combined bilateral medial rectus recession and inferior oblique weakening procedure was performed in 7 patients who had IOOA more than 2+. Surgical success was achieved in 39 (81.3%) of the cases. Further surgery was planned for the remaining patients who could not have successful outcome at final visit. The mean preoperative esotropia in the primary position was 49.1±11.4 with a range of 30 to 80 PD and the mean postoperative deviation was 7.6±13.9 PD with a range of 0 to 60 PD at the final follow-up visit ($p<0.001$).

As shown in Table 2, there was no relation between surgical success and patients' gender, positive family history, consanguinity, previous ambliyopia treatment, anisometropia, abnormal ocular motility and cross-fixation and mean spherical equivalent ($p>0.05$). However, fixation preference and mean preoperative deviation were found to be related with surgical failure ($p<0.05$). All the patients with failure had fixation preference although alternation was demonstrated in last preoperative visit. Only five had been treated for ambliyopia preoperatively. The mean preoperative esotropia in the primary position was 46.9±10.3 PD in surgical success group and 58.3±11.7 PD in surgical failure group and in surgical failure found to be associated with higher preoperative deviation ($p=0.009$).

Table 1. Demographic data and preoperative clinical characteristics of patients

	N=48 (%)
Gender	
Male	23 (47.9%)
Female	25 (52.1%)
Family history	8 (16.7%)
Consanguinity	14 (29.2%)
Ambliyopia history	20 (41.7%)
Cycloplegic refraction (D) (mean±SD)	1.9±2.1
Refractive error	
Emetropia	8 (16.7%)
Mild hyperopia	25 (52.1%)
Moderate hyperopia	7 (14.6%)
Severe hyperopia	5 (10.4%)
Miyopia	3 (6.2%)
Anisometropia	4 (8.3%)
Cross-fixation	8 (16.7%)
Abnormal ocular motility	
IOOA	28 (58.3%)
DVD	9 (18.7%)
Latent nystagmus	3 (6.2%)
Preoperative deviation (PD) (mean±SD)	
Fixation preference	31 (64.6%)

D=diopter, DVD=dissociated vertical deviation, F=female, IOOA=inferior oblique overaction, M=male, PD=prism diopter, SD=standart deviation

Table 2. Preoperative clinical characteristics of the patients in the success and failure groups

	Patients with successful outcome (n=39)	**Patients without successful outcome (n=9)**	*P*
Gender (M/F)	18/21	5/4	0.444*
Family history	8	0	0.148*
Consanguinity	12	2	0.437*
Ambliyopia history	15	5	0.285*
spherical equivalent (D) (mean±SD)	2.0±2.2	1.4±1.5	0.084†
Refractive error			0.398‡
Emetropia	5	3	
Mild hyperopia	22	3	
Moderate hyperopia	5	2	
Severe hyperopia	4	1	
Miyopia	3	0	
Anisometropia	2	2	0.155*
Cross-fixation	5	3	0.159*
Abnormal ocular motility			
IOOA	24	4	0.285*
DVD	5	4	0.05*
Latent Nystagmus	2	1	0.472*
Preoperative deviation (PD) (mean±SD)	46.9±10.3	58.3±11.7	0.009†
Fixation preference	22	9	0.012*

D=diopter, DVD=dissociated vertical deviation, F=female, IOOA=inferior oblique overaction, M=male, PD=prism diopter, SD=standart deviation

* Fisher Exact test

‡ chi-square test

† Mann Whitney U test

Discussion

Although, spontaneous resolution of congenital esotropia can occur, surgery is accepted as the standart treatment [6-9,12]. The aim of the surgery for congenital esotropia is the earliest recovery of deviation, improvement in binocular visual functions with the least possible number of surgeries. In our study, surgical success was achieved in 81.3% of the children with congenital esotropia in a mean follow-up of 14 months. The overall surgical success rate was reported in a range of 19% to 79% in the literature [6-11].

The mean preoperative esotropia in the primary position was 47 PD in surgical success group and 58 PD in surgical failure group and in surgical failure found to be associated with higher preoperative deviation. This compares well with some similar studies which reported higher rate of surgical failure in large angle esotropia [10,13]. In a retrospective large scale study, Louwagie reported higher reoperation rate in larger angle congenital esotropia [14]. Contrary to these results, Vroman et al reported that bilateral medial rectus muscle recession was equally effective for both large and small angle congenital esotropia [7].

Fixation preference testing, in which fixation preference is considered a proxy for visual acuity, has commonly been used to assess for strabismic amblyopia in preverbal children [15,16]. However, its reliability for prediction of amblyopia has been questioned by several investigators [17-19]. In our

study, we observed fixation preference in 64.6% of the overall patients and in all of the failure group. Although, we only included patients who had fixation preference with obvious alternation in cover test and excluded patients who had strong fixation preference without alternation, an indicator for amblyopia, we have observed a significant effect of fixation preference on surgical failure rate. Owing to the fact that, 66.7% of our patients were younger than 4 years of age and fixation preference is a subjective test with doubtful reliability, we might include true amblyopic patients without previous patching treatment.

Congenital esotropia affects both gender equally [20]. Among our patients, 52.1% was female and 47.9% was male. We did not observed a significant difference in respect of surgical success in both genders. Similarly, in two studies also did not report any effect of gender on surgical success [10,13]. Inheritance was shown to play a role in the pathogenesis of congenital esotropia in related studies, binocular vision anomalies were reported in 16% of parents having children with congenital esotropia [21,22]. In our study, 8 patients (16.7%) had a positive family history and surgical success was achieved in all of these patients. Regarding surgical success, we did not observed a significant effect of family history. The risk for birth defects and congenital anomalies in the offsprings of parents having consanguineous marriage is substantially higher than in the offspring of non-consanguineous parents [23]. Although, the frequency of consanguineous marriages have being decreased, it is still common especially in developing countries. In our study, 14 patients (29.2%) had consanguineous parents and represents well the high prevelans of consanguineous marriage in Turkey. Different nationwide surveys indicated that 20-25% of marriages are consanguineous in Turkey [23]. In our study, we did not observed a significant effect of consanguinity on surgical failure rate. In the literature no study has evaluated the effect of consanguinity on congenital esotropia but in only one study, investigated prevalence of consanguineous marriage in parents of patients with different types of comitant strabismus in which they found a higher risk in patients with consanguinity compared to normal population [24].

Mild hyperopia affecting more than 50% of our patients was the most frequent refractive error, consistent with the literature [10,25]. Trigler and Siatkowski have reported hyperopia greater than +2 D in 29 % of patients with congenital esotropia, accordingly 25% of our cases had hyperopia greater than +3 D [6]. We did not observe any significant effect of refractive error on surgical success whereas Ravaji et al reported more surgical success rate in patients with hyperopia greater than +3.5 D [10]. Anisometropia and amblyopia are interrelated factors. We took account only patients who was treated previously for amblyopia and resulted in almost equal visual acuity in both eyes. We thought that it is more reasonable to define persistent amblyopia in sensory group esotropia and we did not include this group of patients. In our study we noted anisometropia in 8.3% of patients and 41.7% of patients were treated due to amblyopia. We observed in our study group that neither anisometropia nor previous amblyopia treatment was a factor for surgical success. Presence of amblyopia was suggested to be the risk factor for surgical failure [2,6,8]. Keenan et al reported that surgical success was significantly lower in children with amblyopia [8]. Because we only included patients who successfully treated for amblyopia and excluded children with true amblyopia, our result were not comparable to these reports. Similar to our results, Rajavi et al could not detect any relation of anisometropia or amblyopia on the reoperation rate of surgery [10].

Abnormal ocular motility problems such as IOOA, DVD or latent nystagmus sometimes accompany congenital esotropia. We have detected IOOA in 58.3%, DVD in 18.7% and latent nystagmus in 6.2% of the patients. Although the detection of IOOA in an infant with severe esotropia is difficult, it has been reported in up to half of the patients with congenital esotropia, which is similar to our results [6-8,10,25]. Dissociated vertical deviation was observed in 5% to 15% of patients in the literature [8,10,25]. Latent nystagmus was observed in 3.2% to 15% of patients in the literature [10,25]. The rates of abnormal ocular motility in our study were in line with previous studies in the literature. We could not detected an association between any of these abnormal ocular motility problems and surgical failure. Rajavi et al also did not reported any effect of abnormal ocular motility on the reoperation rate of surgery [10].

The limitations of this study include the small sample size and disadvantages related to retrospective nature. The number of patients in surgical failure group was smaller compared to success group and this may influence the comparison. These may have affected the power of the study.

Conclusions

In this retrospective study, gender, family history, consanguinity, refractive error, anisometropia, previous amblyopia treatment, abnormal ocular motility such IOOA, DVD and latent nystagmus were not found to be associated with surgical success rate. Only preoperative angle of deviation and preoperative fixation preference without ambliyopia was found to be risk factors for the surgical failure in patients with infantile esotropia.

Conflict of Interest Statement

None of the authors has any proprietary or financial interest in conception and design of this study. No financial support was received for the construction of this study.

References

[1] Mohney BG, Greenberg AE, Diehl NN. Age at strabismus diagnosis in an incidence cohort of children. Am J Ophthalmol. 2007;144:467-9.
[2] American Academy of Ophthalmology. Pediatric Ophthalmology and Strabismus. San Francisco: American Academy of Ophthalmology;2006.
[3] Chew E, Remaley NA, Tamboli A, Zhao J, Podgor MJ, Klebanoff M. Risk factors for esotropia and exotropia. Arch Ophthalmol. 1994;112:1349-5.
[4] Rutstein R, Daum K. Anomalies of binocular vision: diagnosis and management. St. Louis, MO: Mosby Inc; 1998:205-17.
[5] Scheiman MM, Wick B. Optometric management of infantile esotropia: Problems in optometry. Ped Optom. 1990;2:459-79.
[6] Trigler L, Siatkowski RM. Factors associated with horizontal reoperation in infantile esotropia. J AAPOS. 2002;6:15-20.
[7] Vroman DT, Hutchinson AK, Saunders RA, Wilson ME. Two muscle surgery for congenital esotropia: rate of reoperation in patients with small versus large angles of deviation. J AAPOS. 2000;4:267-270.
[8] Keenan JM, Willshaw HE. Outcome of strabismus surgery in congenital esotropia. Br J Ophthalmol. 1992;76:342-345.
[9] Simonsz HJ, Kolling GH. Best age for surgery for infantile esotropia. Eur J Paediatr Neurol. 2011;15:205-208.
[10] Rajavi Z, Ferdosi AA, Eslamdoust M, Yaseri M, Haftabadi N, Kroji S, Sheibani K. The prevalence of reoperation and related risk factors among patients with congenital esotropia. J Pediatr Ophthalmol Strabismus. 2013;50:53-9.
[11] Wright KW, Edelman PM, McVey JH, Terry AP, Lin M. Highgrade stereoacuity after early surgery for congenital esotropia. Arch Ophthalmol. 1994;112:913-919.
[12] Pediatric Eye Disease Investigator Group. Spontaneous resolution of earlyonset esotropia: experience of the congenital esotropia observational Study. Am J Ophthalmol. 2002;133:109-18.
[13] Yusufoglu EE, Cinar FGY, Somer D, Burcu A, Akkaya ZY, Örnek F. Infantil Ezotropyada Cerrahi Basariyi Etkileyen Faktörler. Turk J Ophthalmol 2013;43:413-8.
[14] Louwagie CR, Diehl NN, Greenberg AE, Mohney BG. Long-term follow-up of congenital esotropia in a population-based cohort. J AAPOS. 2009;13:8-12.
[15] Knapp P, Moore S. Diagnostic procedures in an orthoptic evaluation. Am Orthopt J. 1962;12:63-9.
[16] Zipf RF. Binocular fixation pattern. Arch Ophthalmol. 1976;94:401-5.
[17] Hakim OM. Association between fixation preference testing and strabismic pseudoamblyopia. J Pediatr Ophthalmol Strabismus. 2007;44:174-7.
[18] Friedman DS, Katz J, Repka MX, et al. Lack of concordance between fixation preference and HOTV optotype visual acuity in preschool children: the Baltimore Pediatric Eye Disease Study. Ophthalmology. 2008;115:1796-9.
[19] Cotter SA, Tarczy-Hornoch K, Song E, et al. Fixation preference and visual acuity testing in a population-based cohort of preschool children with amblyopia risk factors. Ophthalmology. 2009;116:145-53.
[20] Greenberg AE, Mohney BG, Diehl NN, Burke JP. Incidence and types of childhood esotropia: a population-based study. Ophthalmology. 2007;114:170-4.
[21] Aurell E, Norrsell K. A longitudinal study of childrenwith a family history of strabismus: factors determining the incidence of strabismus. Br J Ophthalmol. 1990;74:589-594.
[22] Ziakas NG, Woodruff G, Smith LK, Thompson JR. A study of heredity as a risk factor in strabismus. Eye 2002;16:519-521.
[23] Tuncbilek E. Clinical Outcomes of Consanguineous Marriages in Turkey. Turk J Pediatr. 2001;43:277-279.
[24] Bagheri M, Farvardin M, Saadat M. A study of consanguineous marriage as a risk factor for developing comitant strabismus. J Community Genet. 2015;6:177-80.
[25] Castro PD, Pedroso A, Hernández L, Naranjo RM, Méndez TJ, Arias A. Results of surgery for congenital esotropia. MEDICC Rev. 2011;13:18-22. Erratum in: MEDICC Rev. 2011;13:42.

The European Research Journal

Original Article

http://www.eurj.org

e-ISSN: 2149-3189

DOI: 10.18621/eurj.2015.1.2.39

Carotid endarterectomy: a comparison on general and local anesthesia

Faruk Toktas[1], Tugrul Goncu[1], Suleyman Surer[1], Gunduz Yumun[1], Kadir Kaan Ozsin[1], Burak Erdolu[1], Senol Yavuz[1], Arif Gucu[1]

[1] *Department of Cardiovascular Surgery, Bursa Yuksek Ihtisas Education and Research Hospital, Bursa, Turkey*

ABSTRACT

Objective. Carotid endarterectomy (CEA) reduces disabling or fatal stroke risk in patients with significant carotid stenosis. The aim of this study was to compare the results of CEA performed under general anesthesia (GA) or local anesthesia (LA) in patients with symptomatic severe carotid artery stenosis. *Method.* We retrospectively collected the data on 64 patients who underwent CEA under GA (47 patients) and LA (17 patients) at our hospital from January 2010 to January 2014. All clinical, demographics, preoperative risk factors and postoperative data were compared for postoperative results. Surgical indications, techniques, and complications were also compared. *Result.* The groups were similar for age, gender and preoperative risk factors. There were no significant differences in death (GA: 4.2% vs. LA: 0%; p =1.0), stroke (GA: 4.2% vs. LA: 0%; p=1.0), death/ stroke rate (GA: 2.1% vs. LA: 0%; p=1.0), nerve injury (GA: 2.1% vs. LA: 5.8%; p=0.464), saphenous vein patch closure (GA: 83% vs. LA: 59%; p=0.051), shunt rate (GA: 8.5% vs. LA: 6 %; p=1.0), hospital stay (GA: 8.2±5.7 day vs. LA: 6.2±2.9 day, p=0.275), hematoma rate (GA: 0 %vs. LA: 5.8%; p =0.266) and transient ischemic attack rate (GA: 4.2% vs. LA: 0%; p=1.0) between the two techniques. Mortality occurred in two patients (both in the GA group) due to stroke and myocardial infarction. *Conclusion.* Carotid endarterectomy performed safely under general or local anesthesia is associated with low morbidity and mortality rates. Local anesthesia can be a safe option for evaluating the better neurological status during operation.

Eur Res J 2015;1(2):39-43

Keywords: Carotid endarterectomy, general anesthesia, local anesthesia, carotid artery stenosis

Introduction

Carotid artery disease is one of the most important causes of stroke. In randomized controlled studies showed that rates of death and stroke are reduced by carotid endarterectomy for carotid artery stenosis in patients with symptomatic or asymptomatic [1-3]. Carotid endarterectomy (CEA) can be performed under general anesthesia (GA) or local anesthesia (LA). Succesful outcome can depend on technique which is used. CEA can be performed safely under LA and can improve the results as compared to GA [2].

The aim of this study was to compare the results

Address for correspondence:
Faruk Toktas, MD, Department of Cardiovascular Surgery, Bursa Yuksek Ihtisas Education and Research Hospital, 16330 Bursa, Turkey
Tel:+90(224) 360 50 50, Fax: +90(224) 360 50 55 Email: faruktoktas@gmail.com
Received: 23.03.2015; Accepted: 29.05.2015: Published Online: 04.07.2015

of CEA performed under GA versus LA and to evaluate the advantages of anesthesia technique on perioperative mortality and morbidity in patients.

Materials and Methods

Patients

After local ethics committee approved the study, we retrospectively collected the data on 64 patients who underwent CEA under GA (47 patients) and LA (17 patients) at our hospital from January 2010 to January 2014. Carotid stenosis was diagnosed with history and physical examination followed by Doppler USG, coronary and carotid angiography. Three patients had a history of coronary artery bypass grafting in the GA group.

Anesthesia and Surgical Technique

All patients were premedicated with midazolam intramuscularly before the operation. In both groups intraoperative monitoring included electrocardiography, invasive blood pressure measured from the contralateral radial artery and pulse oximetry. Induction in general anesthesia was performed with propofol, fentanyl and rocuronium and maintenance of anesthesia was included with isoflurane, fentanyl and rocuronium. Monitoring of neurological function during general anesthesia was based on stump pressure, and selective shunting used if stump pressure was below 50 mm Hg. Local anesthesia group was administered 2% lidocaine as local anesthetic. The patients were periodically examined with respect to clinical neurological status, cognitive functions, speech and attention issues, and muscular strength. All patients with altered level of consciousness underwent protective intraluminal shunt placement. Prior to carotid artery clamping, 5000 units of heparin was administered, which was not routinely neutralized. Operations were performed by standard CEA techniques or eversion techniques. At the former, a saphenous vein patch was placed whenever arteriotomy extended to internal carotid artery. In the latter, primary closure was performed.

Neurological deficits were grouped as major or minor. The latter comprised transient ischemic attack or any other events that were terminated within 48 hours. Major neurological deficits included those that persisted more than 7 hours.

Statistical analysis

Statistical analysis was performed by using SPSS 15.0. All continuous data are expressed as ± standard error of the mean and categorical data are reported as a percentage. Continuous data were compared by Mann- Whitney-U and paired samples t tests, and non-parametric data by the chi-square test. A p value less than 0.05 was considered statistically significant.

Results

GA was used in 47 (% 73) patients for CEA procedures whereas the LA group included 17 (% 27) patients who received CEA procedures. Preoperative patient demographics, preoperative risk factors, indications for surgery and comorbidity factors were similar between the two groups and showed in Table 1.

We found no significant differences in the number of patients with preoperative hypertension (GA: 68% vs. LA: 41%; p=0.510), coronary artery disease (GA: 62% vs. LA: 59%; p=0.835), chronic obstructive pulmonary disease (GA: 23% vs. LA: 15%; p=0.463),transient ischemic attack (GA: 21% vs. LA: 29%; p=0.517), amarosis fugax (GA: 4% vs. LA: 6%, p=0.945), cerebrovascular accident (GA: 43% vs. LA: 29%; p=0.341), diabetes (GA: 25% vs. LA: 12%; p=0.319), smoking (GA: 57% vs. LA: 59%; p=1.00), peripheral occlusive arterial disease (GA: 13% vs. LA: 24%; p=0.295) and contralateral ICA lesions, severe stenosis (>70%) (GA: 89% vs. LA: 88%; p=1.00).

Operative variables in the groups are shown in Table 2. There were no statistically significant differences in death (GA: 4.2% vs. LA: 0% ; p=1.00), stroke (GA: 4.2% vs. LA: 0%; p=1.00), death/ stroke rates (GA: 2.1% vs. LA: 0%; p=1.00), nerve injury (GA: 2.1% vs. LA: 5.8%; p=1.00), use of shunt rates (GA: 8.5% vs. LA: 6%; p=1.00), saphenous vein patch closure (GA: 83% vs. LA: 59%; p=0.051), length of hospital stay (GA: 8.2±5.7 days vs. LA: 6.2±2.9 days; p=0.275), hematoma rates (GA: 0% vs. LA: 5.8%; p=0.266) and transient ischemic attack rates (GA: 4.2 % vs. LA: 0%; p=1.00) between the two techniques. Mortality occurred in two patients due to stroke and myocardial infarction. The both patients were in the GA group.

Table 1. Patient demographics and preoperative variables

	GA Group (n=47)	LA Group (n=17)	*p* Value
Age (years)	66.6±8	67.4±9	0.727*
Sex (male/female)	40 (85)/7 (15)	10 (67)/7 (33)	1.0‡
Risk factors			
Hypertension	32 (68)	7 (41)	0.510‡
Diabetes	12 (25)	2 (12)	0.319‡
COPD	7(15)	4(23)	0.463‡
PAD	6(13)	4(24)	0.295‡
Smoking	27 (57)	10 (59)	1.0‡
IHD	29(62)	10(59)	0.835‡
Symptoms			
TIA	10 (21)	5 (29)	0.517‡
Amaurosis fugax	2 (4)	1 (6)	1.0‡
CVA	20 (43)	5 (29)	0.341‡
Contralateral Stenosis			
(%) <50	30 (64)	11 (65)	0.949‡
50-69	10 (20)	5 (59)	0.517‡
70-99	4 (8)	1 (6)	1.0‡
Occluded	1 (2)	1 (6)	0.464‡
Operated	1(3)	0(0)	1.0‡

Numbers in parentheses are percentages.(*=Mann-Whitney U-test, ‡ =Chi-squared test, p=statistical value. COPD=chronic obstructive pulmonary disease, CVA=cerebral vascular accident, GA=general anesthesia, IHD=ischaemic heart disease, LA=local anesthesia, PAD=peripheral arterial disease, TIA=transient ischemic attack.

Table 2. Operative and postoperative variables

	GA	LA	P value
Death	2(4.2)	0(0)	1.0‡
Stroke	2(4.2)	0(0)	1.0‡
TIA	2(4.2)	0(0)	1.0‡
Myocardial infarction	1(2.1)	0(0)	1.0‡
Nerve injury	1(2.1)	1(5.8)	0.464‡
Shunt rate	4 (8.5)	1(6)	1.0‡
Hospital stay (day)	8.2±5.7	6.2±2.9	0.275‡

Numbers in parentheses are percentages.‡=Chi-squared test, p=statistical value. GA=general anesthesia, LA=local anesthesia, TIA=transient ischemic attack,

Discussion

Previous randomized controlled studies and meta-analyses have shown that reduced rates of death or stroke are associated with CEA performed for both symptomatic and asymptomatic carotid artery stenosis [1-4]. European Vascular Surgery guidelines strongly recommend CEA for symptomatic carotid artery stenosis degree greater than 70%. CEA operation is also reasonable when the stenosis degree is greater than 50% unless the operative rate for stroke or mortality of the performing center exceeds 6% (North American Symptomatic Carotid Endarterectomy Trial; NASCET) [5]. In our institutional experience, a mortality rate was 4.2% (n=2). Although many methods including transcranial Doppler USG, stump pressure measurement, peri-operative EEG and somato-sensorial evoked potentials, have been used to establish the level of cerebral perfusion during arterial cross-clamping, there is no consensus to answer whether which technique is superior? Gurer et al. [6] reported that LA was associated with a significantly lower operation time, shunt usage rate, length of hospital stay, and rates of permanent stroke. Restenosis rates, neurological events, and deaths were similar in the 2 groups at long-term follow-up. However, the rate of shunt placement as well as operative time was lower in LA group than the general anesthesia group. Similarly, intensive care unit requirement, duration of hospital stay, and treatment costs were also lower in the local anesthesia group [7, 8].

In a study by Surer et al. [9] a greater benefit was observed with use of LA with respect to results of intraoperative motor and mental monitoring. LA also provided more protective effects against complications associated with intubation in elderly patients with comorbid conditions, particularly chronic respiratory diseases. Lutz et al. [3] did not report any significant difference between LA and GA groups with regard to death or stroke, while cerebral events (ischemic attack and stroke) and haematomas were more prevalent in the general anesthesia group. One patient in LA group was reoperated for a haematoma in our study. Halm et al. [10] performed a multivariate analysis for clinical features and operative techniques responsible from risk-adjusted rates of combined death and nonfatal strokes or all strokes. In their study, patients with no carotid symptoms had a death or stroke rate of 2.28%; patients with carotid TIAs had a rate of 2.93%; and those with preoperative stroke had a rate of 7.11%. They found three factors associated with a greater risk-adjusted likelihood of complications: stroke as the indication of surgery, presence of coronary artery disease, and contralateral carotid stenosis. LA usage and patch closure technique application were associated with significant reductions in risk-adjusted odds of death or stroke. The authors suggested that these 2 operative techniques may be associated with reduced death or stroke rates. Stoner et al. [11] reported a significantly reduced perioperative complication rate associated with use of LA, especially in high-risk patients undergoing CEA. On the contrary, some studies found no significant differences between LA and GA in terms of stroke, death, and myocardial infarction at postoperative 30 days [12-15]. Surgical strategies including one- or two-stage operations have been suggested to minimize perioperative neurological and cardiac complications [16, 17]. In a sequential retrospective study Ferrero et al. [18] compared the results between LA and GA for 428 CEAs. In their study the morbi-mortality was not influenced by the type of anesthesia used for carotid surgery. They did not detect statistical difference in the perioperative neurological and cardiopulmonary complication rates between LA and GA groups. In another retrospective study, Watts et al. [19] reported that there was no difference between LA and GA with regard to neurologic complications with 582 patients. Kasprzak et al. [20] could also not observed significant differences in the perioperative neurological and cardiopulmonary complication rates between LA and GA in patients undergoing CEA. General Anesthesia versus Local Anesthesia for Carotid Surgery (GALA) trial was a multicenter (95 centers in 24 countries), randomized controlled study comparing LA and GA during surgery in 3526 patients who had either symptomatic or asymptomatic carotid stenosis. It showed no significant difference between the two study groups at 30-day follow-up with respect to death, stroke, stroke or death, myocardial infarction, and length of hospital stay [2].

The limitation of the study

Firstly, this study is a retrospective and single center experience. Secondly, the number in the study groups was low, therefore statistical analysis was limited.

Our clinical experience and results of CEA are consistent with literature. Incidence of stroke and death after both procedures is low. Nonrandomized clinical trials proposed potential benefits of LA over GA, but these studies have a retrospective review. Type of anesthesia does not affect the outcome of surgical treatment of carotid disease. LA can be a safe option for evaluating the better neurological status during operation.

Conflict of interest

The authors disclosed no conflict of interest during the preparation or publication of this manuscript.

Financing

The authors disclosed that they did not receive any grant during conduction or writing of this study.

References

[1] Tangkanakul C, Counsell C, Warlow C. Local versus general anaesthesia for carotid endarterectomy. The Cochrane Database of Systematic Reviews. 2002;2:CD000126.

[2] Lewis SC, Warlow CP, Bodenham AR et al. GALA Trial Collaborative Group. General anaesthesia versus local anaesthesia for carotid surgery (GALA): a multicentre, randomised controlled trial. Lancet. 2008;372(9656):2132-42.

[3] Lutz HJ, Michael R, Gahl B, Savolainen H. Local versus general anaesthesia for carotid endarterectomy-Improving the gold standard? Eur J Vasc Endovasc Surg. 2008;36(2):145-9.

[4] Hidiroglu M, Çetin L, Kunt A, Karakifli O, Küçüker A, Sener E. Early results of carotid endarterectomy for carotid artery diseases. Turk Gogus Kalp Dama. 2010;18(3):190-5.

[5] Liapis CD, Bell PR, Mikhailidis D et al. ESVS guidelines. Invasive treatment for carotid stenosis:indications, techniques. Eur J Vasc Endovasc Surg. 2009;37(4):10-19.

[6] Gurer O, Yapici F, Yapici N, Ozler A, Isik O. Comparison between local and general anesthesia for carotid endarterectomy: early and late results. Vasc Endovasc Surg. 2012;46(2):131-8.

[7] Kalko Y, Kafali E, Aydin U, Kafa U, Kosker T, Basaran M et al. Surgery of the Carotid Artery : Local anaesthesia versus general anaesthesia. Acta Chir Belgica. 2007;107(1):53-7.

[8] McCarthy RJ, Walker R, McAteer P, Budd JS, Horrocks M. Patient and hospital benefits of local anaesthesia for carotid endarterectomy. Eur J Vasc Endovasc Surg. 2001;22(1):13-8.

[9] Surer S, Yay K, Camkiran A, Bekmezci M, Darcin OT. Carotid endarterectomy with Local anaesthesia in patients with advanced age and chronic obstructive pulmonary disease: early term results. Turk J Geriatr. 2013;16(4):372-5.

[10] Halm EA, Hannan EL, Rojas M, Tuhrim S, Riles TS, Rockman CB et al. Clinical and operative predictors of outcomes of carotid endarterectomy. J Vasc Surg. 2005;42(3):420-8.

[11] Stoner MC, Abbott WM, Wong DR, Hua HT, Lamuraglia GM, Kwolek CJ et al. Defining the high-risk patient for carotid endarterectomy: an analysis of the prospective National Surgical Quality Improvement Program database. J Vasc Surg. 2006;43(2):285-95.

[12] Rerkasem K, Rothwell PM. Local versus general anaesthesia for carotid endarterectomy.The Cochrane Database of Systematic Reviews. 2008;4:CD000126. pub3.

[13] Markovic D, Vlajkovic G, Sindjelic R, Markovic D, Ladjevic N, Kalezic N. Cervical plexus block versus general anesthesia in carotid surgery: single center experience. Arch Med Sci. 2012;8(6):1035-40.

[14] Sideso E, Walton J, Handa A. General or local anesthesia for carotid endarterectomy the-"real-world" experience. Angiology. 2011;62(8):609-13.

[15] Schechter MA, Shortell CK, Scarborough JE. Regional versus general anesthesia for carotid endarterectomy: the American College of Surgeons National Surgical Quality Improvement Program perspective. Surgery. 2012;152(3):309-14.

[16] Gensare B, AngelisI I, Weingartner J, Neumaier-Prauser P, Spiliopoulos K, Kemkes BM. Simultaneous carotid endarterectomy and cardiac surgery-additional risk factor or safety procedure? J Thorac Cardiovasc Surg. 2003;51(1):22-7.

[17] Yildirim T, Akgün S, Sur H, Kinikoglu H, Bilgin F, Arsan S. Short-term results of simultaneous carotid endarterectomy and myocardial revascularization. Turk Gogus Kalp Dama. 2004;12(3):156-60.

[18] Ferrero E, Ferri M, Viazzo A, Ferrero M, Gaggiano A, Berardi G, Pecchio A, Piazza S,Cumbo P, Nessi F. Carotid endarterectomy: Comparison between general and local anesthesia. Revision of our experience with 428 consecutive cases. Ann Vasc Surg. 2010;24(8):1034-7.

[19] Watts K, Lin PH , Awad S, McCoy S, Felkai D, Zhou W et al. The impact of anaesthetic modality on the outcome of carotid endarterectomy. Am J Surg. 2004;188(6):741-7.

[20] Kasprzak PM, Altmeppen J, Angerer M, Mann S, Mackh J, Topel I. General versus locoregional anaesthesia in carotid surgery: a prospective randomised trial. Vasa. 2006;35(4):232-8.

The European Research Journal

Original Article

http://www.eurj.org

e-ISSN: 2149-3189

DOI: 10.18621/eurj.2015.1.2.44

Clinical assessment of the severity of chronic hand eczema: correlations between six assessment methods

Nilay Duman[1], **Erol Uzunali**[2]

[1] *Department of Dermatology, Afyon Kocatepe University, School of Medicine, Afyonkarahisar, Turkey*
[2] *Department of Dermatology, Afyonkarahisar State Hospital, Afyonkarahisar, Turkey*

ABSTRACT

Objective. The severity of hand eczema (HE) can be assessed via numerous methods, however, a standard method remains lacking. Furthermore, correlations between the various methods are not known. The purpose of the study was to evaluate the correlations between six different methods used for assessing the severity of chronic HE. *Method.* The study included 100 patients with chronic HE. The severity of HE was assessed using the Hand Eczema Severity Index (HECSI), Physician Global Assessment (PGA), Dermatology Life Quality Index (DLQI), Photographic Guide (PG), Osnabrueck Hand Eczema Severity Index (OHSI), and Investigators' Global Assessment (IGA). Furthermore, correlations between the 6 methods were determined. *Result.* There was a strong correlation between HECSI, and OHSI, mTLSS, PG, and IGA, and between IGA, and PG and OHSI ($P < 0.001$). There was a moderate correlation between DLQI and PGA ($P < 0.001$), whereas correlations between DLQI and the other scales were weak. The females had lower quality of life, although gender was not associated with disease severity according to the other scales. *Conclusion.* Overall, the six methods used for assessing the severity of HE were significantly positively correlated. Females had lower quality of life, but the severity of HE assessed via the other five scales did not vary according to gender. The weakest correlation was between DLQI and all other scales.

Eur Res J 2015;1(2):44-49

Keywords: Chronic hand eczema; severity; quality of life.

Introduction

Hand eczema (HE) is among the most common dermatological disorders. The severity of HE varies from mild disease to severe disease that causes significant disability [1]. Assessment of the severity of HE via objective and reproducible methods is essential for evaluating preventative and therapeutic strategies. Numerous methods of assessing the severity of HE-including subjective and quantitative scoring systems-have been developed, but a standard method remains lacking [2]. Furthermore, correlations between

Address for correspondence:
Nilay Duman MD, Department of Dermatology Ali Cetinkaya Kampusu, Afyon Kocatepe University, School of Medicine, Ýzmir Karayolu 7. Km Afyonkarahisar, Turkey,
Tel:+90(272) 444 03 04, Fax: +90(272) 246 33 22 Email: nilybayram@hotmail.com
Received: 18.12.2015; Accepted: 16.03.2015: Published Online: 04.07.2015

the various methods of assessing the severity of HE have yet to be clarified.

The aim of the present study was to evaluate the correlations between 6 HE severity measurement scales in a group of patients with chronic HE: the Hand Eczema Severity Index (HECSI), Physician Global Assessment (PGA)-Modified Total Lesion Symptom Score (mTLSS), Dermatology Life Quality Index (DLQI), Photographic Guide (PG),Osnabrueck Hand Eczema Severity Index (OHSI), and Investigators' Global Assessment (IGA).

Materials and Methods

The study included 100 patients with chronic HE. Chronic HE was diagnosed according to Apfelbacher et al.[3], as follows:

• Disease duration • 3 months or • 3 flare-ups during the previous 12 months.

• Pretreatment with topical steroids.

• No long-lasting healing in response to adequate topical treatment, including corticosteroids.

• No other active skin diseases or acute skin infections.

Exclusion criteria were as follows:

• Age < 18 years.

• Any systemic disease likely to affect hand findings.

• Treatment with phototherapy, X-ray radiation, or systemic corticosteroids, retinoids, or immunosuppressant drugs during the previous 4 weeks.

• Clear or almost clear HE.

Demographic data, disease duration, and nail involvement were evaluated. The severity of HE in each patient was assessed via HECSI, PGA-mTLSS, PG, OHSI, and IGA. Furthermore, quality of life data were obtained using DLQI. Correlations between these six scoring systems were evaluated.

HECSI is a validated scoring system designed for clinical assessment of HE that is based on both the extent and intensity of clinical signs [4]. The hand is divided into five areas (fingertips, fingers (except the tips), palms, hand dorsa, and wrists. For each area the intensity of six clinical signs (erythema, induration/population, vesicles, fissuring, scaling, and edema) are graded as follows: 0: no skin changes; 1: mild disease; 2: moderate disease; 3: severe disease. In terms of the extent of clinical signs, the total affected area of both hands is given a score of 0-4 (0: 0%; 1: 1%-25%; 2: 26%-50%; 3: 51%-75%; 4: 76%-100%). The score for the extent at each area is multiplied by the total sum of the intensity of each clinical sign, and the total sum of the scores of each area is the HECSI total score, which varies from 0 to 360 [4].

OHSI is a system for scoring skin changes based on morphological criteria and extension [5]. In total, 6 clinical signs are evaluated: erythema, scaling, papules, vesicles, infiltration, and fissures. Extension is assessed based on the area of the hands affected by • 1 clinical signs A 1/8 scoring system is used for the affected areas in each hand (fully affected palm: 1/8; dorsum: 1/8; each palmar/dorsal aspect of the fingers: 1/8).The affected areas on both hands are combined (if both hands are completely affected the score is 8/8, or 1). Each clinical sign, except fissures, are graded as follows: 0: absent; 1: extension • 1/8. 2: extension between 1/8 and 2/8; 3: extension > 2/8. Fissures are graded as follows: 0: absent; 1: a small flat fissure (• 5 mm not hemorrhagic); 2: several small flat or larger (> 5 mm) flat fissures; 3: any deeper (hemorrhagic) fissure. Total sum of the grades for each clinical sign constitutes the OHSI total score, which ranges from 0 to 18 [5].

IGA consists of a 5-level scale: 0. Clear: no signs of HE; 1.Almost clear: just perceptible scaling, and/or erythema; 2. Mild disease: mild scaling and/or mild erythema, and/or mild cracking; 3. Moderate disease: moderate scaling and/or erythema, and/or moderate cracking/fissuring; 4. Severe disease: severe scaling and/or severe erythema, and/or severe cracking/fissuring [6]. Dorsal and palmar surfaces of the hand are evaluated together. In the present study the IGA score was assessed according to the more severely affected hand.

PGA is a 5-level scale: clear, almost clear, mild disease, moderate disease, and severe disease [7]. Each level is described according to the severity of six clinical signs (erythema, scaling, hyperkeratosis/lichenification, vesiculation, edema, and fissures, and such subjective symptoms as pruritus/pain) and a percentage of the handsurface involved. The severity of each sign or symptom is evaluated according to the modified Total Lesion Symptom Score (mTLSS), ranging from 0 (absent) to 3 (severe) [7].

DLQI is a 10-item questionnaire designed for use in dermatological patients aged >18 years [8, 9]. DLQI takes into account 6 aspects of daily life during the previous week: symptoms and feelings; daily activities; leisure; work and school; personal relationships; treatment. Each item is scored from 0 to 3 and the sum of the items is the DLQI total score, which ranges from 0 (no impairment of quality of life) to 30 (maximum impairment) [8]. Hongbo et al. classified DLQI scores, as follows: 0-1: no effect on patient's life; 2-5: small effect on patient's life; 6-10: moderate effect on patient's life; 11-20: large effect on patient's life; 21-30: very large effect on patient's life [10].

Recently, Conreeds et al. constructed a validated clinical photographic guide (PG) for assessing the severity of HE [11]. This guide evaluates the severity of HE according to the clinical findings in 5 categories: clear, almost clear, moderately severe, severe, and very severe.

Patients with history of chronic HE, but without evident current clinical findings of HE (fitting clear or almost clear based on PGA-mTLSS, PG, and IGA) were excluded from the study. All patients were informed and provided written informed consent, and the study protocol was approved by the Regional Ethics Committee.

Statistical methods

Statistical analysis was performed using SPSS v.18.0 for Windows (SPSS, Inc., Chicago, IL, USA). Continuous variables are presented as mean ± standard deviation (SD) or median (range); categorical variables are presented as percentage. For normally distributed variables between-group differences were determined via the independent samples t-test, whereas the Mann-Whitney U test was used for variables that were not normally distributed. The chi-square test was used to identify associations between categorical variables. The correlation between different groups was evaluated using Spearman's correlation coefficient. Statistical significance was considered as P = 0.05. Spearman's correlation coefficients were grouped as follows: < 0.3: weak correlation; 0.3-0.7: moderate correlation; > 0.7: strong correlation.

Results

Among the 100 patients, 62 (62%) were female and 38 (38%) were male. Mean age of the patients was 37.1 ± 15.2 years (range: 18-78 years; median: 32 years) and median disease duration was 24 months. Mean age of the female and male patients was 33.9 ± 12.9 and 42.1 ± 17.5, respectively, and median disease duration was similar in the male and female patients (P = 0.554). Nail involvement was observed in 9 (9%) patients.

According to PGA, 11 (11%), 40 (40%), and 49 (49%) patients had mild, moderate, and severe HE, respectively. Mean PGA-mTLSS score in females and males was similar (6.4 ± 2 and 7.3 ± 3.2, respectively, P = 0.12). According to PG, 30 (30%) patients had mild HE, whereas 47 (47%) and 23 (23%) had moderate and severe HE, respectively. According to IGA, 37 (37%), 44 (44%), and 19 (19%) patients had mild, moderate, and severe HE, respectively. Disease severity assessed via PGA-mTLSS, IGA,and PG did not differ according to gender (P = 0.867, P = 0.891, and P = 0.25, respectively).

Median HECSI score was 27.5 (28 in females vs. 24 in males, P = 0.418) and HECSI score was not associated with age (P = 0.083), disease duration (P = 0.611), gender (P= 0.868), or nail involvement (P = 0.165). Median OHSI score in the females and males was 6 (P = 0.793). OHSI score was not correlated with age (P = 0.177), disease duration (P = 0.436), gender (P = 0.941), or nail involvement (P = 0.727). Median DLQI score was 7. DLQI score was not correlated with age (P = 0.586), disease duration (P = 0.110), or nail involvement (P = 0.919). A weak correlation was noted between DLQI score and gender (rs = 0.212, P = 0.034). Mean DLQI score in females was 8.1 ± 6.0, versus 5.8 ± 4.5 in males (P = 0.034).

The strongest correlation was between HECSI and OHSI (rs = 0.842, P < 0.001), followed by IGA and PG (rs = 0.819, P < 0.001), and HECSI and PGA-mTLSS (rs = 0.812, P < 0.001). Furthermore, there was a strong correlation between OHSI and IGA (rs = 0.749, P < 0.001), between HECSI and PG (rs = 0.736, P < 0.001), and between HECSI and IGA (rs = 0.724, P < 0.001).There was a moderately strong correlation between DLQI and PGA(rs = 0.372, P < 0.001), between PGA-mTLSS and PG (rs = 0.554, P < 0.001), between OHSI and PG (rs = 0.653, P < 0.001), between OHSI and PGA-mTLSS (rs = 0.690, P < 0.001), and between

IGA and PGA-mTLSS (rs = 0.632, P < 0.001). Furthermore, there was a weak correlation between DLQI and HECSI (rs = 0.284, P = 0.004), between DLQI and PG (rs = 0.197, P = 0.05), between DLQI and IGA (rs = 0.294, P = 0.003), and between DLQI and OHSI (rs = 0.252, P = 0.011). Correlations between the six assessment methods are shown in the Table 1.

Table 1. Correlations between the six assessment methods

Methods	r_s	P-value
HECSI-OHSI	0.842	< 0.001
IGA-PG	0.819	< 0.001
HECSI-PGA	0.812	< 0.001
OHSI-IGA	0.749	< 0.001
HECSI-PG	0.736	< 0.001
HECSI-IGA	0.724	< 0.001
DLQI-PGA	0.372	< 0.001
PGA-PG	0.554	< 0.001
OHSI-PG	0.653	< 0.001
OHSI-PGA	0.690	< 0.001
IGA-PGA	0.632	< 0.001
DLQI-HECSI	0.284	0.004
DLQI-PG	0.197	0.05
DLQI-IGA	0.294	0.003
DLQI-OHSI	0.252	0.011

DLQI: dermatology life quality index, HECSI: hand eczema severity index, IGA: investigators' global assessment, OHSI: osnabrueck hand eczema severity index, PG: photographic guide, PGA: physician global assessment, rs: spearman's rank correlation coefficient

Discussion

In the present study there were more female than male patients (62% vs. 38%), which is consistent with other recent studies (Apfelbacher et al. [3] studied 1163 HE patients [54.6% female vs. 45.4% male], Mollerup et al. [12] studied 294 patients [64.6% female vs. 35.4% male], and Agner et al. [13] studied 416 patients [60.6% female vs. 39.1% male]), but is inconsistent with others that included more male than female patents [14-16]. The incidence of HE may be higher in females due to a greater tendency to seek medical treatment for HE [12].

In the present study mean age of the patients was 37.1 ± 15.2 years (median: 32 years). In a multicenter study that included 416 HE patients median age was 39 years [13]; however, Apfelbacher et al. [3] reported

that mean patient age was 47.0 ± 13.7 years. Differences in patient age between studies may be due to differences in the timing of exposure to various irritants and allergens associated with socioeconomic factors and environmental factors. The female patients were younger than the males in the present study (mean age: 33.9 vs. 42.1), which is in agreement with Charan et al. [9], who reported that majority of the females were aged 40-49 years, versus 50-59 years for the males. Onset of HE may be earlier in females because of earlier exposure to irritants or allergens, which needs to be clarified with further studies.

In the present study there were significant positive correlations between the 6 HE severity assessment methods. The weakest correlation was between DLQI and the other 5 severity scores, which is consistent with Agner et al. [13], who compared HECSI, PGA-mTLSS, PG, and DLQI, and reported that although the 4 methods were correlated, the correlation between DLQI and the 3 other scores was weakest. The differences in these correlation findings might be due to differences in the assessment scales' characteristics. For instance, DLQI is not a HE-specific scale; it takes into account physical, social, and functional impairment because of a skin disease, whereas the other scales are HE specific.

The median DLQI score was 7 in the present study, which indicates that chronic HE had a significant negative effect on patient quality of life, as reported earlier [9, 13]. Furthermore, although quality of life scores were lower in the present study's female patients, disease severity (according to PGA-mTLSS, OHSI, IGA, HECSI, and PG) was similar in the males and females, as previously reported [12, 18, 19]. In contrast, a multicenter study that included416 HE patients reported that males were more severely affected than females (median HECSI score: 20.5 in males vs. 14.5 in females, $P < 0.025$), but that there wasn't a significant difference in quality of life according to gender [13]. In both genders HE had a significant negative effect on quality of life (mean DLQI score: 7 for males vs. 8 for females; $P = 0.406$). The researchers concluded that lower disease severity, but similar quality of life in the female patients indicated that quality of life was more easily affected in females, which also supports the present DQLI findings.

In the present study the severity of HE was not associated with patient age, which is consistent with Charan et.al. [9], but is in contrast to Agner et al. [13],who reported that the severity of HE increased with age. Agner et al. [13] also reported that the negative effect of HE on quality of life did not increase significantly with age, indicating that HE patients might become more tolerant of the disease as they age. In addition there wasn't a significant correlation between age and DLQI score in the present study, which is similar to earlier findings [12, 13, 17, 20].

Published findings on the correlation between HECSI and DLQI are inconsistent. Agner et al. [17] reported that there was a significant positive correlation between HECSI and DLQI ($rs = 0.30$, $P < 0.001$), whereas Charan et al. [9] reported that there wasn't a significant correlation between HECSI and DLQI ($P = 0.078$). In the present study there was a significantly positive, but weak correlation between HECSI and DLQI, as reported by Agner et al [17]. The correlation between OHSI and DLQI has not been studied extensively. In a recent study Boehm et al. [20] reported a strong correlation between DLQI total score and OHSI ($r = 0.419$, $P <0.001$), whereas in the present study there was a positive, but weak correlation between DLQI and OHSI.

In conclusion, the present study examined the correlations between 6 HE severity assessment methods in a group of chronic HE patients. There were significant positive correlations between the 6 methods. Age and disease duration were not associated with the severity of chronic HE, according to all 6 methods. Quality of life was more negatively affected by HE in the female patients (based on DLQI scores), although there weren't any differences according to genderbased on the other 5 assessment scales. Among all the correlations, the weakest correlation was between DLQI and the other 5 scales, indicating that a HE-specific version of DLQI is needed. methods in a group of chronic HE patients. There were significant positive correlations between the six methods. Age and disease duration were not associated with the severity of chronic HE, according to all six methods. Quality of life was more negatively affected by HE in the female patients (based on DLQI scores), although there weren't any differences according to genderbased on the other five assessment scales. Among all the correlations, the weakest correlation was between DLQI and the other five scales, indicating that a HE-specific version of DLQI is needed.

References

[1] Cortesi PA, Scalone L, Belisari A, Bonamonte D, Cannavò SP, Cristaudo A, et al. Cost and quality of life in patients with severe chronic hand eczema refractory to standard therapy with topical potent corticosteroids. Contact Dermatitis. 2014;70:158-68.
[2] Weistenhöfer W, Baumeister T, Drexler H, Kütting B. An overview of skin scores used for quantifying hand eczema: a critical update according to the criteria of evidence-based medicine. Br J Dermatol. 2010;162:239-50.
[3] Apfelbacher C, Molin S, Weisshaar E, Bauer A, Elsner P, Mahler V, et al. Characteristics and provision of care in patients with chronic hand eczema: updated data from the CARPE registry. Acta Derm Venereol. 2014;94:163-7.
[4] Held E, Skoet R, Johansen JD, Agner T. The hand eczema severity index (HECSI): a scoring system for clinical assessment of hand eczema. A study of inter- and intraobserver reliability. Br J Dermatol. 2005;152:302-7.
[5] Skudlik C, Dulon M, Pohrt U, Appl KC, John SM, Nienhaus A. Osnabrueck hand eczema severity index--a study of the interobserver reliability of a scoring system assessing skin diseases of the hands. Contact Dermatitis. 2006;55:42-7.
[6] Thaci D, Steinmeyer K, Ebelin ME, Scott G, Kaufmann R. Occlusive treatment of chronic hand dermatitis with pimecrolimus cream 1% results in low systemic exposure, is well tolerated, safe, and effective. An open study. Dermatology. 2003;207:37-42.
[7] Ruzicka T, Lynde CW, Jemec GB, Diepgen T, Berth-Jones J, Coenraads PJ, et al. Efficacy and safety of oral alitretinoin (9-cis retinoic acid) in patients with severe chronic hand eczema refractory to topical corticosteroids: results of a randomized, double-blind, placebo-controlled, multicentre trial. Br J Dermatol. 2008;158:808-17.
[8] Finlay AY, Khan GK. Dermatology Life Quality Index (DLQI): A simple practical measure for routine clinical use. Clin Exp Dermatol. 1994;19:210-6.
[9] Charan UP, Peter CV, Pulimood SA. Impact of hand eczema severity on quality of life. Indian Dermatol Online J. 2013;4:102-5.
[10] Hongbo Y, Thomas CL, Harrison MA, Salek MS, Finlay AY. Translating the science of quality of life into practice: What do dermatology life quality index scores mean? J Invest Dermatol. 2005; 125:659-64.
[11] Coenraads PJ1, Van Der Walle H, Thestrup-Pedersen K, Ruzicka T, Dreno B, De La Loge C,et al. Construction and validation of a photographic guide for assessing severity of chronic hand dermatitis. Br J Dermatol. 2005;152:296-301.
[12] Mollerup A, Veien NK, Johansen JD. An analysis of gender differences in patients with hand eczema - everyday exposures, severity, and consequences. Contact Dermatitis. 2014;71:21-30.
[13] Agner T, Andersen KE, Brandao FM, Bruynzeel DP, Bruze M, Frosch P, et al; EECDRG. Hand eczema severity and quality of life: a cross-sectional, multicentre study of hand eczema patients. Contact Dermatitis. 2008;59:43-7.
[14] Handa S, Kaur I, Gupta T, Jindal R. Hand eczema: Correlation of morphologic patterns, atopy, contact sensitization and disease severity. Indian J Dermatol Venereol Leprol. 2012;78:153-8.
[15] Meding B, Swanbeck G. Epidemiology of different types of hand eczema in an industrial city. Acta Derm Venereol. 1989;69:227-33.
[16] Suman M, Reddy BS. Pattern of contact sensitivity in Indian patients with hand eczema. J Dermatol. 2003;30:649-54.
[17] Agner T, Jungersted JM, Coenraads PJ, Diepgen T. Comparison of four methods for assessment of severity of hand eczema. Contact Dermatitis. 2013;69:107-11.
[18] Wallenhammar LM, Nyfjall M, Lindberg M, Meding B. Health-related quality of life and hand eczema - a comparison of two instruments, including factor analysis. J Invest Dermatol. 2004; 122: 1381-1389.
[19] Bingefors K, Lindberg M, Isacson D. Quality of life, use of topical medications and socio-economic data in hand eczema: a Swedish nationwide survey. Acta Derm Venereol. 2011;91:452-8.
[20] Boehm D, Schmid-Ott G, Finkeldey F, John SM, Dwinger C, Werfel T, et al. Anxiety, depression and impaired health-related quality of life in patients with occupational hand eczema. Contact Dermatitis. 2012;67:184-92.

The European Research Journal

Original Article

http://www.eurj.org

e-ISSN: 2149-3189

DOI: 10.18621/eurj.2015.1.2.50

Differential diagnosis and proper aproach for ophthalmomyiasis externa: an experience of 12 patients

Gulsah Usta[1], Melisa Zisan Karslioglu[2], Ramazan Adanir[3]

[1]*Department of Ophthalmology, Golhisar State Hospital, Burdur, Turkey*

[2] *Department of Ophthalmology, Suruc State Hospital, Sanliurfa, Turkey*

[3] *Department of Parasitology, Faculty of Veterinary Medicine, Mehmet Akif Ersoy University, Burdur, Turkey*

ABSTRACT

Objective. To evaluate the differential diagnosis and therapy of patients who had ophthalmomyiasis externa, which is a self-limiting parasitic disease and is formed as a result of infestation of ocular surface with myiasis flies. *Method.* A retrospective study. *Result.* In our series we evaluated 12 patients attending intense eyelid edema and mimicking an acute catarrhal conjunctivitis, with symptoms of burning, stinging, itching, and increase in lacrymation as well as the sense of foreign body moving in the eye. After further biomicroscopic examination 1 - 2 mm size of mobile, black headed transparent larvae were seen. After mechanical removal of larvae from the eye, topical antibiotic and mild steroid drops were sufficient for improvement. *Conclusion.* We hereby want to emphasize the importance of careful examination and detailed anamnesis even in conjuncitivitis cases.

Eur Res J 2015;1(2):50-54

Keywords: Conjunctivitis, oestrus ovis, ophthalmomyiasis

Introduction

Ophthalmomyiasis externa is a self-limiting parasitic disease which is formed as a result of infestation of ocular surface with myiasis flies [1,2]. Even though ocular involvement is under 5% in all human myiasis, especially in summer ophthalmomyiasis is frequently seen in regions where farm animals exist. Oestridae ovis larva which is in Schizophora series of Diphtheria team, is the most common ophthalmomyiasis reason. Oestridae ovis is commonly isolated from nasal and paranasal cavities of farm animals in which insufficient hygienic conditions are provided [3]. Its clinical presentation is mostly mimicking an acute catarrhal conjunctivitis, with burning, stinging, itching, and increase in lacrimation as well as the sense of foreign body moving in the eye. With anterior segment involvement, it can cause pseudo orbital cellulitis and punctate keratitis. Larvae of myiasis flies rarely penetrate the ocular surface, defined as ophthalmomyiasis interna and cause complications can end up with vision loss [4-6].

Address for correspondence:
Melisa Zisan K, MD, Kudret Eye Hospital, Kennedy Street, No:71, Kavaklýdere, Ankara, Turkey
Gsm: +90 (506) 675 00 40, Tel: +90 444 4 544, Fax: +90 (312) 446 47 71 E-mail: mzkarslioglu@gmail.com
Received: 22.03.2015; Accepted: 02.06.2015: Published Online: 04.07.2015

Materials and Methods

In this study twelve external ophthalmomyiasis cases were evaluated, including eight patients applied to Burdur Gölhisar State Hospital Ophthalmology Department and four patients applied to Sanliurfa Suruc State Hospital Ophthalmology Department. The demographic data and anamnesis of patients were shown particularly in Table 1.

In detailed ophthalmologic examination, patients had hyperemia, lacrymation, and intense edema on eyelids in one eye as shown in Figure 1. In biomicroscopic examination papillary reaction, microhemorrhages and mucose secretion on tarsal conjunctiva was observed. Upon further examination, 1 - 2 mm size of moving, black headed transparent larvae were determined as shown in Figure 2. The larvae that escaped from the bright light of biomicroscopy, were immobilized by dropping topical local anaesthetic (proparacaine HCl 0.5%). Then they were taken out from conjunctiva by the help of forceps. At that time the larvae were observed to be held on to external tissues pretty strong with their hooks. Except one of our patients, this process was applied in polyclinic condition. Only a 4 year old girl was interfered under general anaesthesia. As to identify the species, larvae were put into 10% formol solution. After eyes were irrigated with 0.9% saline solution, topical antibiotic ofloxacin 0.3% drop (4 times a day) and topical fluorometholone 0.1% drop (4 times a day) were prescripted. After a week of treatment, all the patients got well. The larvae which were sent to Mehmet Akif Ersoy University, Faculty of Veterinary Medicine, Parasitology Department were found to be first term larvae of Oestrus ovis as shown in Figure 3 and Figure 4.

Table 1. The demographic data and detailed anamnesis of patients

Patient	Age/ sex	Date of application	Suffered eye	Anamnesis	Occupation	Number of larva
1	4 / F	June, 2014	OD	Dust got into eye	-	4
2	50 / F	July, 2014	OD	Hit by a fly	Shepherd	4
3	45 / F	August, 2014	OS	Hit by a fly	Farmer	3
4	49 / F	September, 2014	OD	Hit by a fly	Shepherd	Uncounted
5	60 / F	September, 2014	OD	Hit by a fly	Farmer	Uncounted
6	18 / M	September, 2014	OS	Hit by something	Student	3
7	41 / K	November, 2014	OD	Hit by something	Workman	13
8	19 / M	November, 2014	OD	Hit by something	Student	12
9	17 / M	March, 2014	OD	Hit by a fly	Student	11
10	33 / F	September, 2013	OS	Hit by something	Housewife	5
11	21 / M	September, 2013	OS	Hit by a fly	Student	9
12	52 / M	August, 2013	OD	Hit by a fly	Shopkeeper	Uncounted

F: female, M: male, OD: ocular dexter (right eye), OS: ocular sinister (left eye)

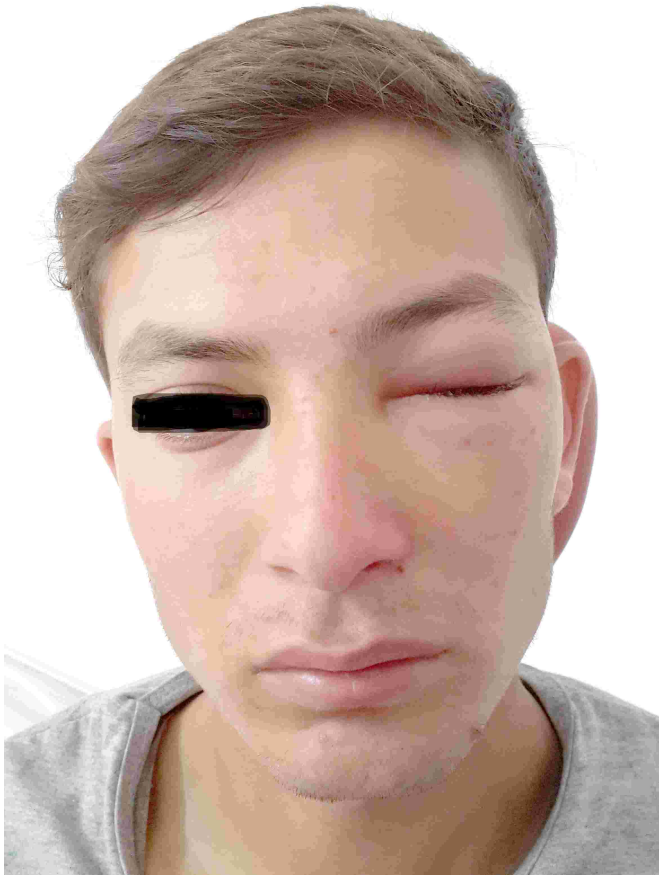


Figure 1. Unilateral intense eyelid edema, hyperemia, mucoid secretion, appearence of pseudoorbital cellulite.

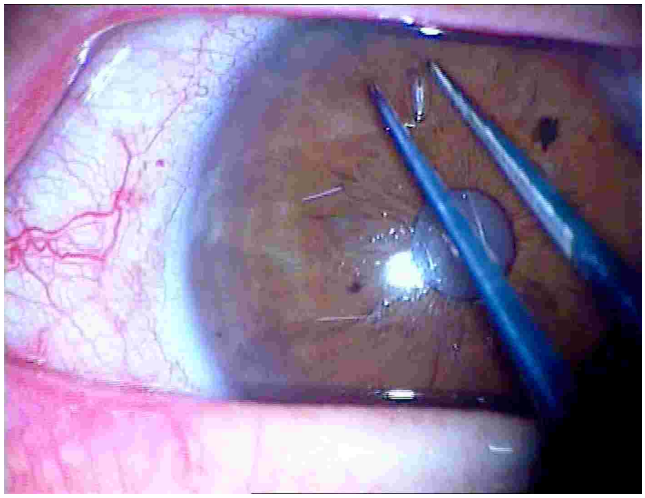


Figure 2. A black-headed, transparent, 1 - 2 mm in length larva upon cornea was taken out by the help of forceps.

Figure 3. The first term larva of oestrus ovis.

Discussion

In taxonomic classification ophthalmomyiasis flies are composed of three families; Oestridae, Calliphiride, Sarcophagidae [7]. Oestrus ovis fly which is the most frequent factor of human ophthalmomyiasis, after maturation it leaves its eggs to nasal mucosa of farm animals such as sheep, goat, cattle and horse. After larvae proceeding towards nasal cavity and frontal sinus and get matured, they drop into cocoon through nasal mucose (by sneezing). It completes its life cycle after coming out of its cacoon between three and six weeks. Human is a random interval in this cycle. The black image of papilla imitates a safe hole that myiasis fly can leave its larvae after ovulation. As a result of strike of myiasis fly to cornea, larvas fall into conjunctival fornix. Conjunctival sac as being wet, hot and dark area plays a role of ideal

Figure 4. The hooks which are located on the head of the first term larva, help to hold on conjunctiva tightly.

organic culture media for hatching of larvae. In the first 24 hours, they become larva form of having oral hook. Fortunately oestrus ovis larvae are unable to secrete proteolytic enzymes, neither inflammation nor itself does not invade the inner parts of eye [8]. Because of the necessary food for larvae to develop is not found in human tear, larvae cannot continue life cycle and die as first stage larvae [9]. Since they hold conjunctiva with their hooks wherein their mouths and segments, death of larvae and again with the same reason irrigation of conjunctiva as the treatment is not efficient. In order to increase the possibility of determining these 1 mm of transparent moving larvae in biomicroscopic treatment, fornixes should be examined carefully under weak light as possible by inverting eyelids . In treatment the moving larvae should be taken out mechanically by using forceps after dropping of topical local anesthetic to slow down the movements of them. In order to prevent secondary bacterial infection and to get the inflammation under control, mild steroid drops are suggested in addition topical antibiotic drops [10]. Alternatively, it was reported in literature that yellow mercuric oxide ointment was used as the only treatment option by the North African farmers [11]. With application of ointment, air holes are closed and larvae die as a result of asphyxia. Pather et al. stated that oral mebendazole, in the absence of ivermectin, is an alternative effective systemic agent in medical therapy [12].

Also identification of species provides us to take a precaution to prevent the development of serious complications by penetrating the globe with ophthalmomyiasis interna [13]. Sharifipour et al. [14] reported a case of anterior ophthalmomyiasis interna with a single larva attached to the iris. While preparing the patient for surgical removal, larva migrated to posterior segments of the eye. This unpredictable behavior of the larva raised a great deal difficulty in treatment. After parasitological identification a stage 1 larva of Calliphoridae family was determined.

External ocular myiasis cases applied with complaints of hyperemia, lacrimation, pain, scratching and acute catarrhal conjunctivitis symptoms with mucoid secretion, as well as the sense of foreign body moving in the eye. In these patients the diagnosis can easily be confused with conjunctivitis, anamnesis is also important besides physical examination. This patient group who have contact with farm animals such as sheep and goat, had histories of ocular contact with foreign object in their detailed query. In our series, seven patients had a history of fly striking on eye and four had a history of a foreign object in the eye. However, in detailed anamnesis it was learned that there are slaughterhouses near all patients.

In literature Gholamhossein et al. reported an experience of 18 external ophthalmomyiasis cases. They highlighted that besides mimicking symptoms of allergic conjunctivitis, peripheral corneal infiltration may be seen in this infestation. Even though on initial examination decreased visual acuity was detected in cases accompanying corneal findings, authors did not need to change the therapeutic approach [15].

In literature, reported cases frequently occur in spring and summer times [16]. Our patients applied to clinic in summer and autumn months. This difference was interpreted as parasites continued their life cycle due to high temperature. For protection, the groups that are working with farm animals should be given training properly to prevent blind medication usage. At the same time, it is important to keep slaughterhouses clean as well as to keep them isolated from communal life areas. At any complaining condition, they should be informed to apply to ophthalmologist without delay.

In conclusion, ophthalmologists should think of ophthalmomyiasis in differential diagnosis with more careful anamnesis and detailed biomicroscopic examination even in conjunctivitis cases.

Consent

Written informed consents were obtained from the patients for publication of this case reports and any accompanying images.

Conflict of Interests

None of the authors has conflict of interest with submission. No financial support was received for this submission.

References

[1] Wong D. External Ophthalmomyiasis caused by the sheep bot Oestrus ovis L. Br J Ophthalmol.1982;66(12):786-7.
[2] Grammer J, Erb C, Kamin G, Wild M, Riedinger C, Kosmidis P, et al. Ophthalmomyiasis externa due to the sheep botfly Oestrus ovis (Diptera: Oestridae) in southwest Germany. Ger J Ophthalmol. 1995;4(3):188-95.
[3] Narayan S, Jayaprakash K. Incidence of ocular myiasis due to infection with the larva of Oestrus ovis (Oestridae Diptera). Indian J Ophthalmol. 1991;39(4):176-8.
[4] Pandey A, Madan M, Asthana AK, Das A, Kumar S, Jain K. External ophthalmomyiasis caused by Oestrus ovis: A rare case report from India. Korean J Parasitol. 2009;47(1):57-9.
[5] Chandra DB, Agrawal TN. Ocular myiasis caused by oestrus ovis. (A case report). Indian J Ophthalmol. 1981;29(3):199-200.
[6] Clavijo E, Requena JM, García F, del Valle J, García JM. Conjunctival ophthalmomyiasis caused by Oestrus ovis. Enferm Infecc Microbiol Clin. 1993;11(6):321-3.
[7] Ranjan R, Jain A. External ophthamomyiasis. Oman J Ophthalmol. 2014;7(3):160-1.
[8] Odat TA, Gandhi JS, Ziahosseini K. A case of ophthalmomyiasis externa from Jordan in the Middle East. Br J Ophthalmol. 2007;91 Video report.
[9] Carrillo I, Zarratea L, Suárez MJ, Izquierdo C, Garde A, Bengoa A. External ophthalmomyiasis: a case series. Int Ophthalmol. 2013;33(2):167-9.
[10] Joshi K, Sindal DK, Pawar V, Pawar S. Uniocular external ophthalmomyiasis due to Oestrus ovis: two cases on two consecutive days. Int J Recent Trends in Sci and Tech. 2013;7(3):89-90.
[11] Pampiglione S, Gianetto S, Virga A. Persistance of human myiasis by Oestrus ovis L. (Diptera: Oestridae) among shepherds of the Etnean area (Sicily) for over 150 years. Parassitologia. 1997;39(4):415-8.
[12] Pather S, Botha LM, Hale MJ, Jena-Stuart S. Ophthalmomyiasis externa: case report of clinicopathological features. Int J Ophthomic Pathol. 2013 Feb 18; 2(2). doi: 10.4172/2324-8599.1000106.
[13] Glasgow BJ, Maggiano JM. Cuterebra ophthalmomyiasis. Am J Ophthalmol. 1995;119(4):512-4.
[14] Sharifipour F, Feghhi M. Anterior ophthalmomyiasis interna: an ophthalmic emergency. Arch Ophthalmol. 2008;126(10):1466-7.
[15] Gholamhossein Y, Behrouz H. External ophthalmomyiasis presenting to an emergency department: corneal findings as a sign of Oestrus ovis. Korean J Ophthalmol. 2013;27(5):341-4.
[16] Siqauke E, Beebe WE, Gander RM, Cavuoti D, Southern PM. Case report: ophthalmomyiasis in Dallas County, Texas. Am J Trop Med Hyg. 2003;68(1):46-7.

The European Research Journal

Original Article

http://www.eurj.org

e-ISSN: 2149-3189

DOI: 10.18621/eurj.2015.1.2.55

An analysis of publications related to emergency medicine originating from Turkey

Mahmut Firat Kaynak[1], Zulfi Engindeniz[1], Sibel Gafurogullari[1], Esra Askin Bas[1], Mumin Karaali[1], Nizameddin Koca[2], Ismail Altintop[3]

[1] *Department of Emergency Medicine, Sevket Yilmaz Training and Research Hospital, Bursa, Turkey*
[2] *Department of Internal Medicine, Cekirge State Hospital, Bursa, Turkey*
[3] *Department of Emergency Medicine, Kayseri Training and Research Hospital, Kayseri, Turkey*

ABSTRACT

Objective. Aim of this study was to examine the publications of the Turkish emergency medicine clinics in the journals indexed in Index Medicus between January 1st, 1994 and December 31st, 2013 thus, to demonstrate the level of scientific productivity within the 2 decades after the establishment of emergency medicine as a specialty. *Method.* A pubmed search was performed using "emergency medicine" and "Turkey" entries in the affiliation part and covering the dates January 1 1994 to December 31 2013. Further search was performed in the ISI web of knowledge website to find out whether the journals were indexed in SCI or SCI-Expanded lists. Number of citations were found by using Google Scholar. Publications with a first name from clinics other than emergency medicine was not included in the study. *Results.* 719 articles were published in 204 journals within the 20 years. 86% of the articles were originated from university hospitals. 10.6% from research and education hospitals and 3.5% from second level hospitals (state and private). 38.1% of the articles were prospective clinical studies, 16.8% were retrospective clinical studies, 9.2% were experimental animal studies and 7% were review articles. Studies were commonly published in Turkish Journal of Trauma and Emergency Surgery (n=85, 11.8%), American Journal of Emergency Medicine (n=85, 11.8%), and Emergency Medicine Journal (n=85, 11.8%). Mean number of articles published annually was 35.9 articles/year. Akdeniz University published 7.5% of the articles, Dokuz Eylul University published 7.2% and Karadeniz Technical University 4.9% of the articles. *Conclusion.* Number of publications in the field emergency medicine from our country are increasing with time. Studies analyzing the quality of the publications will be guiding for the researchers.

Eur Res J 2015;1(2):55-60

Keywords: Emergency medicine in Turkey, scientific publications, references

Address for correspondence:
Mahmut Firat Kaynak, MD, Sevket Yilmaz Training and Research Hospital, Bursa, Turkey
E-mail: md_kaynak@yahoo.com
Received: 28.04.2015; Accepted: 09.06.2015: Published Online: 04.07.2015

Introduction

Emergency medicine was officially accepted as a medical specialty in Turkey in 1993 [1]. Emergency medicine training programs were first established at university hospitals at 1994 and then established at research and education hospitals at 2006. By the end of 2013 there are a total number of 80 emergency medicine training programs, 51 at university hospitals and 29 at research and education hospitals, present in our country.

Quantity and quality of the publications published in the journals indexed in international indices may be accepted as an indicator of academic progress. Studies were published analyzing emergency medicine publications and productivity in the international literature [2,3]. These studies were guiding the researchers for the future by analyzing the quantity and quality of the past studies. There are studies from our country analyzing scientific production of Turkish emergency medicine at different time intervals [1,4,5]. Our aim in this study was to demonstrate the level of scientific productivity reached by Turkish emergency medicine at the end of its second decade.

Method

After the approval of instutional ethical committee and review board, a PubMed search was performed through http://www.ncbi.nlm.nih.gov/pubmed/ internet site to identify the studies produced by Turkish emergency medicine clinics and published in journals indexed in index medicus between the dates of January 1st, 1994 and December 31st, 2013. Search was narrowed by entering "emergency medicine" and "Turkey" specifications in the affiliation tab of the PubMed website. For the manuscripts which are accepted for publication and early released online, electronic release date was considered as publication date. A further search was performed to identify whether the journals listed in the Science Citation Index Expanded (SCI-E) in Thomson Reuters' 2013 list [6]. A final search was done in Google scholar to find out the number of citations each publication received.

Exclusion Criteria: Publications with a primary author from clinics other than emergency medicine were excluded from the study.

Evaluation: Publications were classified according to the type and subject of the article, name of the journal, publication date, number of citations and number of authors. Another comparison based on inclusion of the journal in the 2013 SCI-E list was also made. Analysis and descriptive statistics of data was done with "SPSS for Windows 22.0" statistical package.

Table 1. The distribution of the number of citations of articles

Number of citation	Number	Ratio %
0	215	29,9
1-5	284	39,5
6-10	112	15,6
11-15	40	5,6
16-20	23	3,2
> 21	45	6,3
Total	719	100,0

Results

By the end of the year 2013, a total number of 719 publications were found in the journals indexed in Index Medicus that includes both of the "emergency medicine" and "Turkey" keywords. Distribution of number of publications per year has shown that there was a steady increase in number of publications per year and number of publications within the year 2013 were 129 publications corresponding 17.9% of the total. There were significant increases in the number of publications in comparison to previous years' number in the years 2002 and 2013 (Figure 1). Mean number of publications per year since the foundation of emergency medicine specialty was found to be 35.9 publications/year.

Classification of the 719 articles according to article type revealed that 38.1% (n=274) were prospective clinical studies, 35.2% (n=253) were case reports, 16.8% (n=121) were retrospective clinical studies, 9.1% (n=66) were experimental animal studies and 0.6% (n=5) were review articles (Figure 2).

The publications were classified according to main subject of the article and the 5 most common subjects of research were toxicology 22.3% (n=160), trauma 20.7% (n=148), cardiology 12.2% (n=88), general surgery 7.9% (n=57) and neurology 4.6% (n=33). Distribution of the journals that the articles were published was shown in figure 3. The articles were published in 204 different journals. The most common journals preferred for publication were Turkish Journal of Trauma and Emergency Surgery 11.8% (n=85), American Journal of Emergency Medicine 11.8% (n=85), and Emergency Medical Journal %11.8 (n=85).

Of the 20 years of Turkish emergency medicine literature contribution, Akdeniz University got the biggest share with 7.5% (n=54), Dokuz Eylul University published 7.2% (n=52) Karadeniz Technical University published 4.9% (n=35) of the manuscripts (Figure 3). 86% (n=618) of the publications were originated from university hospitals, 10.6% (n=76) from research and education hospitals and 3.5% (n=25) from second level hospitals (state and public hospitals). Distribution of manuscripts according to the city of origin revealed that 15.6% (n=112) of manuscripts were from Ankara, 13.8% (n=119) from Ýzmir and 7.6% (n=55) from Antalya.

Articles were further classified according to the journals' indexing status in the SCI; 83.3% (n=599) of the articles were published in the journals indexed in SCI and the remaining
16.7% (n=120) were published in the journals that were not indexed in SCI (Figure 4).

Mean number of authors per article was 5.4 and it was ranging between 1 and 17. Mean number of citations per article was 5.6 and 39.5% of the articles were cited 1 - 5 times and 6.3% of the articles were cited more than 21 times (Table 1).

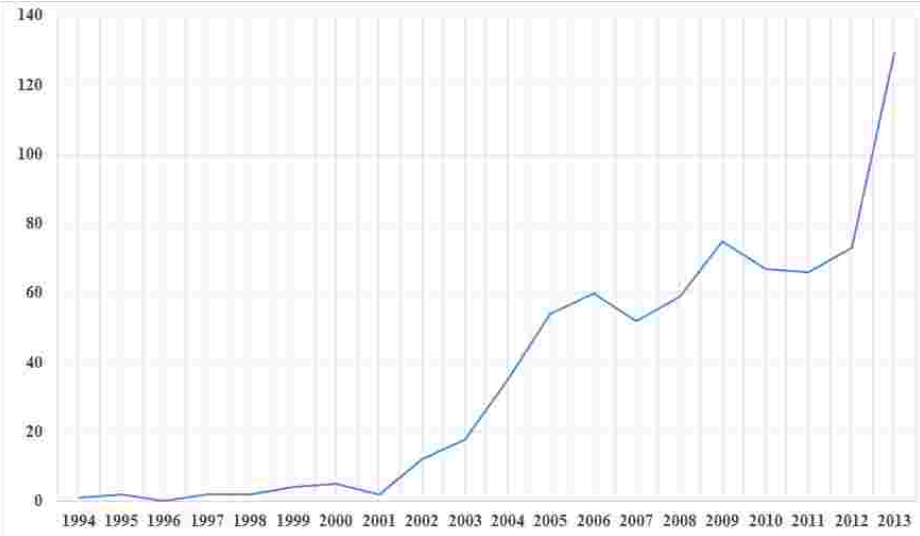


Figure 1. The distribution of articles by year

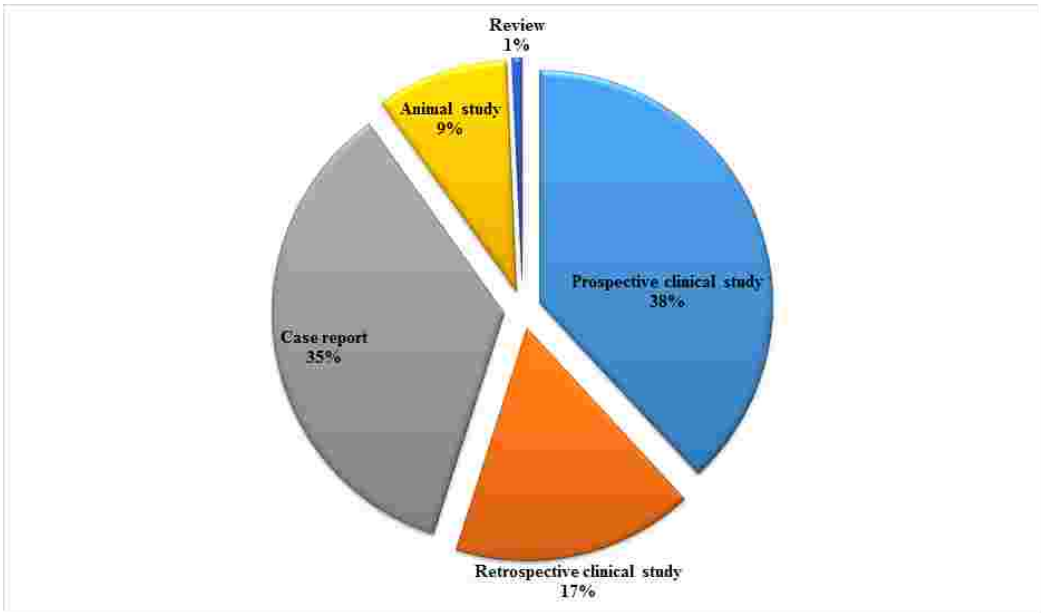


Figure 2. Distribution by the article type

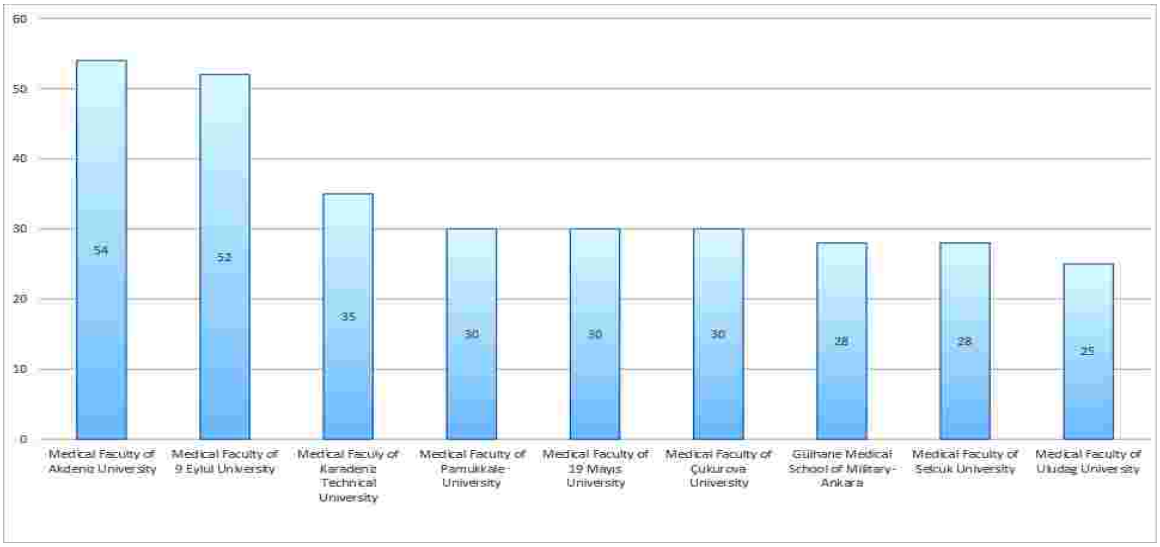


Figure 3. Article distribution according to the institution

Discussion

Turkey holds the 45th place in the medical scientific literature ranking [7]. Publications originating from Turkey in the areas of pediatrics, medical ethics, urology, neuro-imaging and ear-nose-throat are quantitatively placed in the top ten countries. Since 2001 articles published in the journals indexed in SCI and SCI-E were being used as a criteria for academic advancement in our country. After that, number of the articles published in the journals indexed in SCI and SCI-E increased significantly.

By the end of the second decade of the emergency medicine as a specialty in Turkey, its contribution to international literature is progressively increasing. In the field of emergency medicine, overall mean number of publications from Turkey per year was 35.9 publications/year and for the last 10 years it increased to 63.5 publications/year. This could be accepted as an indication of continuing increase in scientific productivity. Furthermore, just the number

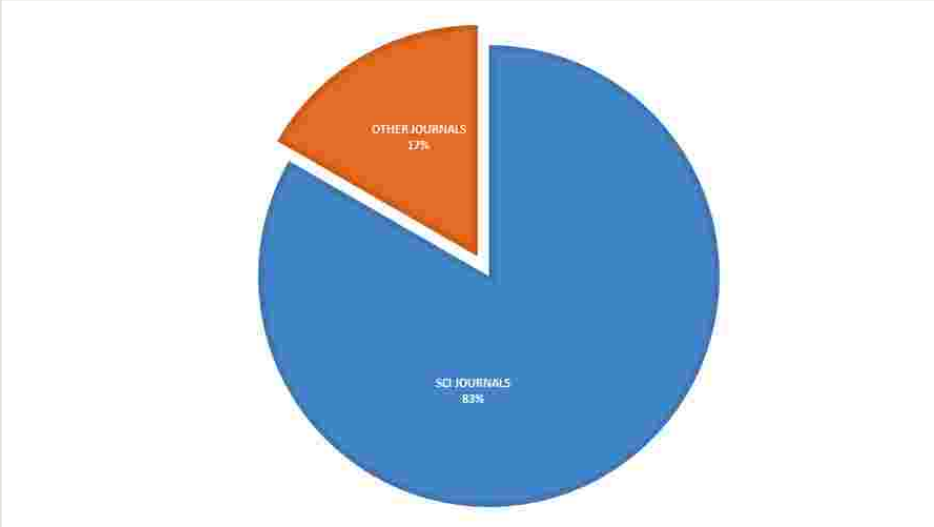


Figure 4. The distribution according to published journals

of articles published in 2013 constitutes the 17.9% of the total number, supporting the increasing trend in scientific productivity. A 2011 study by Cinar et al draws attention to a similar increase stating that 77% of the publications were from the last five years (2006 - 2011) [1]. Yanturali et al evaluated the first decade of emergency medicine in a 2004 study and found that the 76% of the publications were from the last three years (2000-2003) [4]. These results are similar to our results and supporting an increasing trend in terms of number of publications.

Total number of worldwide publications in emergency medicine field between 1996 - 2005 years was reported to be 14605. United States of America published 8550 (58.54%) of this. 1222 (8.37%) of publications originated from United Kingdom and 663 (4.54%) from Japan [8]. Turkey's share of emergency medicine literature could not yet reach the level it ought to be. Previous studies' prediction that our contribution to emergency medicine literature will increase in the forthcoming years have been come true and it seems that increase is continuing.

A recently published report by Web of Science reported that although relative impact factor (IF) of Turkey was rising it is still only half of the world average [9]. Most commonly used parameters for scientific research quantity and quality were number of publications in SCI and IF, respectively. During the first decade of emergency medicine in Turkey, 48.8% of the articles were published in journals indexed in SCI [10]. Furthermore, Ersel et al studied first 15 years of Turkish emergency medicine and reported that 88.4% of the articles were published in SCI journals [4]. In our study, we found that, within the 20 years, 83% of the articles were published in SCI journals. This data supports that Turkey's contribution to emergency medicine literature increasing not only quantitatively but also qualitatively. Furthermore, another quality indicator evaluated in our study was number of citations and mean number of citations per article was 5.6 at the time of our study. As the number of publications raised at the last years of the study period it may be speculated that the number of citations will increase in the years ahead.

Number of citations may vary according to journal and type of the article. Distribution of the articles among journals revealed that publications were concentrated on certain journals; Turkish Journal of Trauma and Emergency Surgery, American Journal of Emergency Medicine, and Emergency Medical Journal [1,4,10]. On the other hand, number of publications in the emergency medicine journals with high IF value still remains low. A 2009 article reported that Turkey's ranking in terms of number of publications from emergency medicine clinics was 16, however, in terms of IF, Turkeys ranking declined to 42 among 45 countries [7]. This problem of publication quality was not specific to emergency medicine. It is a common problem among all scientific fields and it can mainly be attributable to scarcity of the resources devoted for scientific research.

We found that 54.9% of the articles were original research and 35.2% were case reports. Previous studies have reported similar proportions [1,4,10]. Animal experiments constitutes 9.1% of the articles in our study. A 2013 study by Cinar et al reported animal experiment rate as 7% [1]. Another recent study examined the publications of emergency medicine academicians' in the area of trauma and reported animal experiment rate as 11% [5]. Our study reported similar rates and rising trend in ratio of animal experiments is hopeful for the future quality of publications.

Yanturali et al. [10] reported that the most common areas of research were trauma (34.5%), toxicology (21.4%) and cardiology (9.5%). Another study reported that the main areas of research were toxicology and environmental emergencies (32.9%), followed by trauma (15.9%) and pharmacology and biological markers (11.9%) [4]. Similarly, we found that the main areas of research were toxicology, trauma and cardiology.

Ranking of emergency medicine clinics in terms number of publications revealed that Akdeniz University was the first with 7.5%, 9 Eylul University was second with 7.2% and Karadeniz Technical University was third with 4.9% of the total publications. These results may be explained as these clinics are the oldest clinics in Turkey with well-established organization and sufficient academic staff.

Institution based distribution of publications shown that majority of the articles (86%) are from university hospitals. This is mainly due to that university hospitals were the single academic source in field of emergency medicine until 2006 in which the first residency programs were started at research and education hospitals. Within the 7 years after that, research and education hospitals produced 10.6% of the articles. A further 3.5% was from second level hospitals.

Furthermore, distribution of the publications according to cities revealed that of the articles were from Izmir and Ankara. 2008 TUBITAK report have shown that 35% of the publications from turkey were from Ankara followed by Istanbul with 22% and Izmir with 7% [11]. This is an indicator of uneven distribution of academic resources across our country. Future corrective policies should be designed to improve this heterogenic distribution. Only 'PubMed' database was used for our study and publications that were not indexed in PubMed were out of evaluation, this is the main limitation of our study.

In conclusion, Turkey's contribution to emergency medicine literature is increasing quantitatively. To increase quality publication certain measures should be taken such as targeting journals indexed in SCI with higher IF values, planning high quality original research, animal and laboratory studies could be effective. Education, support and encouragement of the residents for scientific research will further increase quantity and quality of publications. Studies like this may enlighten us about our level of academic advancement and may guide us for the future.

References

[1] Cinar O, Dokur M, Tezel O, Arziman I, Acar YA. Contribution of Turkish Emergency Medicine to the international literature: evaluation of 15 years, Ulus Travma Acil Cerrahi Derg. 2011;17 (3):248-252

[2] Orer HS. Turkiye'nin Bilimsel Yayin Performansi, Ankem Derg. 2011;25(Ek 2):134-138

[3] Rosenzweig JS, Van Deusen SK, Okpara O, Datillo PA, Briggs WM, Birkhahn RH. Authorship, collaboration, and predictors of extramural funding in the emergency medicine literature. Am J Emerg Med. 2008;26:5-9.

[4] Ersel M, Yuruktumen A, Ozsarac M, Kiyan S, Aksay E. Turkiye'deki Acil Tip Anabilim Dallari'nin uluslararasi yayin uretimi: 15. Yil degerlendirmesi. Turk J Emerg Med. 2010;10:55-60.

[5] Dogan NO. Evaluation of international scientific publications and citations on trauma authored by professors and associate professors of emergency medicine in Turkey, Turkiye Acil Tip Dergisi. 2013;13(2):64-68

[6] Levsky ME, Rosin A, Coon TP, EnslowWL, Miller MA. A Descriptive Analysis of Authorship Within Medical Journals. 1995-2005. South Med J. 2007;100:371-375

[7] Demirel IH, Sarac C, Akilli E, Buyukcinar O, Yetgin S, Gurses EA. Turkiye Universitelerinin Bilimsel Yayin Performansi II 1981-2007, TUBITAK-ULAKBIM, Ankara (2009).

[8] Wilson MP, Itagaki MW. Characteristis and trends of published emergency medicine research. Acad Emerg Med. 2007;14:635-40.

[9] Thomson Reuters, Master JournalList. http://ip-science.Thomsonreuters.com/mjl/ [Access date: 26 March 2013].

[10] Yanturali S, Aksay E, Cevik AA. International Publications from Turkish Emergency Medicine Departments: analysis of first ten years. Turk J Emerg Med 2004;4:170-3

[11] Demirel IH, Sarac C, Akilli E, Büyükcinar O, Yetgin S Gürses EA. Turkiye'nin Bilimsel Yayin Haritasi, TUBITAK-ULAKBIM, Ankara (2007).

The European Research Journal

Original Article

http://www.eurj.org

e-ISSN: 2149-3189

DOI: 10.18621/eurj.2015.1.2.61

COPD cases detected by spirometry on world COPD day event in Bursa

Ozlem Sengoren Dikis[1], Seyhan Us Dülger[1], Mehmet Karadag[2], Hakan Demirci[3]

[1] *Department of Pulmonary Medicine, Sevket Yilmaz Training and Research Hospital, Bursa, Turkey*

[2] *Department of Pulmonary Medicine, Uludag University Medicine School, Bursa, Turkey*

[3] *Department of Family Medicine, Sevket Yilmaz Training and Research Hospital, Bursa, Turkey*

ABSTRACT

Objective. We organized a 'World Chronic Obstructive Pulmonary Disease (COPD) Day' event to raise awareness in society of the disease and we evaluated the results of the activity. *Method.* Volunteers (n = 79) consisted of persons shopping in a famous shopping center in Bursa. A short past history of COPD from the volunteers was requested. Pulmonary Function Tests were performed by spirometry and a Fagerstrom test for dependence was filled out by the volunteers. In cases where airway obstruction was detected, physicians performed a reversibility test. *Result.* Of the 79 volunteers who participated in the study, 39 cases were detected to have airway obstruction. Of those, 15 patients had been previously diagnosed with COPD; on the other hand, 24 patients were diagnosed with COPD for the first time. There was no newly diagnosed COPD patient among the nonsmokers. The prevalence of COPD was 49.36% and the awareness rate was only 38.46%. *Conclusion.* In the present study, we determined that the COPD prevalence is 49.36%, which is quite high when compared with the previous studies published in Turkey. In such a cross sectional study, volunteers would probably be composed of persons who would have the disease at higher rates. We observed that there was a low awareness of COPD among smokers. Events that are aiming to increase the social awareness to such a particularly prevalent disease should be encouraged.

Eur Res J 2015;1(2):61-65

Keywords: COPD, awareness, smoking, reversibility

Introduction

Chronic Obstructive Pulmonary Disease (COPD) is a frequent public health problem. Besides its frequency, its negative effect on quality of life and its high economic cost increase its importance. This disease ranks among the top in the DALY range (Disability Adjusted Life Years), which is described as the total of early deaths and years lost due to disability.

COPD is declared to be the 3rd cause of death all over the world [1]. Similarly, in our country respiratory

Address for correspondence:
Ozlem Sengoren Dikis, MD, Sevket Yilmaz Training and Research Hospital, Yildirim/Bursa, Turkey
Email: ozlemsengoren@hotmail.com
Received: 03.01.2015; Accepted: 30.03.2015: Published Online: 04.07.2015

system diseases are reported to be the 3rdranked cause of death [2]. Despite the significant decrease in other prominent causes of death in recent years, chronic diseases are very much on the map now and are responsible for many deaths [3].

While COPD frequency is increasing all over the world with the advanced average age, it is also decreasing due to reductions in air pollution and the increasing fight against tobacco. In a study made in our country in 2004 (BOLD-Adana), the prevalence of COPD in adults over age 40 was 19.1% [4].

Every year, the 3rd Wednesday in November is celebrated as World COPD day and the slogan of the 2013 World COPD day was 'Not too late'. In this context, in order to make the public more conscious of COPD, we made spirometric measurements in a shopping mall in Bursa to evaluate the COPD situation and we informed the people about COPD. Our aim in this study was also to evaluate the data we obtained.

Materials and Methods

On World COPD day 2013, volunteers between the ages of 18 and 65 among the customers of a shopping mall in Bursa city center were involved in our study. Weight and height of the individuals were properly measured. Their Body Mass Index (BMI) values were calculated by a weight (kg) / height (m^2) formula. COPD history, shortness of breath, cough and expectoration complaints and smoking status of the volunteers were requested. The smoking group was given a Pulmonary Function Test (PFT) and a Fagerstrom Addiction Test. Non-smoking volunteers were only given the Pulmonary Function Test. Patients whose fixed ratio measurement was FEV1/FVC <0.7 were given the reversibility test. For the reversibility test, spirometric measurements were made before and 20 minutes after inhalation of 400 µg salbutamol with a metered dose inhaler. In the evaluation of bronchodilator response, reversibility was calculated based on the expected FEV1 percentage of 12% and the absolute change between both FEV1 measurements as over 200 ml. Besides the PFT evaluation of the patients in terms of Asthma and COPD Overlap Syndrome (ACOS) diagnosis, symptoms such as shortness of breath and cough, allergy histories and asthma histories determined by a doctor in their childhood and young adulthood period were searched. There was no patient in the event group that may have been ACOS. The ones whose PFT results, symptoms and background data were in accordance with the specified criteria were accepted as COPD.

Ethical approval for the study was obtained from the Sevket Yilmaz Training and Research Hospital

Ethics Committee. Statistical analysis was made with the SPSS (13.0) package program. Arithmetic means (± standard deviation) and percentages were calculated.

Results

Seventy-nine volunteers regardless of sex were allowed to participate in our study. While 43 (54.4%) were active smokers, 36 (45.6%) were non-smokers.21 of 43 active smokers (48.8%) were female and 22 (51.2%) were male; their average age was 37.34±11.2 (Table1).

The average Body Mass Index was 26.06±5.02 kg/m2; the Fagerstrom Addiction Value average was 4.48±2.05. In the smoking group, 19 (44.2%) patients had no complaints or symptoms and their spirometer values were normal (Figure 1).

Post-bronchodilator FEV1/FVC ratio in twenty-four patients (55.8%) was below 70 and FEV1 (%) was 67.04 ± 17.99 and FEV1/FVC was 62.89 ± 6.08 (Figure 2). These patients also had complaints such as shortness of breath, cough and expectoration. Only 6 of the patients were previously aware of their illness (20%).

Twenty-four of 36 non-smoking patients (66.7%) were female and 12 were (33.3%) male. The average age was 47.86±15; the average Body Mass Index was 26.67±4.39 kg/m2. In this group, 9 patients had a history of COPD. There was no new COPD diagnosis in the non-smoking group. While 15 patients out of 79 were aware of their COPD disease, 14 new cases were detected. These 24 patients were given Medical Research Council (MRC) staging. 13 patients (54.2%) were assessed as stage 1; 9 patients (37.5%) as stage 2 and 2 patients (8.3%) as stage 3. According to COPD classification, 9 patients (37.6%) were reported as group A; 8 patients (33.3%) as group B; 5 patients (20.8%) as group C; and 2 patients (8.3%) as group D (Figure 3).

Awareness of the disease was calculated as 38.46%. COPD prevalence in the study group was 49.36%.

Table 1. Smoking habits by gender

Feature	Male	Female	Total
Smokers	*22 (54.4%)*	*24 (66.7%)*	*46*
Nonsmokers	*21 (45.6%)*	*12 (33.3%)*	*33*
Total	*43*	*36*	*79*

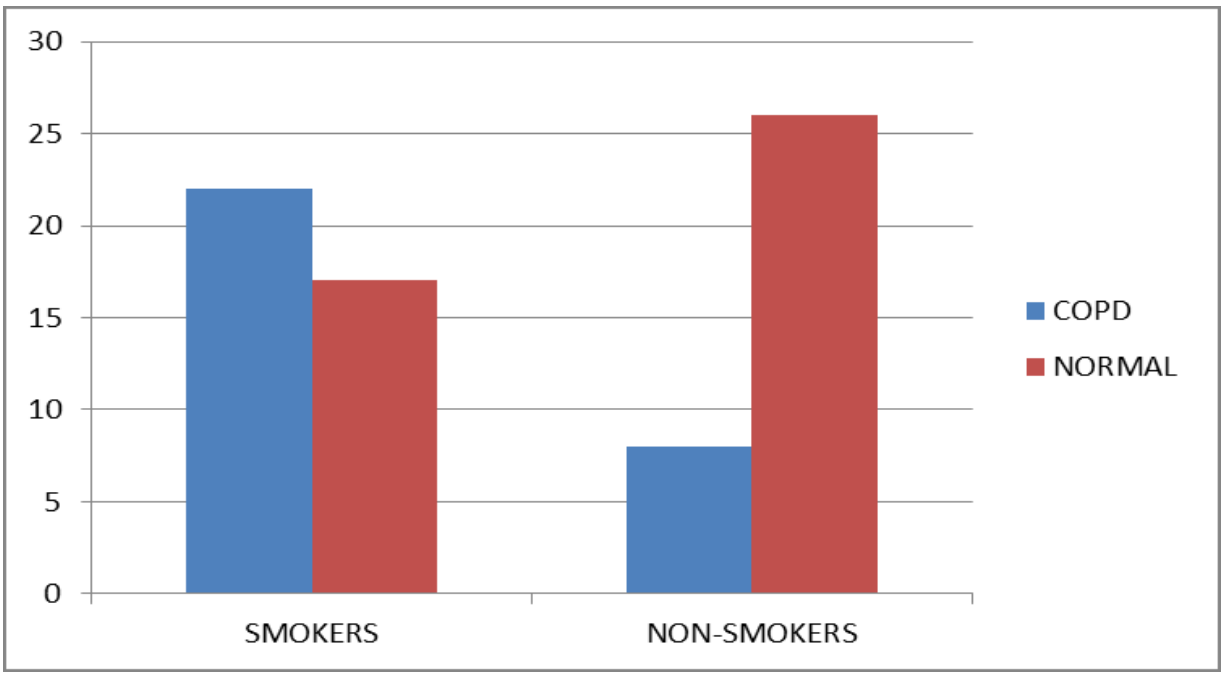


Figure 1. Chronic obstructive pulmonary disease distribution among smokers and non-smokers

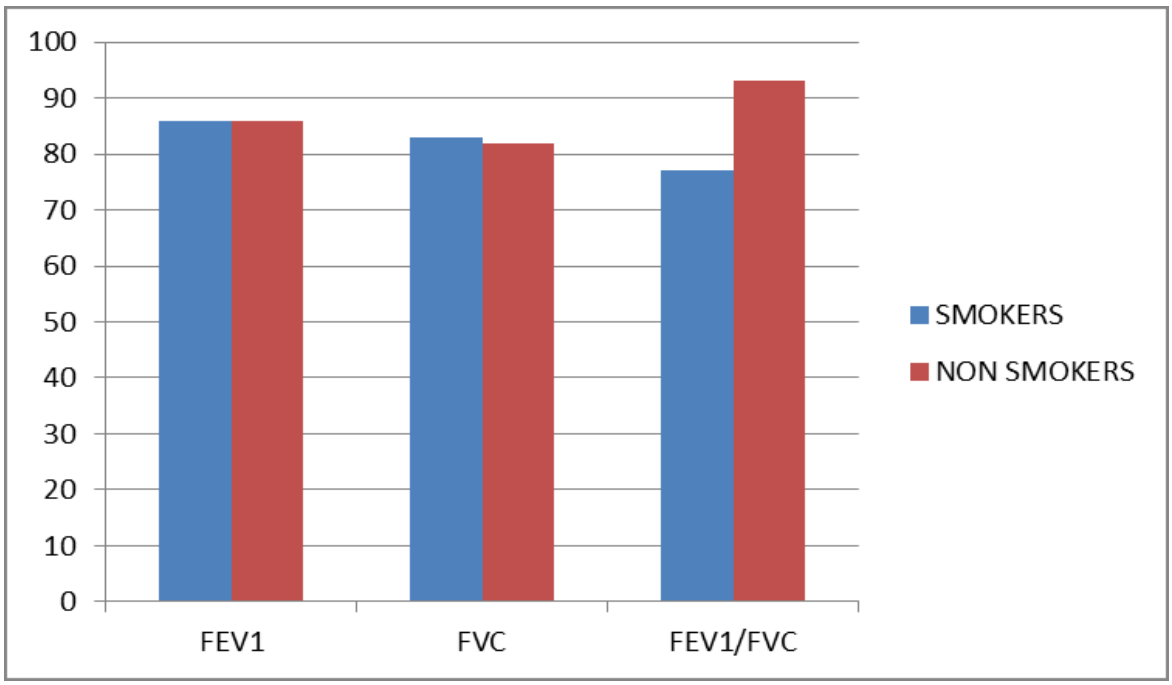


Figure 2. Pulmonary function test results of smokers and non-smokers

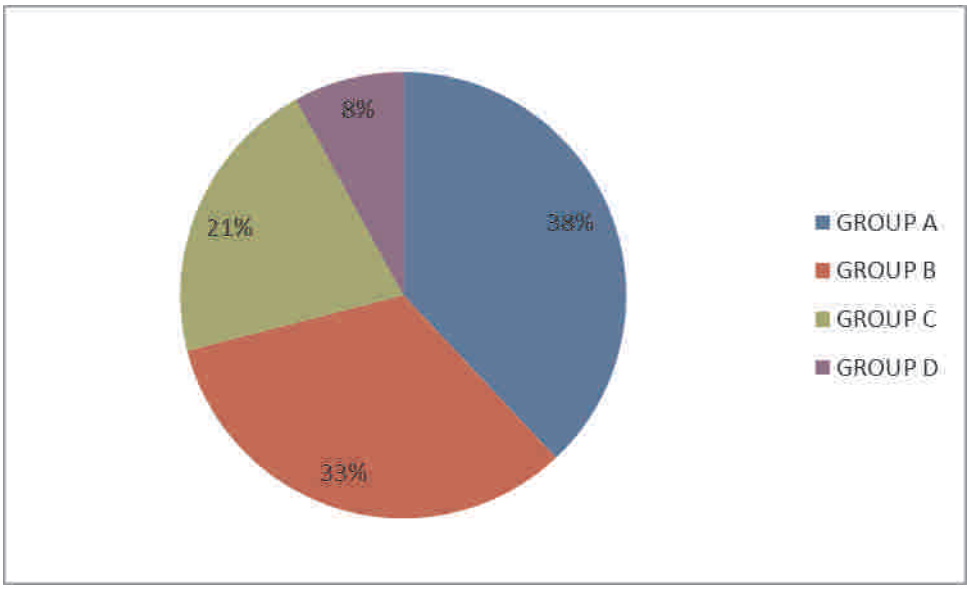


Figure 3: Chronic Obstructive Pulmonary Disease severity

Discussion

In our country, there are significant efforts against tobacco as a health policy. Lately, there has been an effort to prevent an increase in smoking by the implementation of the 100% smoke-free project. The fact that fuel used for cooking at home now keeps people from biomass exposure, use of natural gas primarily for heating, and more professional exhaust inspections are all positive efforts to reduce air pollution. COPD frequency varies in the studies made in our country. While the prevalence in the BOLD study was 19.1%, it was 11.5%(5.9% female and 15.1% male) in a study made by Deveci et al. in Elazig [7]. In all these studies, COPD description and staging were made according to the guidelines of the Global Initiative for Chronic Obstructive Lung Disease (GOLD) [8]. The COPD frequency among volunteers was 49.3% in our study. This value, which is higher than the ratio found in previous studies in our country, may result from an inaccurate randomization. In such cases, those who think that they have a problem may have preferred to participate in the study.

It is suggested that neither the society nor health employees have sufficient knowledge about COPD. It is also known that only 10-30% of COPD patients are aware of their illness. In this context, it is important in terms of public health to create an awareness of COPD in society and to emphasize that COPD is a preventable and treatable disease. In this study, we tried to raise consciousness among the public and to discuss the values obtained in the framework of such an event.

Fourty-three out of 79 participants in this study (54.4%) were still active smokers. According to the "Global Adult Tobacco Research" made by the Turkey Statistics Institute in 2010, 31.2% of adults over age 15 in our country (47.9% in males, 15.2% in females)still use tobacco [9]. 24 (55.8%) patients who smoked and had COPD disease were asked about their COPD history, but only 6 of them (25%) were aware of their disease (25%). The smoking ratio in adults in our study was higher than in the literature [9]. The reason for this may be the fact that especially active smokers may have participated in our study because they wondered about their state of health. However, 9 patients (25.7%) in the non-smoker group had COPD disease.

Conclusion

According to the results we obtained, COPD is a frequent disease in our country and smokers are largely not aware of their status. We believe that events such as this one may be beneficial for reaching patients and moreover may play an active role as awareness-raising efforts in society.

References

[1] Lozano R, Naghavi M, Foreman K, Lim S, Shibuya K, Aboyans V, Abraham J, Adair T, Aggarwal R, Ahn SY, et al. Global and regional mortality from 235 causes of death for 20 age groups in 1990 and 2010: a systematic analysis for the Global Burden of Disease Study 2010. Lancet. 2012;380(9859):2095-128.
[2] Olum nedeni istatistikleri, 2010, 2011, 2012. TUIK Haber Bulteni 2013; Sayi: 15847.
[3] Paczek L, Nowak M. The paradox of the 21 st century -is there really an epidemic of most common killers? Int Gen Med. 2011;4:799-802.
[4] Kocabas A, Hancioglu A, Turkyilmaz S, et al. Prevalence of COPD in Adana, Turkey (BOLD-Turkey Study). Proceedings of the American Thoracic Society 2006; 3 (Abstract Issue): A543.
[5] Turkiye Kronik Hastaliklar ve Risk Faktorleri Sikligi Calismasi. Saglik Bakanligi Yayin No: 909, Ankara, 2013.
[6] Buist AS, McBurnia MA, Vollmer WM, et al. BOLD Collaborative Research Group. International variation in the prevalence of COPD (The BOLD Study): A population-based prevalence study. Lancet. 2007; 370:741-50.
[7] Deveci F, Deveci SE, Turkoglu S, Turgut T, Kirkil G, Rahman S, et al. The prevalence of chronic obstructive pulmonary disease in Elazig, Eastern Turkey. Eur J Intern Med. 2011;22:172-6.
[8] Global Strategy for the Diagnosis, Management, and Prevention of Chronic Obstructive Pulmonary Disease Revised 2011. Global Initiative for Chronic Obstructive Lung Disease (GOLD). http://www.goldcopd.org
[9] Turkish Statistical Institute Global Adult Tobacco Survey, 2010.

The European Research Journal

Case Report

http://www.eurj.org

e-ISSN: 2149-3189

DOI: 10.18621/eurj.2015.1.2.66

Amputation for upper extremity ischemia following shoulder dislocation: case report and a review of literature

Murat Songur[1], Ercan Sahin[1], Mahmut Kalem[2], Sinan Zehir[3],

[1] *Department of Orthopedics & Traumatology, Bulent Ecevit University, Faculty of Medicine, Zonguldak, Turkey*
[2] *Department of Orthopedics & Traumatology, Ankara University, Faculty of Medicine, Ankara, Turkey*
[3] *Department of Orthopedics & Traumatology, Hitit University, Faculty of Medicine, Corum, Turkey*

ABSTRACT

Injury of the axillary artery following glenohumeral dislocation is a very rare situation. The mechanisms for arterial injuries are lacerations, rupture, avulsion of main branches or intimal tears and pseudo aneurysm formations. In this report we present an upper extremity ischemia following shoulder dislocation resulting with loss of extremity. Our aim was to highlight the importance of the third part of axillary artery and consequences of underestimation of vascular pathologies following shoulder injuries.

Eur Res J 2015;1(2):66-70

Keywords: Axillary, artery, shoulder, dislocation, amputation

Introduction

Axillary arterial injuries following blunt shoulder trauma are rare but also well reported, of which might end up with catastrophic results, if not properly diagnosed and treated. Mechanisms of arterial injury are reported as intimal tears, artery lacerations or avulsions, penetrating trauma or tethering between fracture fragments. There are several published reports of axillary artery injury following shoulder dislocations and proximal humeral fractures [1-6].

In this report we present a misdiagnosis of an axillary arterial injury case following shoulder dislocation resulting with mid humeral amputation. Also we aim to highlight the importance of neurovascular monitorization in the treatment of shoulder injuries.

Case Presentation

A 45-year-old male was admitted to emergency department of another institution following a right anterior-inferior shoulder dislocation with tuberculum majus fracture during a motor vehicle accident. Closed reduction of glenohumeral joint was performed on emergency department under sedation and shoulder was immobilized in a Velpeau bandage. Two days after reduction patient was referred to our clinic with symptoms and signs of total paralysis of right upper extremity and ischemia. Fluoroscopic image shows a well reduced joint with minimally displaced fracture of greater tuberosity (Figure 1). Patient declared that, he was unable to use his extremity, right after initial trauma. He also stated that, there was no improvement of pain following reduction. Also, there was no

Address for correspondence:
Murat Songur, MD, Department of Orthopedics & Traumatology, Bulent Ecevit University, Faculty of Medicine, Zonguldak, Turkey
e-mail: msongur77@yahoo.com
Received: 20.11.2014; Accepted: 02.02.2015: Published Online:04.07.2015

prior history of shoulder pathology. Physical examination of the patient revealed absent radial and ulnar pulses, total paralysis below shoulder with marked limitation of passive motion, swelling and tightness of forearm and arm, with coldness and numbness of right upper extremity below elbow. There were no axillary mass or hematoma formation. Doppler study revealed absence of flow in both ulnar and radial artery. Digital Substraction Angiography (DSA) showed diminished flow at the level of tuberculum minus without signs of extravasation (Figure 2). Emergent vascular exploration was performed. Intraoperatively there was no sign of major bleeding or hematoma formation. It was observed that tuberculum majus had tackled and lifted anterior circumflex humeral artery upwards, resulting with obliteration and thrombosis of axillary artery. Macroscopically, distal musculature was noncontractile, looking pale and ischemic. Following release of axillary artery, proximal and distal embolectomy was attempted. After failure to achieve adequate blood flow after 5 consecutive embolectomy trials, resection of segment and end to end grafting was performed using saphenous graft. Multiple fasciotomies were made on arm and forearm as well. Despite all efforts viability of upper extremity could not be achieved and mid humeral amputation was made, 52 days after initial trauma (Figure 3).

Table 1. Previous reports of axillary artery injuries following shoulder trauma resulting with loss of extremity or patient.

Author	Year	History	Result
St John et al. [20]	1945	Spontaneous rupture of axillary artery with noncontact trauma, fatal hemorhage	Loss of patient
Lodding and Angeras. [21]	1988	Dislocation- Longitudinal tear of axillary artery	Loss of patient
Cook and Varley. [22]	1992	Fracture- Large hematoma- compression to trachea	Loss of patient
Modi et al. [23]	2008	Fracture- neurologic deficit- Hb. fall, muscle ischemia, sepsis. Repair- debridements- Amputation declined	Loss of patient
Mouzopoulos et al. [24]	2008	Fracture- Axillary artery rupture, compartment syndrome, rhabdomyolysis, acute renal failure	Loss of patient
McKenzie and Sinclair. [25]	1958	Dislocation- Late admission, laceration of axillary artery, thrombosis of both artery and veins, gangrene	Mid humeral amputation
Gibson. [26]	1962	Spontaneous rupture of axillary artery, failure of revascularisation, secondary bleeding	Shoulder disarticulation
McQuillan and Nolan. [27]	1968	Fracture-dislocation, laceration + distal thrombosis, recurrence of thrombosis	Mid humeral amputation
Smyth. [28]	1969	Fracture- Axillary artery thrombosis, failure of revascularisation	Loss of patient
Sathyarup et al. [29]	1988	Fracture: Axillary artery thrombosis	Forearm amputation
Ng et al. [30]	1990	Fracture dislocation, proximal laceration of axillary artery, crush syndrome with acute renal failure	Shoulder disarticulation
Syed and Williams. [31]	2002	Fracture- Late onset ischemia, pseudoaneurysm	Shoulder disarticulation

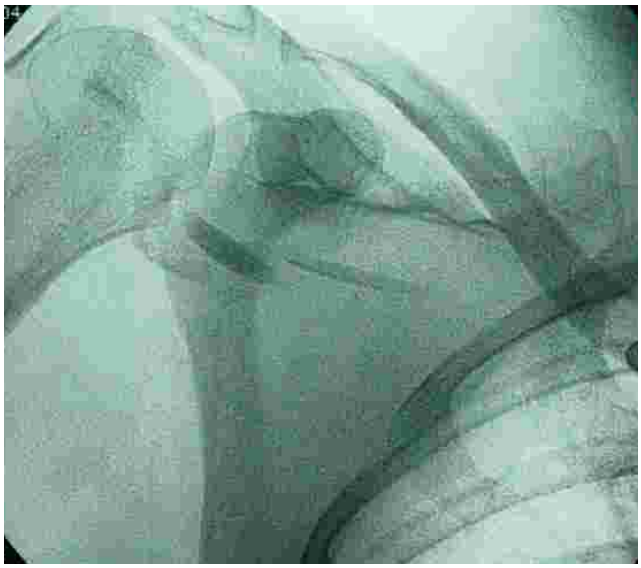


Figure 1. AP roentgenogram shows minimally displaced fracture of greater tuberosity.

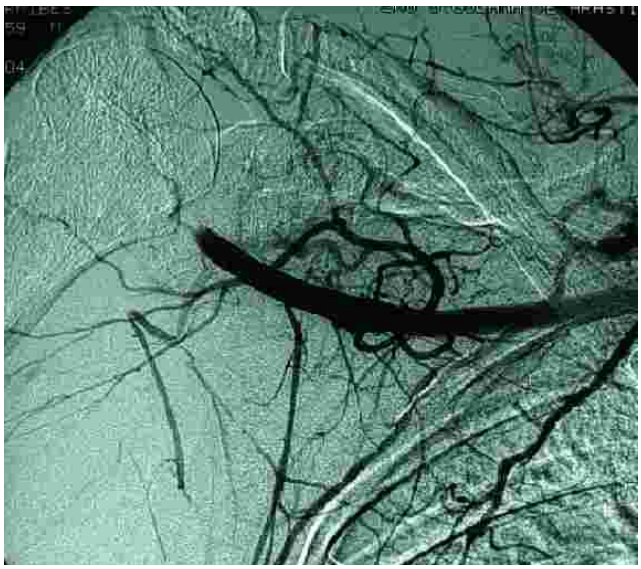


Figure 2. Diminished arteriel flow at the level of tuberculum minus at angiography (DSA) image.

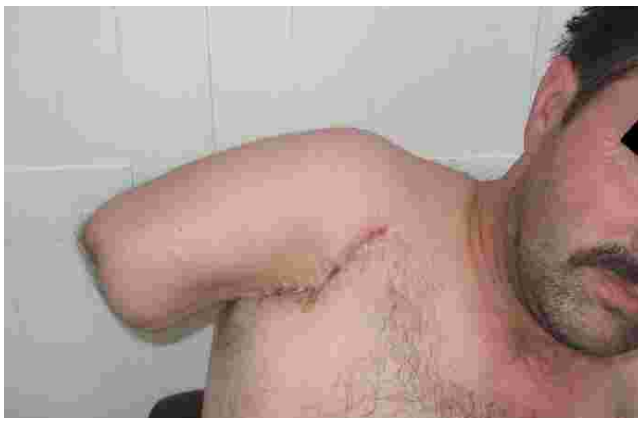


Figure 3. Mid humeral amputation of the patient.

Discussion

More than 200 cases of axillary artery injuries following blunt shoulder trauma have been reported [7]. Forty-nine cases of these reports were following shoulder dislocation. Although most of the cases had resulted with favorable results, there are reports of casualities and loss of extremity.

Axillary artery is anatomically divided into three parts. First portion lies proximal to upper edge of pectoralis minor muscle whereas second part runs deep to the pectoralis minor muscle. Third part is the distal portion of artery which runs from lower edge of pectoralis minor muscle and distal edge of teres major [8]. Third part of artery gives circumflex humeral branches and subscapular branch to opposite directions. This condition makes third part of the artery relatively inflexible, therefore more vulnerable to traction injuries. It was reported that 86 % of axillary arterial injuries were at the third part of the axillary artery. Especially just distal or proximal part of which subscapular artery arose is the common site for tear [9]. Another proposed mechanism is the pericapsular scarring of the shoulder grid. On 27% of cases of axillary artery injuries following anterior shoulder fracture/dislocations, there was a prior history of shoulder trauma. Periscapular scarring, following previous injuries (mainly recurrent dislocations), cause adhesions around the third part of the axillary artery, resulting with increased risk for traction injuries. Age is another main risk factor for axillary arterial injury following shoulder dislocations. It was reported that 86 % of cases of axillary artery injury following shoulder dislocations were older than 50 years of age [9]. Third part of the axillary artery is also a common place for atheroma plaque formation and atherosclerosis [1]. This property also decreases elasticity of the artery, thus increases risk for injury. This finding also correlates with age distribution of cases.

An enlarging mass in axilla and diminishion of pulses are common findings in axillary arterial injuries. The mass effect of hematoma may cause neurological deficit by either direct compression of nerve or ischemic neuropathy by decreased flow of the vasa nervosa [10-12]. At 95 % of cases with axillary arterial

injuries, radial and ulnar pulses were absent. Due to collateral circulation, presence of pulses doesn't rule out diagnosis of axillary arterial injury. One finding of arterial injury in presence of pulses is diminution of biphasic pattern of flow in Doppler study [1]. Persistent decreased hemoglobin also might be an indicator of axillary arterial bleeding.

Brachial plexus injuries, as much as 60 % may accompany these lesions and may be difficult to differentiate progressive muscle paralysis from traumatic plexopathy in delayed cases. As progressive ischemia cause muscle paralysis also, differential diagnosis may be difficult. In early phase electro diagnostic tests can be insufficient discriminating plexopathy from ischemia. In such cases an MRI of brachial plexus might help diagnosis of stretched or lacerated nerve roots [11-13, 22].

Axillary artery pseudo aneurysm is a late complication of vascular injury following shoulder dislocation. There are numerous published reports of late pseudo aneurysms originating from the third part of the axillary artery [13-17]. Pseudo aneurysms may present as progressive decrease of hemoglobin with large pulsatile mass at axilla, resulting with late onset ischemia with neurological symptoms.

Weakening of radial pulse or decreased pressure of involved extremity prior to reduction is a risk factor for vascular injury. Also if vascular status (pulse and flow) don't return to normal level following reduction, extension of vascular evaluation is advised. Eastcott et al. defined the condition as "imminent condition of severe irreversible acute ischemia" [18]. According to this condition danger signs were defined as: [1] waxy pallor, [2] persistent pain and numbness following reduction, [3] coldness of extremity in relation to opposite side, [4] muscle weakness or paralysis, [5] tenderness or rigidity [18]. If angiography reveals extravasation, damage or pseudo aneurysm formation, spontaneous recovery cannot be expected and early vascular intervention is indicated [16]. Although most of the cases were treated with open surgery, successful endovascular interventions have also been reported [19-21].

Since most injury types are tears, lacerations or avulsions of the axillary artery, tethering of circumflex arteries during reduction of dislocated shoulder is an unreported mechanism of injury. We hypothesized that, as the shoulder was relocated, tuberculum majus held and tethered anterior circumflex humeral artery upwards and caused tethering of axillary artery together. This resulted with total obliteration of artery at the level of circumflex branches.

Treatment options includes primary repair, synthetic or saphenous grafting, embolectomy as well as endovascular interventions. Since duration of ischemia is the main determinant of extremity viability, awareness of ischemia is the most important point of diagnosis and treatment of such injuries. Since our case was referred to our clinic two days after initial trauma, despite all efforts aiming perfusion and avoidance of reperfusion injury, extremity survival could not be achieved.

Our case is unique due to the mechanism of injury. Although one cannot predict such an arterial injury mechanism while reducing the shoulder, every surgeon should be aware of potential injuries of the axillary artery and should take precautions to prevent such devastating results.

References

[1] Kelley SP, Hinsche AF, Hossain JFM. Axillary artery transection following antterior shoulder dislocation: clinical presentation and current concepts. Injury. 2004;35:1128-32.

[2] Stayner LR, Cummings J, Andersen J, Jobe CM.Shoulder Dislocations in patients older than 40 years of age. Orthop Clin North Am. 2000;31(2):231-9.

[3] Byrd RG, Ryland RP, Roy TM. Axillary artery injuries after proximal fracture of the humerus. Am J Emerg Med. 1998;16:154-6.

[4] Nicholson DA. Arterial injury following shoulder trauma: a report of two cases. Br J Radiol. 1991;64(766):961-3.

[5] McLaughlin JA, Light R, Lustrin I. Axillary artery injury as a complication of proximal humerus fractures. J Shoulder Elbow Surg. 1998;7(3):292-4.

[6] Zuckerman JD, Flugstad DL, Teitz CC, et al: Axillary injury as a complication of proximal humeral fractures: Two case reports and a review of the literature. Clin Orthop. 1984;189:234-7.

[7] Rockwood C, Matsen F. Glenohumeral instability. In Rockwood C, Matsen F (eds):The Shoulder, 2nd ed. Philadelphia, WB Saunders, 1998, pp 611-754

[8] Warwick R, Williams PL. Gray's anatomy. 35th ed. Edinburgh: Longman,1973:647-9

[9] Gates JD, Knox JB. Axillary artery injuries secondary to anterior dislocation of the shoulder. J Trauma. 1995 Sep;39(3):581-3.

[10] Nash E, Soudry M, Abrahamson J, Mendes D. Neuropraxis secondary to hemorrhage in a traumatic dislocation of the shoulder. J Orthop Trauma 1984;24(6):546-7

[11] Nichols JS, Lillehei KO. Nerve injury associated with acute vascular trauma. Surg Clin North Am. 1988 Aug;68(4):837-52.

[12] Byström S, Vinnars B. Late posttraumatic compartment syndrome in the axillary neurovascular sheath--a case report. Acta Orthop Scand. 1999;70(5):519-22
[13] Helm AT, Watson JS. Compression of the brachial plexus in a patient with false aneurysm of the axillary as a result of anterior shoulder dislocation. J Shoulder Elbow Surg. 2002;11:278-9
[14] Fitzgerald JF, Keates J. False aneurysm as a late complication of anterior dislocation of the shoulder. Ann Surg. 1975;181:785-7
[15] Majeed L. Pulsatile haemarthrosis of the shoulder joint associated with false aneurysm of the axillary artery as a late complication of anterior dislocation of the shoulder. Injury. 1985;16:566-7
[16] Stenning M, Drew S, Birch R. Low-energy arterial injury at the shoulder with progressive or delayed nerve palsy. J Bone Joint Surg Br. 2004;87B:1102-6
[17] Tsutsumi K, Saito H, Ohkura M. Traumatic pseudoaneurysm of the subclavian artery following anterior dislocation of the shoulder; A report of a surgical case. Ann Thorac Cardiovasc Surg. 2006;12:74-6
[18] Eastcott HHG, BlaisdellFW, Silver D. Acute ischemia In: Eastcott HHG, ed. Arterial surgery. Third ed. Edinburgh: Churchill Livingstone,1992:31-54
[19] Stahnke M, Duddy MJ. Endovascular repair of a traumatic axillary pseudoaneurysm following anterior shoulder dislocation. Cardiovasc Intervent Radiol. 2006;29:298-301
[20] St John FB, Scudder J, Stevens DL. Spontaneous rupture of axillary artery. Ann Surg.1945;121(6):882-90.
[21] Lodding P, Angeras U. Fatal axillary artery injury following anterior dislocation of the shoulder. Ann Chir Gynaecol. 1988;77(3):125-7.
[22] Cook LB, Varley S. Fatal tracheal compression after haemorrhage into the axilla. Br J Anaesth. 1992;69:322-4.
[23] Modi CS, Nnene CO, Godsiff SP, Esler CNA. Axillary artery injury secondary to displaced proximal humeral fractures: a report of two cases. J Orthop Surg (Hong Kong). 2008;16(2):243-6.
[24] Mouzopoulos G, Lasanianos N, Mouzopoulos D, Batanis G, Tzurbakis M, Georgilas I. Acute renal failure due to rhabdomyolysis after proximal humerus fracture associated with axillary artery rupture. Int Urol Nephrol. 2008;40:855-8.
[25] McKenzie AD, Sinclair AM. Axillary artery occlusion complicating shoulder dislocation. A report of two cases. Ann Surg.1958;148(1):139-41.
[26] Gibson JMC. Rupture of the axillary artery. J Bone Joint Surg Br.1962;44B(1):114-5.
[27] McQuillan WM, Nolan B. Ischemia complicating injury. J Bone Joint Surg Br.1958;50B(3):482-92.
[28] Smyth EHJ. Major arterial injury in closed fracture of the neck of the humerus. J Bone Joint Surg Br.1969;51B(3):508-10.
[29] Sathyarup D, Huilgol AK, Iyer KM. Axillary artery thrombosis. Injury 1958;19(1):45-7.
[30] Ng KC, Singh S, Low YP. Axillary artery damage from shoulder trauma- a report of two cases. Singapore Med J. 1990;31:592-5.
[31] Syed AA, Williams HR. Shoulder disarticulation: a sequel of vascular injury secondary to a proximal humeral fracture. Injury. 2002;33:771-4.
[32] Mathieu L1, Chetboun A, Nourissat G, Doursounian L. Rupture of axillary artery and brachial plexus paralysis as complications of recurrent anterior glenohumeral dislocation: a case report. Chir Main. 2009 Apr;28(2):103-6. doi: 10.1016/j.main.2009.01.002.
[33] Nour M1, Zerhouni H, Bensaid B, Khaloufi S, Ouazzani L, Aqquaoui L, Elhami I, Oubejja H, Erraji M, Ettayebi F. Axillary artery pseudo-aneurysm secondary to shoulder dislocation in children. J Mal Vasc. 2013 Dec;38(6):377-80.
[34] Ergüneþ K1, Yazman S, Yetkin U, Cakýr V, Gurbuz A. Axillary artery transection after shoulder dislocation. Ann Vasc Surg. 2013 Oct;27(7):974.e7-10.
[35] Rangdal SS1, Kantharajanna SB, Daljit S, Bachhal V, Raj N, Krishnan V, Goni V, Singh Dhillon M. Axillary artery thrombosis with anteroinferior shoulder dislocation: a rare case report and review of literature. Chin J Traumatol. 2012;15(4):244-8.
[36] Palcau L1, Gouicem D, Dufranc J, Mackowiak E, Berger L. Delayed axillary artery pseudoaneurysm as an isolated consequence to anterior dislocation of the shoulder. Ann Vasc Surg. 2012;26(2):279.e9-12.
[37] Karkos CD, Karamanos DG, Papazoglou KO, Papadimitriou DN, Zambas N, Gerogiannis IN, Gerassimidis TS. Axillary artery transection after recurrent anterior shoulder dislocation. Am J Emerg Med. 2010;28(1):119.e5-7.
[38] Inui A, Fujioka H, Shoulder fracture dislocation associated with axillary artery injury: A case report J Shoulder Elbow Surg. 2009;18(2):e14-6.

The European Research Journal

Case Report

http://www.eurj.org

e-ISSN: 2149-3189

DOI: 10.18621/eurj.2015.1.2.71

Adult unilateral duplex system ureterocele with multiple calculi

Semih Tangal[1], Mehmet Salih Boga[1], Kutsal Onal[1], Ahmet Hakan Haliloglu[1]

[1] *Department of Urology, Ufuk University Medicine School, Ankara, Turkey*

ABSTRACT

Ureterocele is a congenital cystic dilatation of the distal portion of the ureter. A was admitted to our hospital with complaints of pollakuria, right flank pain and macroscopic hematuria. Direct urinary system X-ray suggested a right lower ureteral calculi and intravenous pyelography (IVP) revealed a right side complete duplex system of ureterocele, multiple distal ureteral calculi and characteristic appereance of "cobra head" or "spring onion". A transurethral transversal incision was made in the right ureterocele at the inferior lateral border and 176 spherical calculi of almost the same size were removed. In conclusion, endoscopic ureterocele incision and stone extraction is a safe and effective treatment of adult orthotopic ureteroceles and this technique has minimal risk for iatrogenic vesicoureteral reflux.

Eur Res J 2015;1(2):71-73

Keywords: Ureterocele, multiple calculi, unilateral duplex system

Introduction

Ureterocele is a congenital cystic dilatation of the distal portion of the ureter. It is a one of the rare urologic condition. It is more frequent in females than in males, the overall prevalence being 1 in 4,000 births. The early symptom of pyelonephritis in either sex may lead to the diagnosis, later symptoms can include dysuria, recurrent cystitis and urgency [1]. Most duplex system ureteroceles present as urinary tract infections at an early age, with adult presentation being uncommon [2]. We present a case report of an adult male patient with unilateral duplex system ureterocele, containing multiple small stones. There was no history of urinary tract infections or stone disease.

Case Presentation

A was admitted to our hospital with complaints pollakuria, right flank pain and macroscopic hematuria. He had not had any episodes of urinary tract infection. Urinalysis revealed macroscopic hematuria and no pyuria. Direct urinary system X-ray suggested right lower ureteral calculi and IVP (Intravenous pyelography) revealed a right side complete duplex system of ureterocele, multiple distal ureteral calculi and characteristic appereance of "cobra head" or "spring onion" (Figure 1). Voiding cystourethrogram performed and revealed no vesicoureteral reflux. Cystoscopy confirmed right ureterocele in an otherwise normal urinary bladder. A transurethral

Address for correspondence:
Semih Tangal, MD, Ufuk University, Faculty of Medicine, Ankara, Turkey
e-mail: semihtangal@mynet.com
Received: 15.12.2014; Accepted: 09.01.2015: Published Online: 04.07.2015

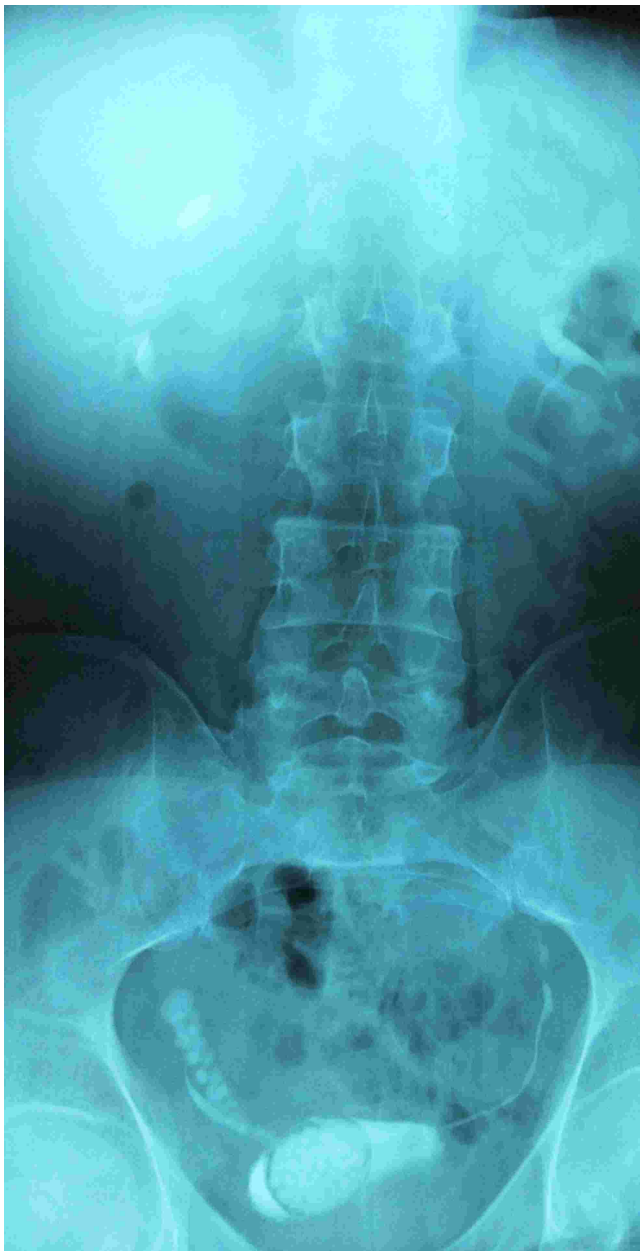


Figure 1. Intravenous urography scan revealing unilateral ureterocele with multiple calculi.

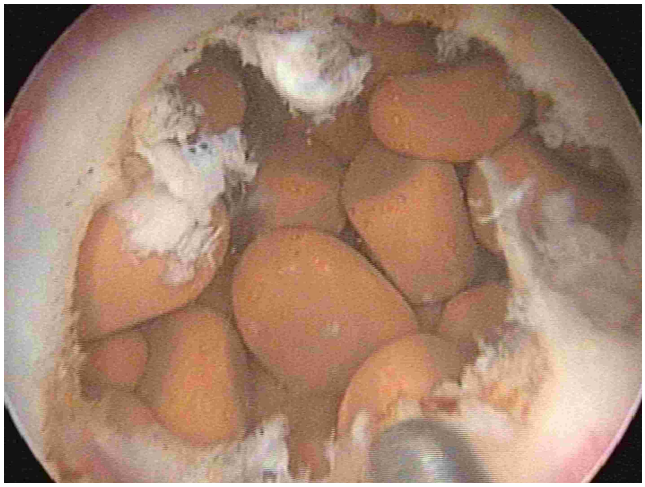


Figure 2. A transurethral transversal incision in the right ureterocele at the inferior lateral border.

Figure 3. Multiple calculi were successfully extracted

Discussion

Ureteroceles in adults are typically single system, intravesical and orthotopic [3]. Although the overall incidence of stones in ureteroceles varies from 4 to 39 % [4]. Adult duplex system ureterocele with multiple calculi is rare. There are different hypotesis about formation of the ureterocele stones [5,6]. Most accepted mechanism is the incomplete dissolution of the Chwelle's membrane, which is usually present before the 37th day of gestation as a division between the urogenital sinus and the developing ureteral bud. Endoscopic ureterocele incision and stone extraction is safe and effective treatment of adult orthotopic ureteroceles and minimal risk for iatrogenic vesicoureteral reflux given creation of anti-reflux flap valve mechanism [7].

References

[1] S. Tekgül, H. Riedmiller, E. Gerharz, P. Hoebeke, R. Kocvara,R. Nijman, Chr. Radmayr, R. Stein. Guidelines on pediatric urology. 2011:63-4

[2] Van den Hoek J, Montagne GJ, Newling DWW. Bilateral intravesical duplex system ureteroceles with multiple calculi in an adult patient. Scand J Urol Nephrol. 1995;29:223-4

[3] Schlussel RN, Retik AB. Ectopic ureter, ureterocele and other anomalies of the ureter. In: Wein AJ, Kavoussi LR, Novick AC, et al, eds. Campbell- Walsh urology. 9th ed. Philadelphia: Saunders. 2007:3383-422

[4] Nash AG, Knight M. Ureterocele calculi. BJU Int. 1973;45:404-7.

[5] Lieb J, Abrahams HM, Das AK. Endoscopic management of milk of calcium-filled ureterocele stump. J Endourol. 2003 Dec;17(10):917-8.

[6] Grases F, Söhnel O, Costa-Bauzá A, Pieras E, Muñoz D. Structural features of three ureterocele calculi. Int Urol Nephrol. 2007;39(3):765-9.

[7] Shah HN, Sodha H, Khandkar AA, Kharodawala S, Hegde SS, Bansal M. Endoscopic management of adult orthotopic ureterocele and associated calculi with holmium laser: experience with 16 patients over 4 years and review of literature. J Endourol. 2008 Mar;22(3):489-96.

The European Research Journal

Case Report

http://www.eurj.org

e-ISSN: 2149-3189

DOI: 10.18621/eurj.2015.1.2.74

Acute pancreatitis and type 2 diabetes mellitus: who is guilty?

Ferit Kerim Kucukler[1]

[1]*Department of Endocrinology, Hitit University Medicine School, Corum, Turkey*

ABSTRACT

Many factors play a role in the etiology of acute pancreatitis and its pathogenesis is not fully understood. Dipeptidyl peptidase 4 (DPP-4) inhibitors are a new group of agents for the treatment of Diabetes Mellitus (DM). There are some controversies about specific adverse events such as pancreatitis and hypersensitivity reactions. A 50-year-old morbid obese woman presented with upper abdomen pain after the eating food, nausea and vomiting. She was diagnosed with type 2 diabetes mellitus 7 years ago. Vildagliptin had been added to her treatment six months ago. Abdominal examination revealed epigastric tenderness with guarding. Laboratory data revealed elevated pancreatic enzymes. Abdominal computed tomography (CT) showed features of pancreatitis. Vildagliptin was stopped and patient's symptoms had diminished in parallel with normalization of pancreatic enzymes; and at the 5th day patient was discharged with healthy condition. She was free of symptoms and all laboratory data were normal at the 30th day after discharge. It is important to keep in mind that diabetic patients have an increased risk of pancreatitis which may be related to obesity, hyperlipidemia and/or drugs.

Eur Res J 2015;1(2):74-77

Keywords: Diabetes mellitus, acute pancreatitis, dipeptidyl peptidase 4 inhibitors, morbid obesity

Introduction

Alcohol and gallstones are the etiology of chronic pancreatitis in many adults. Other etiologic factors are biliary sludge and microlithiasis, smoking, hypertriglyceridemia, hypercalcemia, drugs, obesity, diabetes, infections and toxins, trauma, pancreas divisum, vascular disease, pregnancy and idiopathic [1]. Patients with diabetes mellitus have a 2 fold increase in the risk of pancreatitis due to factors such as obesity, gallstones, elevated triglycerides, and medications [2, 3]. Obesity increases risk of pancreatitis and pancreas carcinoma due to increased inflammation [4]. Incretin mimetics, glucagon-like peptide-1 receptor (GLP-1R) agonists and DPP-4 inhibitors are new anti-diabetic agents which can cause pancreatitis as side effect. Postmarketing events of acute pancreatitis have been reported in patients receiving sitagliptin, vildagliptin, or saxagliptin. Most of the cases with pancreatitis are reported with sitagliptin among DPP-4 inhibitors; although there are a few case reports related to vildagliptin, too. In this paper, we report a case of acute pancreatitis which may be associated DPP-4 inhibitors, obesity or DM itself.

Address for correspondence:
Ferit Kerim Kucukler, MD, Hitit University, Endocrinology Department, Corum, Turkey
E-mail: kkucukler74@gmail.com
Received: 23.03.2015; Accepted: 05.06.2015: Published Online: 04.07.2015

Case Report

A 50-year-old woman presented with upper abdomen pain after the eating food, nausea and vomiting. She was diagnosed with type 2 diabetes mellitus for 7 years, and had been treated with acarbose 150 mg/day, glimepiride 3 mg/day and metformin 2000 mg/day. Six months before this admission she had had an HbA1c level of 7.8 % and vildagliptin, 50 mg twice daily, had been added to her treatment. The patient had no history of alcohol, smoking or gallbladder disease. On physical examination, her weight was 100 kg, height was 150 cm and body mass index was 44.4 kg/m². Abdominal examination revealed epigastric tenderness with guarding. Laboratory findings revealed elevated pancreatic enzymes, increased white blood cells (WBC), and normal triglycerides levels (Table 1). Abdominal CT showed features of pancreatitis (pancreatic enlargement and peri-pancreatic pollution) and gallbladder was free of stones (Figures 1 and 2); intra-extrahepatic bile duct and choledoc diameters were also normal. We conclude the diagnosis of acute pancreatitis on the basis of these findings. Vildagliptin and all other oral anti-diabetic drugs were stopped and patient is started on insulin treatment. She was treated conservatively for pancreatitis. On the next day, amylase and lipase levels had decreased. On the 5th day, a repeat abdominal CT showed that pancreas size was normal and there was no pollution around of the pancreas (Figure 3); amylase and lipase levels have also returned to normal; thus, the patient was discharged. On her control visit at the 30th day after discharge the patient was free of symptoms and all laboratory data were within normal limits.

Discussion

Acute pancreatitis is a disease with a wide spectrum of severity and complications, with different incidences among populations. The etiology of acute pancreatitis is multifactorial including gallstones, chronic alcohol abuse, hypertriglyceridemia, obesity, diabetes mellitus, viral hepatitis and drugs [2].

Two large studies reported that patients with type 2 DM have 1.49-2.83 fold increased risk of acute pancreatitis compared to nondiabetics [2, 3]. The exact cause of the increased risk of pancreatitis in diabetic patients is unclear, however, the known risk factors for pancreatitis appear more frequently in diabetic patients.

Table 1. Basal and follow-up laboratory data.

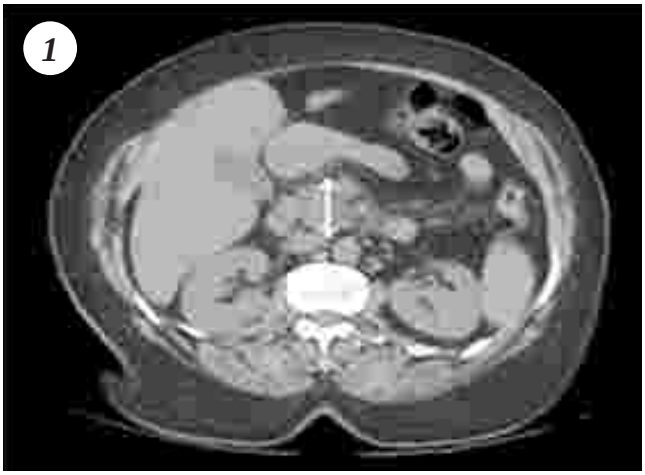
Parameters	1.day	5.day	30.day
WBC (4-10 109/L)	10,1	6,7	8,5
AST (15-37 U/L)	61	16	13
ALT (30-65 U/L)	106	43	15
GGT (5-38 U/L)	272	42	57
Alkaline Phosphatase (30-120 U/L)	255	105	116
Triglyceride (0-200 mg/dl)	110	89	121
Amylase (25-115 U/L)	963	49	53
Lipase (0-60 U/L)	347	40	38

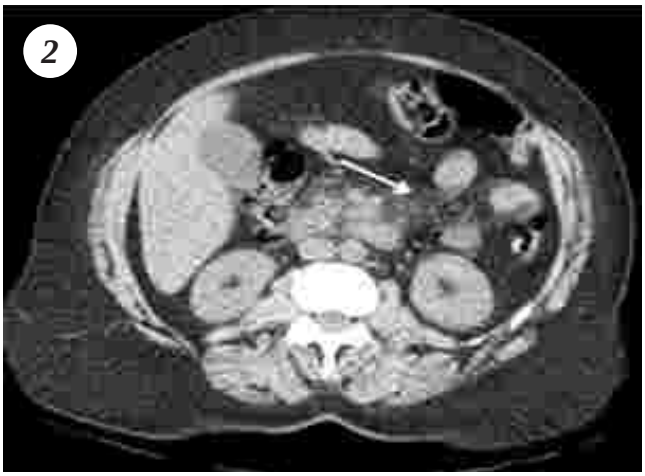
AST: Aspartate aminotransferase, ALT: Alanine aminotransferase, GGT: Gamma-glutamyltransferase

Although it is a controversial topic, some post-marketing reports, raised the possibility of an increased risk of pancreatitis with incretin based therapies especially related GLP-1 agonists and sitagliptin [5-7]. Between 2006 and 2009 there were 88 post marketing reports of severe pancreatitis associated sitagliptin [8]. A study evaluating the US Food and Drug Administration Adverse Event Reporting System data notifying a 6-fold increased risk of pancreatitis in patients taking exenatide or sitagliptin has attracted attention about pancreatitis side effect related to these drugs [9]. However, in another analysis, which comprised 20.312 patients treated with a DPP-4 inhibitor and 13.569 patients treated with either placebo or a comparator. There was no evidence of an increase in the incidence of pancreatitis with DPP-4 inhibitor therapy [10]. The most common adverse effects of vildagliptin are headache, nasopharyngitis, cough, dizziness and increased sweating. Uptoday we could find three pancreatitis case reports related to vildagliptin in the literature [7, 10, 11]. The mechanisms of pancreatitis related with incretin mimetics are uncertain. Some animal studies revealed that sitagliptin increased pancreatic ductal replication, ductal metaplasia and rarely induced pancreatitis in mouse model [12, 13].

Obesity increases risk of acute and chronic pancreatitis because of chronic inflammation [4, 14]. In addition to this, obesity also affects the mortality, local or systemic complications of acute pancreatitis as a prognostic factors. Interestingly, obese patients have better prognosis than non-obese patients after pancreatitis, which is called "obesity paradox" [15].

Our patient had obesity, type 2 DM and DPP-4 inhibitor usage as risk factors for pancreatitis. The acute pancreatitis developed in this patient while being treated with vildagliptin but the presence of a causal relation could not be determined. Two of case reports have reported early pancreatitis within a month after vildagliptin [7, 11] and another reported pancreatitis after 6 months [10]. Our patient had pancreatitis after 6 months. Appearance of pancreatitis after vildagliptin, and resolving of sypmtoms, physical and imaging findings and normalization of laboratory data rapidly after its discontinuation, suggest that pancreatitis may have been caused by vildagliptin. In the light of above





Figures 1 and 2. Basal axial CT images showing pancreatic enlargement and peri-pancreatic pollution.

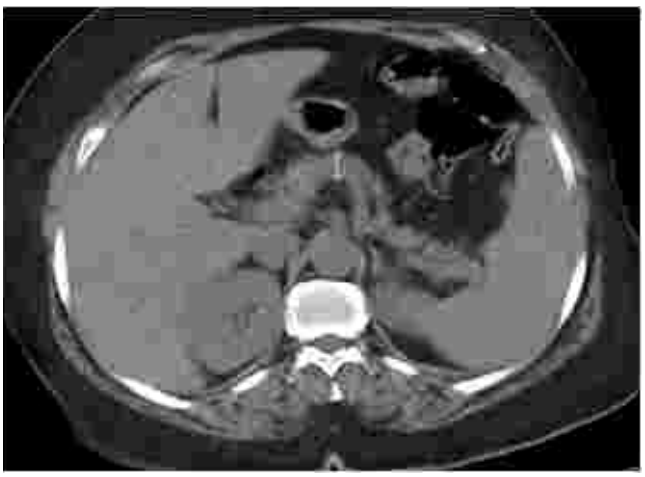


Figure 3. Postpancreatic axial CT: Pancreas size is normal and there is no pollution.

mentioned limited data, because time frames upto appearance of pancreatitis is different, we assume that vildaglipitin related pancreatitis may be an idiosyncratic effect.

In conclusion, DPP-4 inhibitors may also be considered besides the classic risk factors of pancreatitis in patients with DM. We assume that antidiabetic treatment must be individualized keeping also in mind that each diabetic patient may have a diverse risk factor(s) for pancreatitis.

Informed Consent

Written informed consent was obtained from patient who participated in this case report

Conflict of interest

The authors declared no conflict of interests

Referrences

[1] Tenner S, Baillie J, DeWitt J, Vege SS. American College of Gastroenterology guideline: management of acute pancreatitis. Am J Gastroenterol. 2013:108:1400-15.

[2] Girman CJ, Kou TD, Cai B, Alexander CM, O'Neill EA, Williams-Herman DE, Katz L. Patients with type 2 diabetes mellitus have higher risk for acute pancreatitis compared with those without diabetes. Diabetes Obes Metab. 2010;12:766-71.

[3] Noel RA, Braun DK, Patterson RE, Bloomgren GL. Increased risk of acute pancreatitis and biliary disease observed in patients with type 2 diabetes: a retrospective cohort study. Diabetes Care 2009; 32: 834-838.

[4] Gumbs AA. Obesity, pancreatitis, and pancreatic cancer. Obes Surg. 2008;18:1183-7.

[5] Goossen K, Graber S. Longer term safety of dipeptidyl peptidase-4 inhibitors in patients with type 2 diabetes mellitus: systematic review and meta-analysis. Diabetes Obes Metab. 2012;14:1061-72.

[6] Ligueros-Saylan M, Foley J, Schweizer A, Couturier A, Kothny W. An assessment of adverse effects of vildagliptin versus comparators on the liver, the pancreas, the immune system, the skin and in patients with impaired renal function from a large pooled database of Phase II and III clinical trials. Diabetes Obes Metab. 2010;12:495-509.

[7] Girgis CM, Champion BL. Vildagliptin-induced acute pancreatitis. Endocr Pract. 2011;17:48-50.

[8] US Food and Drug Administration. MedWatch 2009 Safety Alerts for Human Medical Products: Sitagliptin (marketed as Januvia and Janumet) - acute pancreatitis. September 25, 2009. Available at: http:// www.fda.gov/ Safety/ MedWatch/ SafetyInformation/ SafetyAlertsforHumanMedicalProducts/ ucm183800.htm. Accessed for verification June 13, 2011.

[9] Elashoff M, Matveyenko AV, Gier B, Elashoff R, Butler PC. Pancreatitis, pancreatic, and thyroid cancer with glucagon-like peptide-1-based therapies. Gastroenterology 2011;141:150-6.

[10] Saraogi R, Mallik R, Ghosh S. Mild acute pancreatitis with vildagliptin use. Indian J Endocr Metab. 2012;16:S480-2.

[11] Kunjathaya P, Ramaswami PK, Krishnamurthy AN, Bhat N. Acute necrotizing pancreatitis associated with vildagliptin. JOP . 2013;14:81-4.

[12] Butler AE, Galasso R, Matveyenko A Rizza RA, Dry S, Butler PC. Pancreatic duct replication is increased with obesity and type 2 diabetes in humans. Diabetologia 2010;53:21-6.

[13] Matveyenko AV, Dry S, Cox HI, Moshtaghian A, Gurlo T, Galasso R, et al. Beneficial endocrine but adverse exocrine effects of sitagliptin in the human islet amyloid polypeptide transgenic rat model of type 2 diabetes: interactions with metformin. Diabetes. 2009;58:1604-15.

[14] Martinez J, Sanchez-Paya J, Palazon JM, Suazo-Barahona J, Robles-Diaz J, Perez-Mateo M. Is obesity a risk factor in acute pancreatitis? A meta-analysis. Pancreatology. 2004;4:42-8.

[15] Premkumar R, Phillips AR, Petrov MS, Windsor JA. The clinical relevance of obesity in acute pancreatitis: Targeted systematic reviews. Pancreatology. 2015; 15:25-33.

The European Research Journal

Case Report

http://www.eurj.org

e-ISSN: 2149-3189

DOI: 10.18621/eurj.2015.1.2.78

Spontaneous uvula hematoma: an unusual case

Hacer Baran[1], Ozan Gokdogan[2]

[1] *Departement of Otorhinolaryngology, Medical Park Hospital, Bursa, Turkey*
[2] *Department of Otorhinolaryngology, Memorial Hospital, Ankara, Turkey*

ABSTRACT

Hematomas in upper aerodigestive tract are not rare especially in patients with cardiologic conditions.Without comorbidities, it can also be seen after trauma cases. Sponatenous hematoma is a rare clinical condition that needs detailed evaluation especially for hematologic and immunologic disorders. We describe a case with spontaneus uvula hematoma. We describe a case with spontaneus uvula hematoma, without a history of trauma and anticoagulant therapy. We also discussed the management strategies. This patient with those findings, appears to be the firts case that was published in the English-language literature.

Eur Res J 2015;1(2):78-80

Keywords: Spontaneous, hematoma, uvula

Introduction

In literature there were lingual, uvula hematomas cases after thrombolytic treatment with streptokinase or retro- and parapharyngeal haematoma spontaneously [1-3]. We describe a case of spontaneus uvula hematoma.

Case Presentation

A 16-year-old man presented with complaint of a foreign body sensation and difficulty in swallowing in the throat . The patient was admitted to the hospital with a foreign body sensation and difficulty in swallowing in the throat. The patient had no history of systemic disease or trauma. His complaints started 1 day ago. There was no recent history of endotracheal intubation or other intraoral trauma.

The patient did not have stridor, dyspnea or a change in vocal tone. The patient had no history of systemic disease or trauma. An enlarged and bruised uvula was noted at oral cavity examination. (Figure 1). Other systemic physical examination of the case was normal. The patient's blood panel, platelet count, coagulation studies and peripheral blood smears were normal.

We drained hematom under local anesthesia with enjector. One cc blood was drained. After that 40 mg PrednolR was injected intravenously.

Address for correspondence:
Ozan Gokdogan, MD, Departement of Otorhinolaryngology, Memorial Health Group Hospital, Ankara, Turkey
Telephone: +90- (505) 596 65 58 ozangokdogan@gmail.com
Received: 22.12.2014; Accepted: 08.02.2015: Published Online: 04.07.2015

We observed patient for a day. After the procedure complaints of patients are reduced. We evaluated the patient in the control examination after three days. He had no complaints. (Figure 2)

Discussion

Hematoma of the uvula, mouth, tongue, sublingual, laryngeal and face have been reported after streptokinase administration or hemophilia [1,2,4,5]. In literature one cases was presented with spontaneous haemorrhage into the retropharyngeal and parapharyngeal space secondary to bleeding from a thyroid cyst [3]. Usually a history of anticoagulant therapy or an anatomic pathology were determined the cause of hematoma.

There are reports of hemmorhage into the oral cavity after streptokinase administration when the airway has not been manipulated [1,3,6]. Hemorrhage and hematoma of the oral cavity can be fatal [5]. In literature an uvula hematom was determined spontaneusly after streptokinase administration in intubated patient [1]. In our case there are uvula hematoma without a history of trauma, anticoagulant therapy or systemic disease. The first target in the management strategy is to control patient's airway. If intubation is impossible due to upper airway pathologies, emergency tracheotomy may be necessary. After maintaining air way, management of anticoagulation if necessary or drainage of hematoma is the second step of management of upper aerodigestive hematomas. If hematoma of upper aerodigestive tract is not so serious, spontaneous resolution occurs within a few days. Cessation of anticoagulants if possible may help this period.

Surgical drainage may result in some complications such as increased swelling even with complete airway obstruction and post-operative re-bleeding.

However there are a few case reports in the management of upper aerodigestive tract hematomas, airway protection, cessation of anticoagulant if necessary and hematoma drainage are the main treatment strategies.

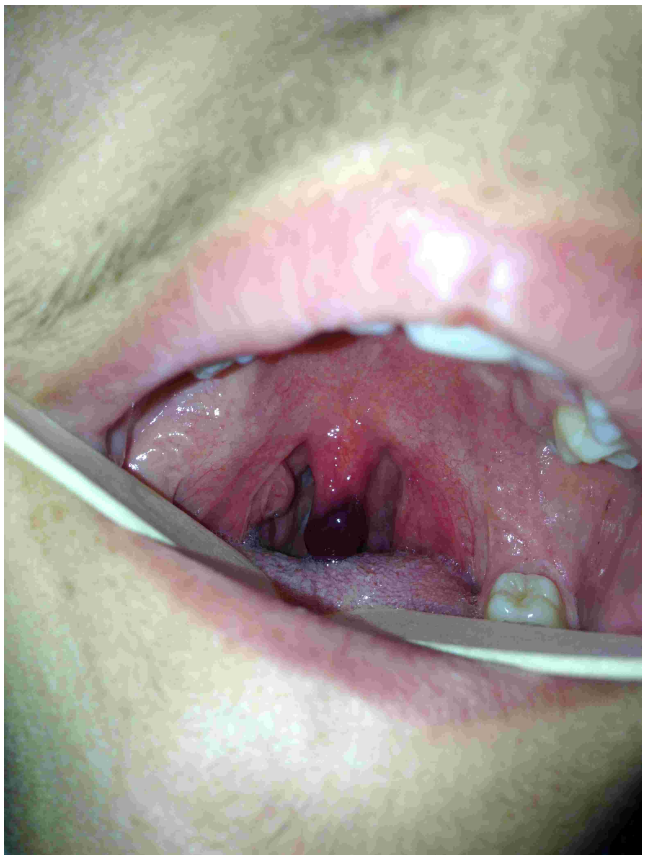


Figure 1. An enlarged and bruised uvula at oral cavity

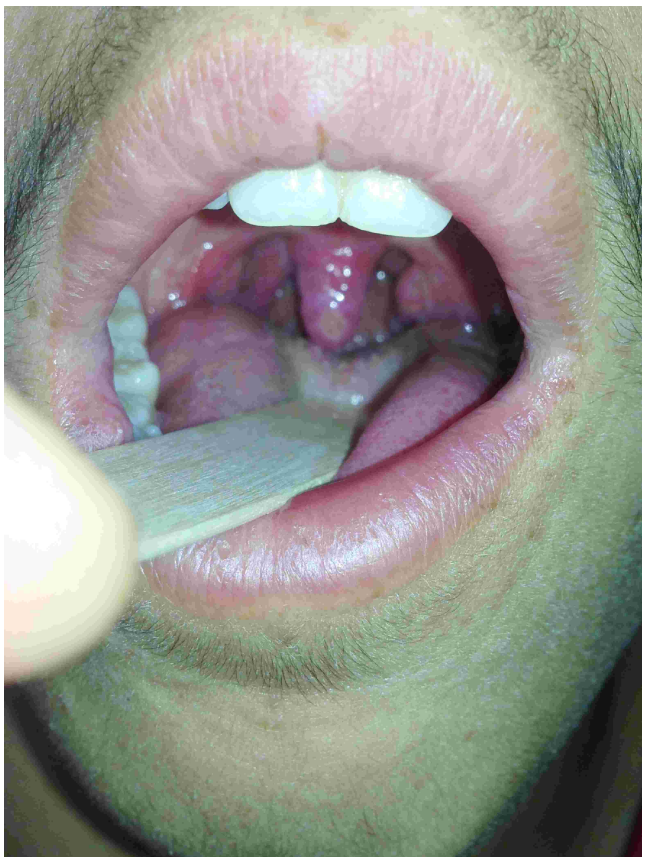


Figure 2. Appearance of the uvula after drainage.

Conclusion

Trauma and anticoagulant drug use are the main etiologic factors of upper aerodigestive tract hematomas. The main priority of management strategy in upper airway hematomas is based on airway protection. After airway integrity provided, drainage procedures may be applied.

References

[1] Gill P, Sadler P. Uvula hematoma: an unusual complication of streptokinase. Anesth Analg. 1999 Aug;89(2):307-8.

[2] Eggers KA, Mason NP. Lingual haematoma following streptokinase therapy [letter]. Anaesthesia. 1994;49:922.

[3] Paleri V, Maroju RS, Ali MS, Ruckley RW. Spontaneous retro- and parapharyngeal haematoma caused by intrathyroid bleed. J Laryngol Otol. 2002 Oct;116(10):854-8.

[4] Jervis P, Mason JDT, Jones NS. Streptokinase and facial haematoma. Postgrad Med. 1995;71:114 -5.

[5] Kausar H, Gilani JM, Khan OA. No more Doritos and lobster tails: a case report of life-threatening sublingual hematoma. Del Med J. 2009 Jul;81(7):255-8.

[6] Williams PJ, Jani P, McGlashan. Lingual haematoma following treatment with streptokinase and heparin: anaesthetic management. Anaesthesia. 1994;49:417- 8.

The European Research Journal

Case Report

http://www.eurj.org

e-ISSN: 2149-3189

DOI: 10.18621/eurj.2015.1.2.81

Aneurysmal bone cyst of the parietal bone: case report

Mehmet Ali Ekici[1], Zuhtu Ozbek[2], Burak Kazanci[3], Bulent Guclu[4]

[1] *Department of Neurosurgery, Sevket Yilmaz Research and Training Hospital, Bursa, Turkey*
[2] *Department of Neurosurgery, Osmangazi University Medical Faculty Hospital, Eskisehir, Turkey*
[3] *Department of Neurosurgery, Ufuk University Medical Faculty Hospital, Ankara, Turkey*
[4] *Department of Neurosurgery, Lutfi Kirdar Kartal Research and Training Hospital, Istanbul , Turkey*

ABSTRACT

Aneurysmal bone cysts are locally destructive, vascular, multicystic benign tumors of bone, which are usually located on metaphysis. Cranial aneurysmal bone cysts are uncommon. We report a 18-year-old girl with a 3-month history of skull asymetry and headache which was not relieved by analgesic drugs. Computed tomography scan demonstrated an osteolytic skull lesion of the right parietal bone and the neural tissue that was compressed without midline shift. The patient had complete recovery after total excision of the lesion. We also discuss the etiology, pathogenesis, pathologic features, imaging characteristics and treatment of cranial aneurysmal bone cysts.

Eur Res J 2015;1(2):81-84

Keywords: Aneurysmal bone cyst, bone tumor, parietal bone

Introduction

An aneurysmal bone cyst (ABC) is a rare, vascular, benign tumor of the bone with obscure pathogenesis. ABC represent only 1 to 2 % all primary skull tumors. Approximately, 50% of all ABC,s are found in the metaphysis of long bones and 20% involve the vertebrae. ABCs develop on the bones of the cranium, which are Only 3-6 % [1]. We present a 18 year-old girl with ABC in the right parietal region. We also review and discuss the etiology, pathogenesis, pathologic features, imaging characteristics and treatment of cranial ABCs.

Case Presentation

A 18-year-old otherwise healthy girl presented with a 3-month history of gradually increasing swelling at the right parieatal bone and headache which was not relieved by analgesic drugs. There was a history of head trauma 5 years ago. On physical examination there was a non-tender, firm swelling in the right parietal region of the head. Neurological examination was normal. A plain radiograph of the skull revealed an osteolytic lesion of the right parietal region (Figure 1). Computed tomography (CT) scan showed extra-axial, osteolytic mass in the right parietal region,

Address for correspondence:
Mehmet Ali Ekici, MD, Sevket Yilmaz Training and Research Hospital, Department of Neurosurgery, 16300, Bursa-Turkey,
Telephone: +90- (224) 295 50 00 Fax: +90- (224) 295 54 97 mehmetali.ekici@gmail.com
Received: 10.01.2015; Accepted: 20.03.2015: Published Online: 04.07.2015

compressing right parietal lobe (Figure 2). T1-weighted magnetic resonance imaging (MRI) with contrast showed a large, heterogeneously contrast enhancing, extra-axial mass in the right parietal region. The mass showed medial extension with compression of parietal lobe. T2-weighted MRI showed a homogenous increase in signal intensity (Figure 3). Surgical excision of the right parietal ABC was planned. A right parietal horseshoe skin flap was raised. The tumor was softer in consistency than surrounding bone. After opening burr-holes, ABC with the the intact bone around it was excised (Figure 4). Radiotherapy was not given postoperatively. The patient was symptom free in the post operative period after 7 months of surgery. Histopathological examination showed cavernous spaces filled with blood. The spaces were separated by collagenous tissue containing fibroblasts, focal collections of osteoclastic and intermediate giant cell. Normal bony trabeculae being permeated by the lesion in the periphery was suggestive of aneurysmal bone cyst.

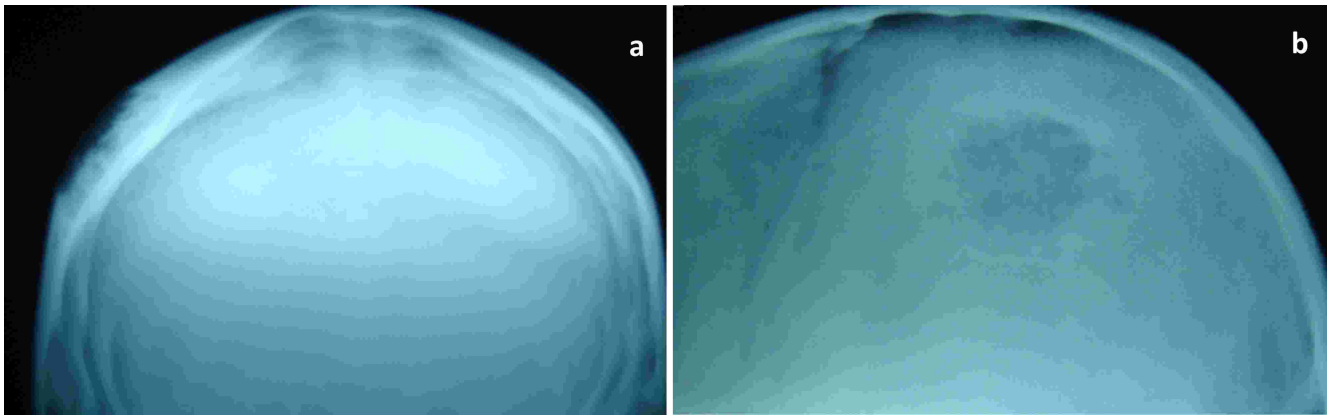


Figure 1. a) AP skull radiograph of the patient showing an osteolytic lesion in the right parietal bone. b) Lateral skull radiograph of the patient showing a nearly round radiolucent lytic lesion in the right parietal bone.

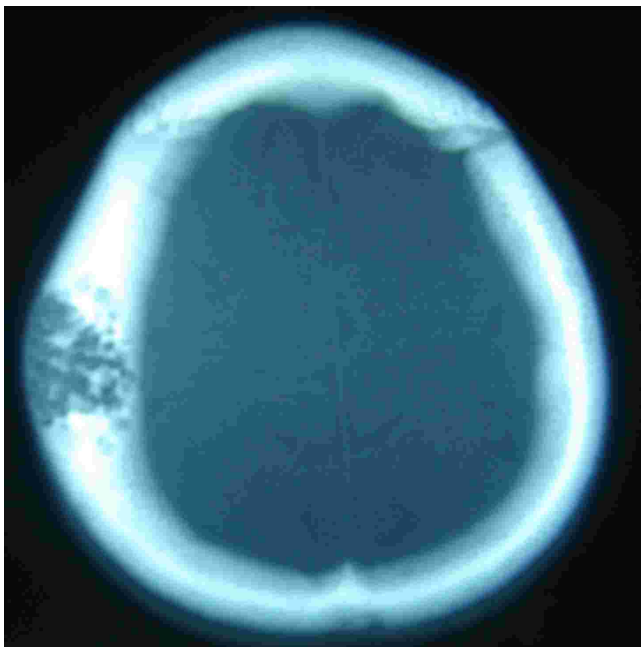


Figure 2. Axial noncontrast CT scan with bone windows reveals an osteolytic lesion with bony enlargement and cortical thinning with no periosteal reaction.

Discussion

ABCs are uncommon benign, expansile bone lesions characterized by a reactive proliferation of connective tissue containing multiple blood filled cavities and usually appear in the second decade of life [2]. The pathogenesis of ABC is still unclear. ABCs may be primary or secondary depending on the presence or absence of an associated lesion. The primary form of ABC has no identifiable preexisting lesion and is thought to be caused by traumatic or anomalous venous disruption in the osseous diploe [3]. ABCs in the presenceof another lesion are called secondary ABCs. Secodary ABCs are thougt to be formed by a disruption in the osseous circulation caused by the associated lesion, such as skeletal pathology, including fibrous dysplasia, giant cell tumor, chondroblastoma, chondromyxoid fibroma, nonossifying fibroma,

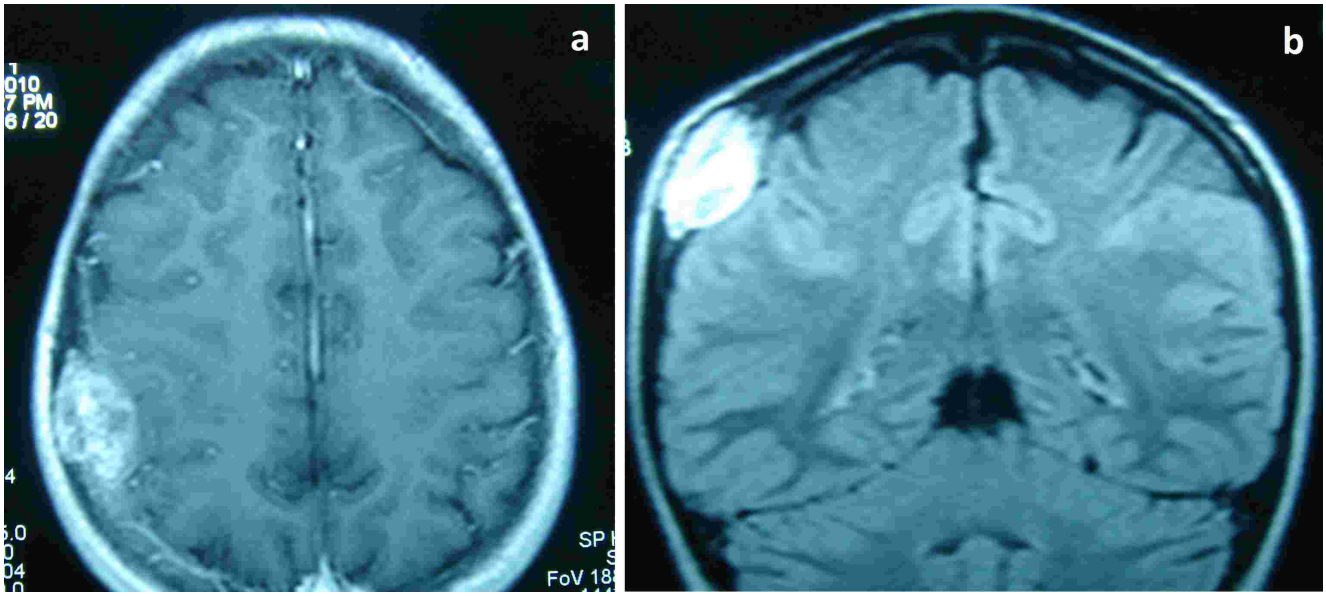


Figure 3. a) Axial T1-weighted magnetic resonance imaging with contrast showing enhancing lesion of right parietal bone.b) Coronal nonenhanced T2-weighted magnetic resonance imaging showing a hyperintense nodule eroding both the inner and outer tables of the skull

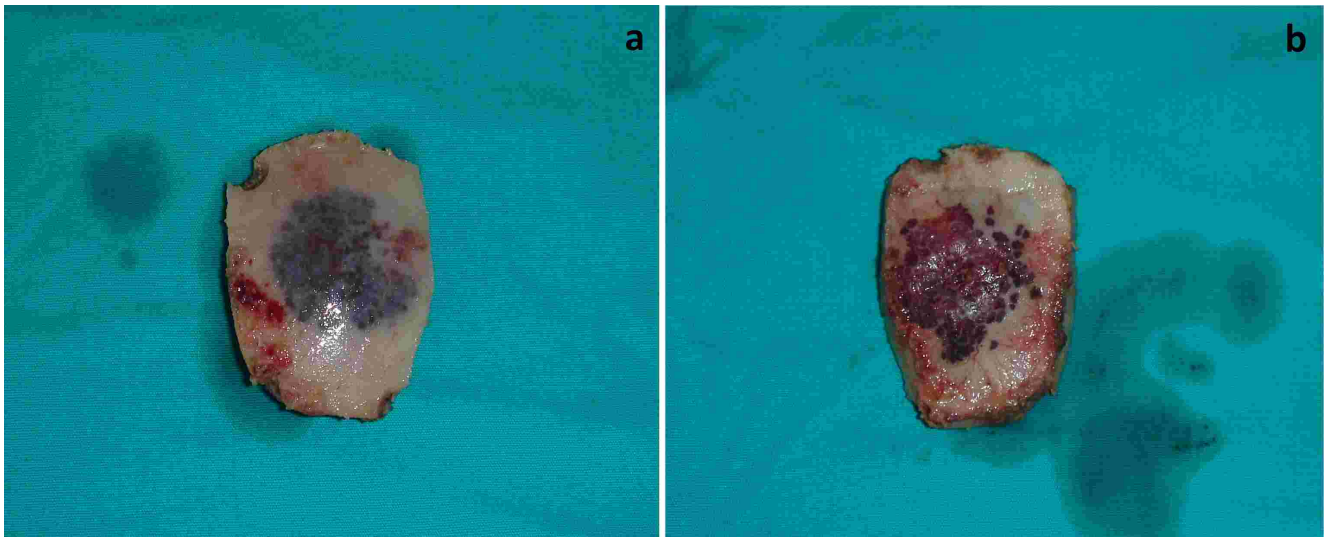


Figure 4. a) On gross examination, specimen showing outer parietal bone with microcystic spaces filled with blood. b) On gross examination, specimen showing inner parietal bone with microcystic spaces filled with blood

fibrous histiocytoma, osteoblastoma, and osteosarcoma [3]. A cranial ABC usually presents as an enlarging mass that can progress rapidly and may cause gross neurological symptoms depending on the site of the lesion in the skull. Cranial ABC can present as ptosis [4], exophthalmos [5], loss of vision [6], cranial nevre palsies [7], symptoms of raised intracranial pressure [7], seizures [1], cerebellar signs [8].

Radiological and neuroimaging appearances are often diagnostic. Plain radiographs of cranial ABC demonstrates osseous expansion with involvement of the inner and outer tables and intracranial extension. Axial CT scans of ABC reveal well-demarcated, multiloculated, osteolytic lesions. When the patient is motionless for a few minutes, fluid-fluid levels are sometimes apparent on CT scans. MRI completely delineates the margin of the ABC

as a rim of low signal intensity, and demostrates fluid-fluid levels, and easily depicts the internal septa [9].

Aneurysmal bone cysts usually exhibit symmetrical expansion, involve both the inner and outer tables of the skull, and always show intracranial extension. Individual cysts filled with unclotted liquid blood and blood-tinged serous fluid are seen in gross pathological evaluation of an ABC [10]. Microscopically, ABCs appear as blood-filled cavernous spaces lined with endothelial cells. The cysts are separated by fibrous septa containing spindle cells, multinucleated giant cells and possibly osteoid tissue.

There are different treatment options for ABCs including excision, curettage, cryotherapy(11), aspiration and drainage [12], arterial embolization [13], injection sclerotherapy [1], radionuclide ablation (14) , or radiotherapy. Radiotherapy alone has recently fallen out of favor due to the risk of postirradiation sarcoma [15].The treatment of choice is complete surgical excision. The recurrence rate of cranial ABCs is very low [16]. The recurrence rate is related to the age of the patient, size of the lesion, the presence of mitosis. The incompleteness of the resection is the most important factor causing recurrence [17], and in the cranium, there is difficulty in that it is often impossible to reach and excise the lesion completely. This is especially true if the lesion is located in the skull base, for example in the roof and/or the medial and lateral walls of the orbit, the paranasal sinuses, and the petrous temporal bone. In these partially excised or intralesionally curetted cases, adjunctive therapy such as preoperative embolization or postoperative cryotherapy or radiotherapy should be considered [18]. In some surgically difficult cases, a simple drainage procedure to relieve the pressure may suffice [12].

Conclusion

We report a rare case of parietal aneurysmal bone cyst in a young girl. We emphasize that aneurysmal bone cysts are benign tumors that cause symptoms by local compression and severe cosmetic deformities requiring resection. The treatment modality of ABC is total excision.

References

[1] Chartrand-Lefebvre C, Dubois J, Roy D, Mercier C, Raymond J. Direct intraoperative sclerotherapy of an aneurysmal bone cyst of the sphenoid. AJNR Am J Neuroradiol. 1996;17:870-2.
[2] El Deeb M, Sedano HO, Waite DE. Aneurysmal bone cyst of the jaws. Report of a case associated with fibrous dysplasia and review of the literature. Int J Oral Surg. 1980;9:301-11.
[3] Lichtenstein L. Aneurysmal bone cyst. A pathological entity commonly mistaken for giant-cell tumor and occasionally for haemangioma and osteogenic sarcoma. Cancer. 1950;3:279-89.
[4] Cataltepe O, Inci S, Ozcan OE, Saglam S, Erbengi A. Aneurysmal bone cyst of the frontal bone. Surg Neurol. 1990;33:391-4.
[5] Hunter JV, Yokoyama C, Moseley IF, Wright JE. Aneurysmal bone cyst of the sphenoid with orbital involvement. Br J Ophthalmol. 1990;74:505-8.
[6] Yee RD, Cogan DG, Thorp TR, Schut L. Optic nerve compression due to aneurysmal bone cyst. Arch Ophthalmol. 1977;95:2176-9.
[7] Banna M, Bradley WG, Kalbag RM, Tomlinson BE. Occipital bone cyst causing lower cranial nerve palsies. Can J Neurol Sci. 1974;1:206-9.
[8] Luccarelli G, Fornari M, Savoiardo M. Angiography and computerized tomography in the diagnosis of aneurysmal bone cyst of the skull: case report. J Neurosurg. 1980;53:113-6.
[9] Lin SP, Fang YC, Chu DC, Chang YC, Hsu CI. Characteristics of cranial aneurysmal bone cyst on computed tomography and magnetic resonance imaging. J Formos Med Assoc. 2007;106:255-9.
[10] Som PM, Schatz CJ, Flaum EG, Lanman TH. Aneurysmal bone cyst of the paranasal sinuses associated with fibrous dysplasia: CT and MR findings. J Comput Assist Tomogr. 1991;15:513-5.
[11] Schreuder HW, Veth RP, Pruszczynski M, Lemmens JA, Koops HS, Molenaar WM. Aneurysmal bone cysts treated by curettage, cryotherapy and bone grafting. J Bone Joint Surg Br. 1997;79:20-5.
[12] Gan YC, Mathew B, Salvage D, Crooks D. Aneurysmal bone cyst of the sphenoid sinus. Br J Neurosurg. 2001;15:51-4.
[13] Green JA, Bellemore MC, Marsden FW. Embolization in the treatment of aneurysmal bone cysts. J Pediatr Orthop. 1997;17: 440-3.
[14] Bush CH, Drane WE. Treatment of an aneurysmal bone cyst of the spine by radionuclide ablation. AJNR Am J Neuroradiol. 2000;21:592-4.
[15] Sabanas AO, Dahlin DC, Childs DS Jr, Ivins JC. Postradiation sarcoma of bone. Cancer. 1956;9:528-42.
[16] Gan YC, Hockley AD. Aneurysmal bone cysts of the cranium in children. Report of three cases and brief review of the literature. J Neurosurg. 2007;106:401-6.
[17] Ruiter DJ, van Rijssel TG, van der Velde EA. Aneurysmal bone cysts: a clinicopathological study of 105 cases. Cancer. 1977;39: 2231-9.
[18] de Kleuver M, van der Heul RO, Veraart BE. Aneurysmal bone cyst of the spine: 31 cases and the importance of the surgical approach. J Pediatr Orthop B. 1998;7:286-92.

The European Research Journal

Case Report

http://www.eurj.org

e-ISSN: 2149-3189

DOI: 10.18621/eurj.2015.1.2.85

Hair loss due to aripipirazole use: a case report

Yelda Yenilmez Bilgin[1], Ibrahim Yagci[1], Serhat Tunc[1], Murat Ilhan Atagün[2]

[1]*Department of Psychiatry, Kafkas Unýversity Medical School, Kars, Turkey*
[2]*Department of Psychiatry, Yildirim Beyazit University Medical School, Ankara, Turkey*

ABSTRACT

Hair loss is one of the side effects that can be seen after medical treatments. Hair loss due to medications is a diffuse state that does not leave scars and usually reversible with stopping the treatment. Aripipirazole is an atypicalantipyschotic drug, which also has antidepressant effects. Aripipirazole has a partial agonistic effect on dopamine D2 receptors and serotonin 5-HT1A receptors which differs from other atypic antipyschotic drugs. It is used in several pyschiatric disorders including schizophrenia, bipolar disorders, major depressive disorder and anxiety disorders. This report aims to present a case with hair loss due to aripipirazole use that is reversed back right after stopping the treatment. Since other psychotropic medications may also stimulate hair loss, it is possible to speculate that this side effect is a class effect of medications. However, further studies are needed to understand exact mechanisms of hair loss due to psychotropic medications.

Eur Res J 2015;1(2):85-87

Keywords: Aripiprazole, hair loss, side effects, antipsychotics

Introduction

Benign dermatological side effects may be seen during psychotropic medication use, and these side effects can be treated easily. The incidence of dermatological side effects due to psychotropic medication use is 0.1% [1]. When the incidence of skin reactions is reviewed by drug classes, the following rates are found: mood stabilizers 0.22%, tricyclic antidepressants 0.07%, serotonin reuptake inhibitors 0.05%, and atypical antipsychotics 0.03% [2]. The most accused drugs are mood stabilizers valproic acid and lithium [3]. Though at a lower rate, tricyclic antidepressants, olanzapine, risperidone, quetiapine, clonazepam and buspirone and SSRI's may also cause this side effect [4,5].

Aripiprazole is a new generation of antipsychotic that has a partial agonist effect on dopamine D2 receptors, and thus causes side effects less frequently than other antipsychotic medications [6]. Its major side effects are reportedly tremors, akathisia, headache, nausea and vomiting [7]. In this report we present a case with hair loss that appeared following the initiation of aripiprazol treatment and terminated right after ceasing the treatment.

Address for correspondence:
Yelda Yenilmez Bilgin, MD., Department of Child and Adolescent Psychiatry, Kafkas Unýversity Medical Faculty, Kars, Turkey
Email: dryelda2000@yahoo.com
Received: 15.04.2015; Accepted:16.06.2015: Published Online: 04.07.2015

Case report

The patient was a 30-year-old married female, who was an officer with a university degree. She visited our outpatient clinic with a complaint of repeated thoughts about doing her religious ablutions over and over again, suspecting the existence of god and saying bad things. Her history revealed that her religious obsessions started 3 months ago and caused decreased functionality. In the mental status examination it was observed that general appearance and self-care was good. She was fully oriented, and the quantity and speed of speech was normal. Memory and other cognitive functions were good. There was no psychomotor abnormality. Affect was appropriate and mood was dysphoric. Thought content contained religious obsessions. No delusions or hallucinations were detected. Her judgment was normal, and her insight was intact. The patient had no history of chronic disease, surgery, alcohol-substance or drug use. The patient was diagnosed with Obsessive-Compulsive disorder with depressive disorder according to DSM-V-R [8]. She had been using venlafaxine 225 mg/day for the treatment depression for 5 years, and aripiprazole 5 mg/day was added to her treatment. At her initial presentation, the total score of Yale Brown Obsessive-Compulsive Scale (YBOCS) [9,10] was found as 41. However, in the first month of the treatment the patient exhibited massive hair loss in the following weeks of aripiprazole treatment. The patient was referred to the dermatology ward to rule out possible organic aetiologies. 2 weeks later hair loss increasingly continued. A hair count test [11] revealed that there is a pathological hair loss. The dermatology consultation reported that no pathology was found to explain the hair loss. Because aripiprazole treatment was started recently, it was thought aripiprazole might be triggering the hair loss and the medication was discontinued. The patient scored 9 on the Naranjo adverse drug reaction probability scale [12], which assesses adverse drug reactions. The patient, whose obsessive symptoms decreased (a YBOCS score of 29 in the 2nd month), continued to be treated with venlafaxine 225 mg/day. On the follow-up examinations, it was observed that the complaint of hair loss alleviated 1 month later and returned to normal 3 months later.

Discussion

It is hard to decide whether or not hair loss is a side effect associated with drug use, and there is no specific method to confirm the diagnosis. Two criteria are recommended to confirm the relationship between drug use and hair loss [13]. First one is decreasing hair loss upon termination of the drug and increasing hair loss when the same drug is started again. And the second one is the absence of another systemic disease that may cause hair loss. For patients presenting with hair loss, thyroid function tests; serum iron, serum iron binding capacity and ferritin for iron deficiency anaemia; and if virilisation findings such as acne and hirsutism is present, endocrine tests including androgen hormones should be requested. [14]. Because our patient had no virilisation findings at the time of her dermatologic examination, endocrine tests were not requested, and other tests results (hemogram, iron, iron binding capacity, ferritin, free T3, free T4, TSH, vit B12, folate) were in normal ranges; no cause of disease was found to explain the hair loss.

Because there was a temporal relationship between the beginning and ceasing the aripiprazole treatment and hair loss, andother possible aetiologic causes were ruled out, the complaint of hair loss is considered to be a side effect associated with drug use in the case. Drug-induced alopecia appears a few months after taking the drug and is generally in the form of telogen hair loss and returns to normal 3-5 months after the drug is discontinued [15]. The exact mechanism of hair loss associated with psychotropic medications is yet to be clarified. The effect of these drugs on the hair is not limited to hair loss. They may allegedly change the structure and colour of the hair [16]. The fact that aripiprazole, as other psychotropic drugs [17,18], causes hair loss makes us consider that this condition is a class effect for psychotropic drugs. With its area of usage of growing, its use in the treatment has become widespread. Its varying efficacy profile required special efforts to define its place in psychopharmacology. For this reason, identifying its similar and common aspects with other psychotropics is important.

Conflict of interest

No authors have any financial or other conflict of interest in regard to the present work.

References

[1] Svensson CK, Cowen EW, Gaspari AA. Cutaneous drug reactions. Pharmacol Rev. 2001;53(3):357-79.
[2] Lange-Asschenfeldt C, Grohmann R, Lange-Asschenfeldt B, Engel RR, Rüther E, Cordes J. Cutaneous adverse reactions to psychotropic drugs: data from a multicenter surveillance program. J Clin Psychiatry. 2009;70(9):1258-65.
[3] Kuloglu M, Korkmaz S, Kilic N, Saglam S, Gurok MG, Atmaca M. Olanzapine induced hair loss: A case report. Klinik Psikofarmakoloji Bülteni. 2012;22:362-5.
[4] Uzun O, Cansever A, Ozgen F. Hair loss due to sertraline use: a case report. Bull Clin Psychopharmacol. 2003;13:27-9.
[5] McLean RM, Harrison-Woolrych M. Alopecia associated with quetiapine. Int Clin Psychopharmacol. 2007;22:117-9.
[6] Worthington JJ 3rd, Kinrys G, Wygant LE, Pollack MH. Aripiprazole as an augmentor of selective serotonin reuptake inhibitors in depression and anxiety disorder patients. Int Clin Psychopharmacol. 2005; 20: 9-11.
[7] Naber D, Lambert M. Aripiprazole: a new atypical antipsychotic with a different pharmacological mechanism. Prog NeuroPsychopharmacol Biol Psychiatry. 2004;28(8):1213-19.
[8] American Psychiatric Association. Desk Reference to the Diagnostic Criteria From DSM-5, Arlington, VA, American Psychiatric Publishing. 2013.
[9] Goodman WK, Price LH, Rasmussen SA, Mazure C, Fleischmann RL, Hill CL et al. The Yale-Brown Obsessive Compulsive Scale, I: Development, use and reliability. Arch Gen Psychiatry. 1989;46:1006-11.
[10] Karamustafalioglu KO, Ucisik AM, Ulusoy M, Erkmen H. Yale-Brown obsesyon-kompulsiyon derecelendirme olcegi'nin gecerlilik ve guvenilirlik calismasi. Bursa: Savas Ofset.1993.
[11] Olsen EA. Clinical tools for assesing hair loss. In: Olsen EA, editor. Disorders of Hair Growth Diagnosis and Treatment. 1st ed. New York: McGraw-Hill. 1994;59-69.
[12] Naranjo CA, Busto U, Sellers EM, Sandor P, Ruiz L, Roberts EA et al. A method for estimating the probability of adverse drug reactions. Clin Pharmacol Ther. 1981;30:239-45.
[13] Fiedler VC, Hafeez A. Diffuse alopecia: Telogen hair loss. In: Olsen EA, editor. Disorders of Hair Growth Diagnosis and Treatment. 1st ed. New York: McGraw-Hill. 1994;241-55.
[14] Shapiro J. Clinical practice. Hair loss in women. N Engl J Med. 2007;357(16):1620-30.
[15] Blankenship ML. Drugs and alopecia. Australas J Dermatol. 1983;24:100-4.
[16] Brodin M. Drug-related alopecia. Dermatol Clin. 1987;5(3):571-9.
[17] Product Monograph, Aripipirazole. Bristol-Myers Squibb Canada Montreal, Canada.2013. http://www. bmscanada.ca/static/products/en/pm_pdf/ ABILIFY_ EN_ PM.pdf. Accessed 29.03.2015.
[18] Drug Informer. Aripiprazole related alopecia.2015. http://www.druginformer.com/search/side_effect_details/aripiprazole/alopecia.html. Accessed 29.03.2015.