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Contents

Original Article
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A Comparison of The Modified Sad Persons Scale with Psychiatric Recommendations for Deciding On Hospitalization İn Patients Admitted To Ed Due To Suicide

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Abstract

Background: There are scales to decide hospitalization or follow up in patients presenting to the emergency department after suicide attempt. Modified Sad Persons scale (MSPS) is the scaling system for adult suicide generated using the initials of 10 major demographic risk factor in the literature. The aim of our study is to investigate the reliability of the MSPS patients who are evaluated in the emergency department after suicide attempt for deciding admission or discharging of patients in our population.

Materials and methods: Patients admitted to our emergency department with suicide attempts was evaluated by MSPS. All patients were evaluated by MSPS also consulted to a psychiatrist concurrently. MSPS suggestions are compared with psychiatry decisions. All data were inputted into SPSS analyzed statistically.

Result: There were 205 patients totaly and 147of them were female. Psychiatrics decide hospitalization for 95% of patients MSPS score higher than 8. 131 patients MSPS score less than 6 are evaluated by psyhiatrics and 5 (3.8%) of them were decided for hospitalization. MSPS has sensitivity 90%, specificity 84%, positive predictive value 67%, negative predictive value 96% for deciding hospitalization when compared with psychiatric evaluation.

Conclusion: Giving the decision of discharging or hospitalization of patients presenting in the emergency department after suicide attempt is a serious dilemma for doctors working in the emergency department. There is a need for objective evaluation of such patients of in the emergency department. Although MSPS does not meet all the requirements but can be used in the emergency department.

Keywords: Suicide, Modified Sadpersons Scale, Emergency Service

Introduction

Suicides constitute 1.4% of total mortality and 15% of injury-related mortalities all over the world. Approximately 700,000 suicide-related deaths occur each year. The rate of suicide was calculated as 9 per 100000 in 2019 (1). It has increased by 60% in the last 50 years (2).

There is no enough data on the rates of suicide in our country, however, the data determined are very scarce compared to the rest of the world. According to the data of the State Institute of Statistics, the rate of suicide in the general population is 2-3 per 100,000 (3). It is believed that these rates will increase if unofficial data are added. Suicide is considered as the 10th cause of mortality according to official data in our country (4).

Thousands of patients who have attempted suicide present to emergency departments every day. Most of the patients who present with suicide attempts need psychiatric follow-up and treatment as well as medical treatment. In emergency departments, emergency physicians decide on the discharge or follow-up of patients who present with suicide attempts. Patients whose treatment and follow-up in the emergency department are completed should be referred to a psychiatrist for psychiatric assessment. Emergency physicians need various scales to quickly assess the patients and detect the patient who should not be discharged home, due to the intensity of the emergency department and the difficulty in reaching psychiatrists in all hospitals.

The modified SAD PERSONS scale (Table 1) evaluates the risk of attempting suicide of patients with suicidal attempts or thoughts (5). Modified "SAD PERSONS" Scale (MSP): This assessment tool consists of 10 items in the "SAD PERSONS" acrostic. Positive responses to the items of depression or hopelessness, impairment in reality assessment, organized or serious suicide attempt, suicidal intention in the future, other items (male gender, < 19 or > 45 years old, history of previous suicide attempt or psychiatric treatment, Positive responses (using excessive amounts of alcohol or substance, addiction or increased frequency of recent use, being separated, divorced or widowed, lack of social support) correspond to 1 point. A score of 6 or higher on the MPSS is considered moderate risk (5).

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Table 1: The Modified Sad Persons Scale

Faktor	Points
S = Sex (male)	1
A = Age (<19 or >45 years)	1
D = Depression or hopelessness	2
P = Previous suicide attempts or psyhiatric care	1
E = Excessive alcohol or drug use	1
R = Rational thinking loss	2
S = Separated, divorced, or widowed	1
O = Organized or serious attempt	2
N = No social supports	1
S = Stated future intent	2

In our study, we compared the recommendation of the MSPS with the psychiatrist's decision and investigated the usability of the MSPS in places where access to a psychiatrist is difficult.

Material And Method

This study was conducted on the patients who presented to İstanbul Dr. Lütfi Kırdar Kartal Training and Research Hospital Emergency Department with suicide attempts. The study was conducted with the approval of the local ethics committee dated 05.02.2013 and numbered 5 according to the Declaration of Helsinki (World Medical Association Declaration of Helsinki http://www.wma.net/en/30/publications/10policies/b3/index.html).

Inclusion Criteria for the Study: All patients over the age of 14 who presented with suicide attempts and gave consent were included.

Exclusion Criteria for the Study: Patients in toxic state and severely psychotic patients who were under the age of 14, who did not give consent, and we thought would not be able to get proper answers were not included in the study.

All emergency medicine assistants and specialists were provided with training on the use of MSPS. Patients presenting with suicide attempts were scored with MSPS after their medical treatment was completed, and they were consulted to a psychiatrist. Psychiatrists were not informed about the MSPS score and the study. In the study, we investigated the validity and reliability of the MSPS in our population by comparing the recommendations of the MSPS with the recommendations of psychiatrists.

Statistics

Patients' MSPS scores, the recommendations of the MSPS and the recommendations of the psychiatry were entered into the SPSS V22 (IBM). The sensitivity, specificity, positive predictive value, and negative predictive value of the MSPS were calculated. A p-value of <0.05 was considered significant. The factors of gender, alcohol use, and presence of fatal condition were compared with the hospitalization decisions of psychiatrists using the chi-square test. Age, the number of tablets, duration of admission to the emergency department, and the number of attempts were compared with the hospitalization decisions using the Mann Whitney U test.

Results

A total of 205 patients admitted to the emergency department due to suicide were included in the study. Of these patients, 58 (28.3%) were male and 147 (71.7%) were female. Their distribution according to the recommendations of the MSPS is presented in Figure-1, and the comparison of the recommendations of the MSPS with psychiatrist's decisions are presented in Figure-2. 131 of the patients (63.9%) had a score less than 6 points and were recommended to be followed in the psychiatry outpatient clinic. The patients in this group needed to be consulted to a psychiatrist in the emergency department. 20 (9.3%) of the patients were in the group with a very high risk of suicide and were estimated to be highly likely to be hospitalized after psychiatric evaluation.

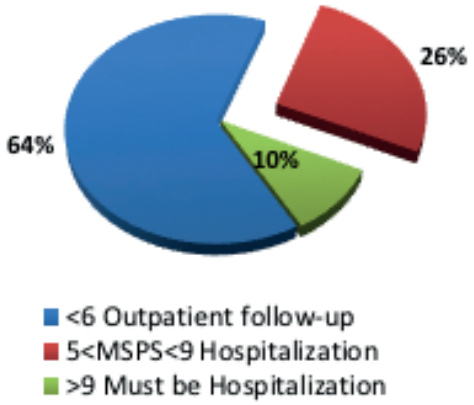

Figure 1: Distribution of Patients Presenting to the Emergency Department due to Suicide according to the Recommendations of the MSPS

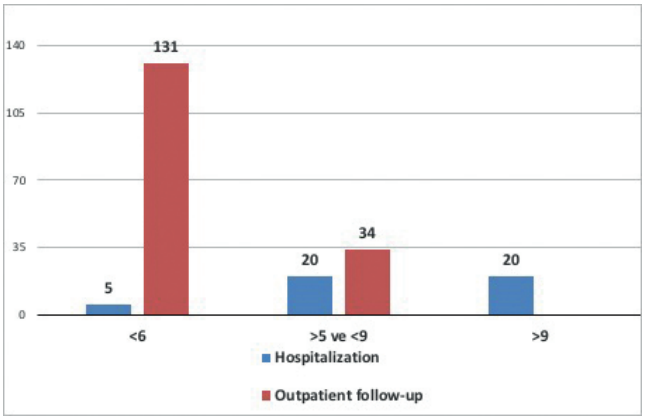

Figure 2: Comparison of the recommendations of the MSPS with the Decisions of the Psychiatry

Table 2: Comparison of the recommendations of the MSPS with the Psychiatrist's Recommendations

		Psychiatrist's Recommendation		Total
		Outpatient Follow-up	Hospitalization	
RECOMMENDATION of the MSPS	**Outpatient Follow-up**	126	5	131
	Hospitalization	24	50	74
Total		150	55	205
Kappa value	**,675**	**P value**	**,000**	

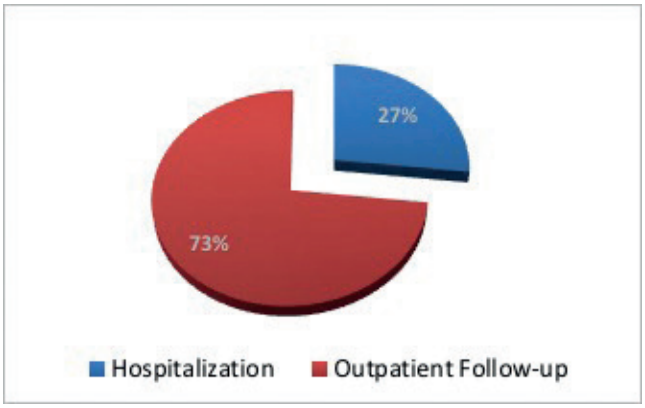

Figure 3: Rates of the Recommendations of Psychiatrists

After the evaluation of 205 patients in our study by psychiatrists, 55 (26.8%) patients were hospitalized, and outpatient follow-up was recommended for 150 (73.2%) patients. Their rates are presented in Figure-3.

In our study, we compared the recommendations of the MSPS with the recommendations of psychiatrists, and they are presented in Table 2. MSPS recommended outpatient follow-up for 131 patients and hospitalization for 74 patients. Psychiatrists recommended outpatient follow-up for 150 patients and hospitalization for 55 patients. MSPS recommended outpatient follow-up for 5 patients for whom hospitalization was recommended by the psychiatrists. MSPS recommended hospitalization for 24 patients for whom outpatient follow-up was recommended by the psychiatrists.

In the kappa analysis, the kappa value and the p value were found to be 0.675 and $p<0.001$, respectively. The recommendations of the psychiatry and the recommendations of the MSPS were found to be significantly similar.

In the statistical analyses of our study, while the sensitivity was found to be 90%, specificity was 84%, positive predictive value was 67% and negative predictive value was 96%, which are presented in Table-3.

Table 3: Statistical Analyses

Sensitivity	90,91%
Specificity	84,00%
Positive Predictive Value	67,60%
Negative Predictive Value	96,18%

The negative predictive value of our study was found to be 96.18%.

Discussion

The number of patients presenting to emergency departments with suicide attempts is now reaching significant numbers. It is a serious dilemma for physicians working in the emergency department to decide on the hospitalization or discharge patients admitted to the emergency department after a suicide attempt. No one can certainly predict that a patient will attempt suicide again. These patients are consulted to psychiatrists (6, 7).

Most of the patients with suicide attempts present when psychiatric consultation is not easily accessible in the evening or on weekends (8, 9). Many of them do not repeat the suicide attempt again. It is not cost-effective to consult all patients with psychiatrists. Hospitalization of all patients would not be a correct approach (7).

After the SAD PERSONS scale came into use, Hockberger et al. reviewed the previous studies and then conducted a new study and modified the SAD PERSONS scale. They added four more features related to suicide using the same acrostic. In the study, they compared the views of non-psychiatric emergency physicians and the psychiatrists, and repeated the scoring as a result of the statistical analysis (5). It was found to be more clinically significant than Paterson's SAD PERSONS scale study. In the study of Paterson, the common views of medical faculty students and three psychiatrists was compared (10). In the study of Hockberger, 100 patients who presented to the emergency department with suicide attempts or thoughts were evaluated by non-psychiatrists and compared with the views of independent psychiatrists (5). A total of 14 points can be obtained. According to the results of the study, while those who scored 5 and below could be referred to psychiatry after discharge, while it was recommended that those who scored 6 and above should immediately have a psychiatry consultation and not be discharged immediately because hospitalization may be required. In the study, only three people with a score of 9 and above were discharged after psychiatric evaluation, and they were described by psychiatrists as chronic suicide imitators. MSPS has found wide coverage in the emergency medicine community

and has taken its place in the basic reference resources for emergency medicine (5). Compared to other scales, it has a special place for emergency medicine because it is easy, practical and fast. The most commonly used and known scale is MSPS (11). In a study conducted by Cara Katz et al., whether the MSPS could identify the future risk of suicide was investigated in patients with depression and anxiety, and it was found to be insufficient in determining the risk of suicide (11). Although MSPS does not meet all the requirements, it is a scale that can be used in the emergency department.

In their study comparing the suicide scales among themselves, Cochrane-Brink et al. compared six different scales. When MSPS was compared with the psychiatric decisions in 55 patients, the sensitivity was 100%, the specificity was 60%, the negative predictive value was 95%, and the positive predictive value was 45% (12).

Similar results to the literature were also found in our study. The hospitalization recommendation of the MSPS and the hospitalization recommendation of the psychiatrist were compared. The sensitivity was 90%, the specificity was 84%, the negative predictive value was 96% and the positive predictive value was 67%. It is a useful scale to distinguish patients who can be discharged from the emergency department.

The most important difference between the results of our study and the original study of MSPS is that the positive predictive value was found to be relatively low. It can be considered that the lower ability to identify patients who need hospitalization may be due to reasons such as the fact that psychiatry beds are mostly reserved for major depression and psychotic patients in our country, social support and family ties are stronger compared to the American society, and the number of beds is insufficient.

In our study, it is aimed to ensure that patients who present to emergency departments, where access to a psychiatrist is difficult, are directed correctly and mortality and morbidity are minimized. Our psychiatry specialists working in outpatient clinics during working hours consulted patients to two separate psychiatry clinics close to our hospital under shift conditions while evaluating the patients.

The psychiatric condition of the patient is not always the determining factor in the hospitalization decisions of psychiatrists. The number of empty beds in the hospital and the different schools of psychiatrists also affect the hospitalization decisions. When the patients who are decided to be hospitalized are evaluated by a second psychiatrist, hospitalization may not be decided, which reduces the significance of such studies and may reveal the differences between studies.

The limitation of our study was that the question "*Is there a difference between emergency physicians in filling out the MSPS scale*?" was not asked. In the study, depression and hopelessness item was a concrete item and also required psychiatric assessment skills. It is not easily understood in every patient. When different physicians evaluate the same patient with further studies, it can be checked whether the same score is obtained. In the literature, there are studies evaluating the difference between the scores of MSPS psychiatrists and non-psychiatrists (5). In the literature, there is no study evaluating the difference between the use and scoring of MSPS among non-psychiatrists. It can be discussed in future studies.

According to our study results, MSPS is a scale that can be used safely in the evaluation of patients presenting with a suicide attempt and in distinguishing patients who should not be hospitalized in our country.

Conclusions

Suicide thoughts and behaviors will always remain a mystery. There is no definitive determinant that will determine whether the patients presenting with a suicide attempt will repeat the suicide attempt. No physician or scale can give a definite and clear answer at this point. Emergency physicians should focus on this social problem and develop themselves in this regard.

Although MSPS is a relatively old scale, it is still up-to-date. We believe that the scale can be more useful especially in areas where it is difficult to reach psychiatry clinics and psychiatrists in our country.

MSPS may pave the way for psychiatric evaluations, that emergency physicians generally avoid, due to its easy and usefulness and may shed light on new studies for the future.

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Original Article
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Effectiveness of Combination of Pharmacological Treatment and Endoscopic Band Ligation in Active Esophageal Varicose Bleeding

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Abstract

Background: In this study, we evaluated the efficiency of somatostatin and endoscopic band ligation in the treatment of esophageal varicose bleeding.

Material and methods: Between January 01, 2021, and December 31, 2022, in Ankara Atatürk Sanatorium Training and Research Hospital with the diagnosis of liver cirrhosis and/or newly diagnosed esophageal varices bleeding findings (hematemesis-melena-hematochezia, at least 2 g/dL decrease in Hgb level during follow-up) patients who admitted to the service were evaluated.

Results: A total of 102 patients 58 (56.8%) of were male, 44 (43.2%) were female. While active esophageal variceal bleeding was observed in 25 (24.5%) patients, active variceal bleeding was not observed in 67 patients (65.6%) although there were signs of portal hypertension (esophagus-cardia-fundus varices or portal gastropathy)

Conclusion: In this study, we found that starting pharmacological treatment as soon as the preliminary diagnosis is made and followed by endoscopic treatment with endoscopic band ligation within 12 hours is an effective and safe treatment approach for patients with suspected esophageal variceal bleeding.

Keywords: Esophageal Varicose Bleeding, Portal Hypertension, Somatostatin

Introduction

Acute gastrointestinal system bleeding in cirrhotic patients is one of the emergencies of gastroenterology that requires rapid and careful intervention. For this reason, patients who are thought to have esophageal variceal bleeding should be referred to a center that is adequately equipped for follow-up and treatment. There are studies supporting that current approaches to the treatment of esophageal variceal bleeding have a positive effect on life expectancy. Volume replacement is an important condition in the general approach to esophageal variceal bleeding (1). It is recommended to maintain hemodynamic stability and keep the hemoglobin level at approximately 8 g/dl (2). Additionally, it is thought that prophylactic antibiotic usage in gastrointestinal system bleeding of cirrhotic patients reduces the risk of bacterial infection and has a positive effect on life expectancy. In addition to these approaches, there are also specific measures for the control of esophageal variceal bleeding and the prevention of early recurrence of this bleeding (3). Pharmacological treatment for esophageal variceal bleeding can be started as soon as variceal bleeding is considered, even before upper gastrointestinal system endoscopy. Similar efficacy was demonstrated in a meta-analysis of 15 studies comparing emergency sclerotherapy and pharmacological therapy (vasopressin±nitroglycerin, terlipressin, somatostatin, and octreotide). In the treatment of esophageal variceal bleeding, the combination of pharmacological and endoscopic treatment seems to be the most appropriate option (4). A meta-analysis of 8 studies compared the combination of endoscopic treatment [(sclerotherapy or endoscopic band ligation (EBL)] with endoscopic, pharmacological treatment) for acute variceal bleeding. A combination of endoscopic and pharmacological treatment was found superior in terms of bleeding control and risk of recurrence (5).

In this study, we evaluated the efficacy of combination of pharmacological and endoscopic band ligation in patients who admitted to the hospital with esophageal variceal bleeding.

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Material and Method

Between January 01, 2021 and December 31, 2022, in Ankara Atatürk Sanatorium Training and Research Hospital with the diagnosis of liver cirrhosis and/or newly diagnosed esophageal varices bleeding findings (hematemesis-melena-hematochezia, at least 2 g/dL decrease in Hgb level during follow-up) patients who admitted to the service were evaluated. Ethics committee approval was obtained for this study. The International Declaration of Helsinki carried out the study. After the preliminary diagnosis of esophageal variceal bleeding was made, somatostatin treatment (250 ug IV bolus followed by 250 ug/hour continuous infusion) was started in the emergency room. Upper GI endoscopy was performed in all of the patients within 12 hours, and endoscopic band ligation was performed in patients with active bleeding (leaking or gushing bleeding) and varicose bleeding focus and somatostatin treatment was continued for at least three days. Although active bleeding was not detected in the endoscopic examination, patients with varicose veins with bleeding signs were treated with medical treatment and included in the varicose eradication program with endoscopic band ligation. Somatostatin treatment of the patients who did not detect active bleeding in the endoscopic examination was discontinued and followed for 48 hours. Patients with active bleeding who were followed up after endoscopic band ligation had a decrease in hemoglobin of 2 g/dL, hematemesis, melena, and hematochezia during their follow-up, and it was accepted as bleeding recurrence. In addition to medical treatment, patients who were thought to bleed again received endoscopic treatment after endoscopic band ligation and/or Sengstaken balloon tamponade. Patients who underwent endoscopy considering esophageal variceal bleeding but were found to have other causes of bleeding (gastric or duodenal ulcer, upper gastrointestinal system malignancy, etc.) were not included in the study. Demographic, laboratory, and treatment data of the patients were obtained from the hospital data processing database, and endoscopic data were obtained from the endoscopy laboratory records.

Statistical Review

SPSS 21.0 for statistical analysis Windows program used. Descriptive statistical methods(mean, standard)were used.

Results

Upper gastrointestinal system endoscopy was performed within 12 hours in 102 patients who were evaluated in the emergency department with the preliminary diagnosis of acute variceal bleeding. The mean age of 102 patients who were considered to have variceal bleeding was 54.3 (min 22, max 88). 58 (56.8%) of the patients were male, 44 (43.2%) were female. While active esophageal variceal bleeding was observed in 25 (24.5%) patients, active variceal bleeding was not observed in 67 patients (65.6%) although there were signs of portal hypertension (esophagus-cardia-fundus varices or portal gastropathy). Other causes (duodenum, gastric ulcer) were found as the cause of bleeding in 10 (9.9%) patients. The mean age of 25 patients with bleeding was 61.2 (min 27, max 82) and 15 (60%) were male. Child Pugh score was A for 4 patients, B for 26 patients, and C for 11 patients. MELD Score was <9 for 14 patients, 10-19 for 22 patients, 20-29 for 5 patients(Table 1) In these patients, the mean Hgb value at admission was 8 mg/dl (± 3.2), Htc value was 24.6 (±9.5), Plt value was 115000 (min 35000 max 270000). 6 of the patients had alcoholic liver cirrhosis, 4 were HDV-related liver cirrhosis, 6 were HCV-related liver cirrhosis, 11 patients were cryptogenic, 1 patient was non-alcoholic steato hepatitis, 2 patients were autoimmune hepatitis, 3 patients were primary biliary cirrhosis. It was liver cirrhosis. One patient had extrahepatic portal hypertension. Since the endoscopic evaluation of the patients was during bleeding, varicose veins were not graded. Endoscopic band ligation was performed in all patients with active variceal bleeding. The average number of bands discarded during the procedures was 3.5 (min 1, max 7). Hemorrhage control was achieved with endoscopic band ligation in 24 (96%) of 25 patients with active variceal bleeding. With the combination of somatostatin and endoscopic band ligation, no recurrence of bleeding was detected in 22 patients (88%), and the patients were discharged on the 5th day after endoscopic and medical treatment. Recurrence of bleeding (Hgb decrease, melena, hematemesis) was detected in 3 (12%) of the patients. In 2 patients with recurrent bleeding, endoscopic band ligation was performed for the second time after Sengstaken balloon tamponade and the bleeding was controlled. However, 1 patient died despite all attempts.

Table 1:

Age	54,3 (min22, max 88)	
Gender	Female	Male
	58	44
Active Varicose Bleeding	25 Patients	
Not Observed Varicose Bleeding	67 Patients	
Other Causes of Bleeding	10 Patients	
CHİLD Score A	4 Patients	
CHİLD Score B	26 Patients	
CHİLD Score C	11 Patients	
MELD Score<9	14 Patients	
MELD Score 10-19	22 Patients	
MELD Score 20-29	5 Patients	

Conclusion

Esophageal variceal bleeding is an emergency situation that should be approached quickly and carefully due to its high mortality and morbidity. Close monitoring and careful volume replacement should be performed on patients. Pharmacological treatment (somatostatin and its analogs) should be initiated as soon as varicose bleeding is considered, an upper gastrointestinal system endoscopy should be performed within 12 hours, and treatment should be planned. In a meta-analysis evaluating 10 randomized controlled trials evaluating endoscopic treatment modalities, the following conclusion was reached. In a total of 404 patients, endoscopic band ligation was found to be significantly more effective than sclerotherapy in controlling active bleeding (total relative risk 0.53 and confidence interval 0.28-1.01) (6). In another study, it was suggested that endoscopic band ligation should be preferred in the endoscopic treatment of acute variceal bleeding and that sclerotherapy should be used in patients where endoscopic band ligation is not technically possible. The fact that pharmacological agents with few side effects can be used for up to 5 days provides the treatment opportunity for patients in this period when the risk of re-bleeding is highest(2).

In a randomized trial comparing somatostatin and sclerotherapy in active bleeding, bleeding control rate (83% vs 80%) and rebleeding rate (17% vs 25%) were found(7). The combination of pharmacological treatment and sclerotherapy was found superior to pharmacological treatment and somatostatin treatment alone in bleeding control and prevention of rebleeding(8).

Several studies have been conducted on the combination of endoscopic band ligation and pharmacological therapy, and combination therapy has been shown superior to endoscopic band ligation alone (5). In a study of 100 patients, the combination of endoscopic band ligation and octreotide was compared with endoscopic band ligation alone. In this study, bleeding control was achieved in 45 of 47 patients with the combination of endoscopic band ligation and octreotide, while bleeding control was achieved in 44 of 47 patients in the endoscopic band ligation group. In the same study, the rate of rebleeding was 9% in the combination group and 38% in the endoscopic band ligation group(9). In another study, the rate of achieving hemostasis with band ligation was reported as 86% (10). In our study, we started standard dose somatostatin treatment after admission of the patients. While the medical treatment was continuing, we performed endoscopic examination and endoscopic band ligation when necessary. We continued somatostatin treatment for at least 3 days after endoscopic band ligation. Similar to other studies, we achieved bleeding control in 95% of our patients with endoscopic band ligation, and we found a rebleeding rate of 11.7% with the combination of somatostatin and endoscopic band ligation.

In terms of procedural complications, ulceration, stricture formation, perforation, mediastinitis, aspiration and aspiration-related sepsis have been described in the literature. In one study, complication rates were found to be significantly lower in endoscopic band ligation than in sclerotherapy (22% vs. 2%) (9). We did not find any serious procedure-related complication (exacerbation of bleeding, perforation, aspiration) in our patients. In this study, we found that starting pharmacological treatment as soon as the preliminary diagnosis is made and followed by endoscopic treatment with endoscopic band ligation within 12 hours is an effective and safe treatment approach for patients with suspected esophageal variceal bleeding. Moreover, we think that the treatment and follow-up of patients with acute variceal bleeding should be done in centers where endoscopic treatment can be applied.

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Statement of Interest: No conflict of interest

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Original Article
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Evaluation of Post-Discharge Attitudes and Behaviors of Patients Affected by The COVİD-19 Pandemic

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Abstract

Objective: In our study, the changes in the post-discharge attitudes and behaviors of individuals affected by the disease at varying degrees during the COVID-19 pandemic were evaluated. This study, it was aimed to take the necessary precautions to keep our personal and social preparations for COVID-19, which will continue for many years, active and contribute to future studies.

Methods: Information was obtained by interviewing the individuals who agreed to participate in the study one over the phone within the scope of the pandemic period measures. "Sociodemographic Information Form" and "Personal and Social Impacts of the Pandemic Questionnaire" prepared by us were used to collect the research data. We grouped the patients diagnosed with Covid-19 as those who were hospitalized and those who were treated in isolation at home and compared the results.

Result: There were a total of 453 patients who applied to the Emergency Department between the dates of 03.2020 and 05.2020 and were diagnosed with COVID-19. A total of 353 of them were hospitalized, 44 of them were in the intensive care unit, and 100 patients were isolated at home. 35 patients died in the process. 125 of 453 patients diagnosed with COVID-19 were found suitable for the study. 57% of the patients were male, 44.8% were within the 18-30 age group, and 66% were non-hospitalized.

Conclusion: The COVID-19 pandemic has caused significant changes in social life, professional life, education, and health systems. In this process, which has led people to stock up on food and cleaning supplies (54.4%), 36% of the participants developed a desire to avoid social environments. 46% of the patients no longer use public transport due to the fear of infection. It was determined that 82.4% of the recovered patients apply to emergency services for control purposes without any reason. Keeping the health system busy due to anxiety that develops psychologically, healthy eating efforts (80.8%), desire to use drugs even when not feeling sick (52.8%), constantly feeling exhausted (40.8%), and disturbed sleep (51.2%) have developed. However, only 24% of the participants received psychological support.

Keywords: COVİD-19, Pandemic, Discharge, Attitudes, Behavior

Introduction

The coronavirus disease-19 (COVID-19), which originated in Wuhan in early December 2019, has become a new global public health crisis (1). COVID-19 is a viral disease that can affect every age group—from infants to the elderly—resulting in a wide spectrum of various clinical manifestations. The most common complications include pneumonia and acute respiratory distress syndrome. Fever, dry cough, muscle weakness, and chest pain are the most prevalent and typical symptoms of COVID-19 (2). Some people, especially those who had severe COVID-19, experience multiorgan effects or autoimmune conditions with symptoms lasting weeks, months, or even years after COVID-19 illness. Multi-organ effects can involve many body systems, including the heart, lungs, renal, skin, and brain (3). Even if individuals recover from a severe and life-threatening illness, they are at risk for post-traumatic stress disorder and depression. Therefore COVID-19, which has affected the whole world and turned into a global pandemic, is not just a respiratory disease. In our study, the changes in the post-discharge attitudes and behaviors of individuals affected by the disease at varying degrees during the COVID-19 pandemic were evaluated. This study, it was aimed to take the necessary precautions to keep our personal and social preparations for COVID-19, which will continue for many years, active and contribute to future studies (4,5).

Investigating the post-discharge attitudes and behaviors of those who have recovered from the COVID-19 pandemic can enable contingency planning about the measures to be taken in future pandemic situations. Our study is important in terms of ensuring that health workers, who are the main actors of the disaster plan implementer, evaluate the disease correctly during the pandemic. Establishing support groups for people and using strong communication ways during and after the pandemic can increase the motivation of people to act according to the rules as much as possible in case of new pandemics and disasters

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Methods

The research is in the type of prospective study, which is descriptive based on the general model. It was conducted by including patients the ages of 18 and over who were diagnosed with Covid-19 upon their admission to the Emergency Service between the dates of 03.2020 and 05.2020. Information was obtained by interviewing the individuals who agreed to participate in the study one on one the phone within the scope of the pandemic period measures (in the same month).”Sociodemographic Information Form” and “Personal and Social Impacts of the Pandemic Questionnaire” prepared by us were used to collect the research data. We grouped the patients diagnosed with Covid-19 (PCR positive) as those who were hospitalized and those who were treated in isolation at home and compared the results. The study was completed with a total of 125 patients when the data were incomplete, could not be communicated and those who did not want to be included in the study were excluded. In our study, two groups were formed: those who were hospitalized and those who were discharged from the emergency department (patients in isolation at home). Within the scope of the pandemic period measures, information was obtained by interviewing the people who agreed to participate in the study on the phone. Ethics Committee Approval was obtained from xxxx University Ethics Committee to conduct the research (Date: 17/06/2020 Decision No: 10/217).

Statistical analysis: The analysis of the data obtained as a result of the applied questionnaire was made in this section. To analyze the data, the questionnaires were first transferred to Excel and then to the IBM SPSS 25.0 program by making appropriate coding. In the analyses, frequency analyses of the demographic data of the participants were made. In the study, the demographic data of the participants and the questionnaire questions, and whether there was a statistically significant relationship between those who were non-hospitalized and those who were hospitalized were examined. The chi-squared test or Fisher’s exact test was used for testing differences in proportions between groups. The Wilcoxon rank-sum test was used for testing the hypotheses about differences in means between the groups. Two-sided p-values were reported for all statistical tests, a p-value below 0.05 was considered to be statistically significant.

There were a total of 453 patients who applied to the Emergency Department between the dates of 03.2020 and 05.2020 and were diagnosed with COVID-19. A total of 353 of them were hospitalized, 44 of them were in the intensive care unit, and 100 patients were isolated at home. 35 patients died in the process. The study was completed with a total of 125 patients and those with incomplete data, those who could not be communicated with, and those who did not want to be included in the study were excluded. 57% of the patients were male, 44.8% were within the 18-30 age group, and 66% were non-hospitalized (Table 1,2)

Table 1: Patient information and questions answered

		Hospitalize d n(%)	Non-Hospitalized n(%)	p-value
Gender	Female	41 (54.7)	27 (54)	0,1000
	Male	34 (45.3)	23 (46)	
Age	18-30	23 (30.7)	33 (66)	0,001
	31-45	23 (30.7)	11 (22)	
	46-65	24 (32)	5 (10)	
	66 ve Üzeri	5 (6.7)	1 (2)	
Additional Disease	Yes	61 (81.3)	48 (96)	0,033
	No	14 (18.7)	2 (4)	
Chronic Diseases	Hypertension	23 (63.9)	2 (50)	0,025
	Diabetes mellitus	11 (30.6)	2 (50)	
	Liver disease	2(5.6)	0 (0)	
Respiratory after recovery Have you had problems?	Yes	35 (46.7)	8 (16)	0.001
	No	40 (53,3)	42 (84,0)	
Have you had a circulation problem?	Yes	11 (14.7)	1 (2)	0.019
	No	64 (85.3)	49 (98)	
Do you feel less active than before?	Yes	25 (33.3)	6 (12)	0.013
	No	50 (66.7)	44 (88)	
	Normal	39 (52)	22 (44)	
Constant feeling of tiredness	Yes	37 (49.3)	14 (28)	0.028
	No	38 (50.7)	36 (72)	
Have you received psychological support?	Yes	26 (34.7)	4 (8)	0.001
	No	49 (65,3)	46 (92)	

Table 2: Questions asked to patients and comparison

Questions	p- value
Patients without respiratory problems after recovery were statistically significantly more non-hospitalized than participants with respiratory problems after recovery.	**0.001**
The non-hospitalization of those without circulatory problems was statistically significantly higher than those with circulatory problems.	**0.019**
There was no statistically significant relationship between exercising or not exercising and being non-hospitalized or hospitalized.	0.769
Those who did not feel less active than before were statistically significantly more likely to be non-hospitalized than those who felt less active than before.	**0.013**
There was no statistically significant relationship between their desire to stay away from people and being non-hospitalized or hospitalized.	0.970
There was no statistically significant relationship between preferring public transportation in transportation and being non-hospitalized or hospitalized.	0.634
There was no statistically significant relationship between the storage of food and cleaning materials and being non-hospitalized or hospitalized.	0.085
There was no statistically significant relationship between being excluded from the environment or not, and being non-hospitalized or hospitalized.	0.265
There was no statistically significant relationship between the expectation that everything will be okay or they think that everything will get worse, and their being non-hospitalized or hospitalized.	0.874
There was no statistically significant relationship between sleep patterns and being non-hospitalized or hospitalized.	0.488
There was no statistically significant relationship between the increase or lack of healthy eating effort and being non-hospitalized or hospitalized.	0.677
There was no statistically significant relationship between having or not focusing on their goals and being non-hospitalized or hospitalized.	0.066
Those who did not feel constantly tired were statistically significantly more likely to be non-hospitalized than those with constant tiredness.	**0.028**
The non-hospitalization of those who did not receive psychological support was statistically significantly higher than the participants who received psychological support.	**0.001**
There was no statistically significant relationship between using or not using drugs and being non-hospitalized or hospitalized.	0.442
There was no statistically significant relationship between the presence or absence of side effects related to corona drugs and whether they were hospitalized or non-hospitalized.	0.309
There was no statistically significant relationship between the side effects (skin flushing, bruising, rash and other) related to corona drugs and being non-hospitalized or hospitalized.	0.556
Those who did not return to the emergency department after discharge were statistically significantly more likely to be non-hospitalized than those who went back to the emergency department after discharge.	0.039
There was no statistically significant relationship between the reasons for applying to the emergency department (hypertension, weakness, shortness of breath, allergy, cough and fever) and being non-hospitalized or hospitalized.	0.318
There was no statistically significant relationship between being good or bad in their current situation and being non-hospitalized or hospitalized.	0.097
There was no statistically significant relationship between the duration of phone calls and their being non-hospitalized or hospitalized.	0.474

Results

Of the 125 participants, 68 (54.4%) were female and 57 (45.6%) were male. Patients participating in the study were 56 (44.8%) 18-30, 34 (27.2%) 31-45, 29 (23.2%) 46-65, and 6 (4.8%)) were 66 years old and above. Of 125 patients, 64 (51.2%) were married and 61 (48.8%) were single. 44 (35.2%) of the patients were primary school-middle school-high school graduates and 81 (64.8%) were university graduates. 109 (87.2%) of the patients did not have any additional disease and 16 (12.8%) had an additional disease. 25 (62.5%) of the patients had hypertension, 13 (32.5%) diabetes, and 2 (5.0%) liver disease. 50 (40.0%) of the patients stayed in the hospital for 1-10, 19 (15.2%) for 11-20, and 6 (4.8%) patients stayed in the hospital for 21 days or more. 50 (40.0%) of the patients did not stay in the hospital. There was no statistically significant relationship between the gender of the patients and they're being non-hospitalized or hospitalized ($p>0.05$). There is a statistically significant relationship between the ages of the patients and those who are non-hospitalized and hospitalized. ($p< 0.05$). The non-hospitalization of the participants in the 18-30 age group was statistically significantly higher than the participants in the other age groups. There was no statistically significant relationship between the patients being married or single and being non-hospitalized or hospitalized. There was no statistically significant relationship between the education status of the patients and those who were non-hospitalized and hospitalized. There was no statistically significant relationship between the occupations of the patients and they're being non-hospitalized or hospitalized. There was

a statistically significant relationship between hospitalized and non-hospitalized patients according to whether they had comorbidities or not ($p< 0.05$). Participants with hypertension were statistically significantly more likely to be hospitalized than participants with diabetes and liver disease. Have you had a circulation problem? (edema, hypertension, hypotension)" There is a statistically significant relationship between the answers to the question of "(edema, hypertension, hypotension)" and those who were hospitalized and non-hospitalized ($p< 0.05$). Do you feel less active than before?" There is a statistically significant relationship between the answers to the question and those who are non-hospitalized and hospitalized ($p< 0.05$). Do you feel tired all the time?" There is a statistically significant relationship between the answers to the question and those who are non-hospitalized and hospitalized ($p< 0.05$). "Have you received psychological support?" There is a statistically significant relationship between the answers to the question and those who are non-hospitalized and hospitalized ($p< 0.05$). "Did you go to the emergency department again after discharge?" There is a statistically significant relationship between the answers they gave to the question and those who were hospitalized and non-hospitalized ($p< 0.05$).

Discussion

The COVID-19 pandemic has caused significant changes in social life, professional life, education, and health systems. . In this process, which has led people to stock up on food and cleaning supplies (54.4%), 36% of the participants developed a desire to avoid social environments. 46% of the patients no longer use public transport due to the fear of infection (6,7). It was determined that 82.4% of the recovered patients apply to emergency services for control purposes without any reason. Keeping the health system busy due to anxiety that develops psychologically, healthy eating efforts (80.8%), desire to use drugs even when not feeling sick (52.8%), constantly feeling exhausted (40.8%), and disturbed sleep (51.2%) have developed (8,9). However, only 24% of the participants received psychological support. Human health has biological, psychological, and social components, so psychological and social support mechanisms can be used for people who have survived the disease. As a disaster manager, mask, distance, and cleaning rules are important for reducing the transmission of the Covid-19 disease, which has turned into a pandemic, and we can ensure that the disease returns to its old life physically and spiritually in a shorter time by cooperating with other branches in the long covid process followed by the observed symptoms and discharge process (10,11)

It seems that the effects of this disease, which causes a pandemic all over the world, on the physical and mental health of people will continue for many years. Protection from the virus can be possible not only with isolation and social restrictions but also by creating a new lifestyle. During the pandemic, the inadequacy of basic life needs, lack of information, quarantine process, mental reactions from being infected or being in contact, economic losses, stigma, disappointment, isolation, and psychological deterioration are observed, while the reactions differ according to the course of the disease.

Limitation: The fact that the hospitalized group is older and has additional disease may lead to the opinion that it will affect the answers given to the questions, and that both groups will have different psychological and behavioral characteristics

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Original Article
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Investigation of Panic Attack Patients Presenting to the Emergency Department of Bezmialem Vakıf University with Chest Pain

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Abstract

Objective: Panic attacks are severe attacks of fear and anxiety that occur at certain times. It starts suddenly and quickly reaches the top. It can take from 1-2 minutes to several hours. Chest pain is a common symptom of panic attacks. Especially the presence of chest pain causes repetitive emergency deparment admissions. In this study, we evaluated the patients who presented to the emergency department with chest pain and panic attack symptoms. We aimed to prevent the inappropriate treatment given to these patients by investigating the panic attack patients for whom the diagnosis of Acute Coronary Syndrome was ruled out.

Method: This study was carried out retrospectively. 32 patients with chest pain among 136 patients diagnosed with panic attack in the Emergency Department. The demographic information, complaints, chronic diseases of the patients and the results of the blood tests were recorded.

Result: Patients with a diagnosis of panic attack frequently apply to emergency services. Among the patients, women were in the majority and the average age of all patients was 41 years. More than half of the patients had tomography, ultrasound, echocardiography and magnetic resonance imaging. The analysis and imaging results requested from the patients were normal. Most of the patients who present to the emergency department with chest pain complaints are discharged after excluding life-threatening conditions, saying that there is no acute condition. In fact, the main reason for this is the inadequate communication with the patient. However, the underlying condition in patients is likely to be panic attacks. It is important to evaluate non-cardiac chest pain in emergency departments. In this way, unnecessary analysis is not done, time management is healthier and most importantly, patients do not use unnecessary medication.

Keywords: Panic Attack, Chest Pain, Emergency Service

Introduction

A panic attack is a severe episode of fear and anxiety that occurs at certain times. It starts suddenly and rapidly reaches its peak. It usually lasts for 10-15 minutes, but sometimes it can last from 1-2 minutes to a few hours. It is commonly seen between the ages of 25-45, with a female-to-male ratio of 3:2. The prevalence is approximately around 11.2% (1). A person experiencing a panic attack may have symptoms such as palpitations, sweating, trembling, shortness of breath, chest pain, chest tightness, nausea, dizziness, paresthesia, fear of losing control, derealization, feeling of choking, and fear of death. A panic attack is defined as a situation where at least 4 of these 13 defined symptoms occur (2). Chest pain is a common symptom of panic attacks, and it is seen in 22-70% of patients (3). Chest pain is sometimes the first sign of life-threatening diseases such as heart attack or pulmonary embolism. Therefore, careful differential diagnosis is necessary for emergency departments (4). Chest pain in patients with panic attacks leads to repeated emergency department visits. A study showed that 39% of patients with panic attacks had more than 4 similar complaints in the emergency department within a year (5). It may be difficult to make the initial diagnosis in patients without a diagnosis of panic attacks in the emergency department. The rapid and sudden onset of symptoms may mimic or trigger myocardial infarction. It is important to manage panic attacks that are included in the differential diagnosis of chest pain in emergency departments. Numerous tests can be performed to exclude life-threatening conditions. However, it is not necessary to perform many tests on every visit of patients with panic attacks to exclude organic causes. It has negative consequences in terms of time and cost. In this study, we evaluated patients who presented to the emergency department with chest pain complaints among the symptoms of panic attacks. Thus, we aimed to draw attention to the management of panic attack patients who experience chest pain in emergency departments.

Method

This study was conducted retrospectively after obtaining ethical approval from the Bezmialem University Faculty

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of Medicine Hospital Emergency Department Ethics Committee (Decision No: 07/113, dated 22.05.2020). The study was performed in accordance with the Declaration of Helsinki rules. A total of 136 patients who presented to the emergency department with complaints of chest pain between May 1, 2020, and October 31, 2020, and who had no pathological findings indicating cardiac pathology and no organic cause detected in the laboratory tests were evaluated. Thirty-two patients who exhibited symptoms of the panic disorder according to the DSM-5 diagnostic criteria (6), and who experienced the sudden onset of four or more of these symptoms, were included in the study. The patient's demographic information, complaints, chronic diseases, laboratory tests, imaging tests requested, and outcomes were recorded in forms created for this purpose. IBM SPSS Statistics 22.0 (IBM Corp, Armonk, New York, USA) statistical software package and Microsoft Excel 2010 programs were used for data analysis in the study. Central and dispersion measures, such as number, percentage, mean, and standard deviation, were used in the creation of descriptive statistics. The normality of numerical variables was tested using the Shapiro-Wilk test. The Chi-square test was used for gender, and the Student t-test was used for age.

Results

The study included 32 patients who had both panic attacks and chest pain and organic pathologies were excluded. The mean age of the patients was 41.50 ±14.843 years (19-73). The ratio of females was 59.4% (19 people) and males was 40.6% (13 people). The mean number of attacks experienced by patients within a week was 1.25 ±0.622 (1-3). The number of people who applied to the emergency department with the same complaints was 12 people (37.5%). The mean systolic blood pressure was 145.4 ± 23.9 mmHg and the heart rate was 90.59 ± 19.2 bpm (60-143). White Blood Cell (WBC): 8.62 ± 1.845 10^9/L, hemoglobin 13.31 ± 1.655 g/L, hematocrit 40.16 ± 3.446%, aspartate aminotransferase (AST) 16.69 ± 5.688 IU/L, alanine aminotransferase (ALT) CRP normal 17.66 ± 9.300 IU/L, troponin 1.75 ± 1.586 ng/mL, C-reactive protein 1.62 ± 3.842 mg/L, sodium 137.97 ± 3.816 mEq/L, potassium 3.57 ± 0.400 mEq/L. Among the other complaints of the patients besides chest pain, tachycardia was seen in 56.3% (18 people), paresthesia in 43% (14 people), dizziness in 31.3% (10 people), shortness of breath in 18.8% (6 people), sweating in 12.5% (4 people), nausea-abdominal pain in 18.8% (6 people), hot flashes in 25% (8 people), fear of losing oneself in 18.8% (6 people), and fear of death in 12.5% (4 people). Among the comorbidities; hypertension was seen in 28.1% (9 people) and diabetes mellitus in 12.5% (4 people), coronary artery disease in 3.1% (1 person), chronic lung disease in 3.1% (1 person), thyroid disease in 12.5% (4 people), malignancy in 3.1% (1 person), and epilepsy in 3.1% (1 person). 59.4% of the patients were married (19 people), 21.9% were single (7 people), and 18.8% had divorced or lost their spouses (6 people). Coronary angiography was performed in 9.4% of the patients (3 people). 93.8% of the patients were discharged from the emergency department, and 6.3% were hospitalized. Among the tests, echocardiography and ultrasound were performed on 17 people (53.1%). Computerized tomography and magnetic resonance imaging were performed on 14 people (43.8%).

Discussion

Patients with a diagnosis of panic disorder frequently visit emergency departments. It is difficult to detect the panic disorder in emergency departments, so organic causes, especially acute coronary syndrome, are ruled out in patients presenting with symptoms of panic attacks (7). Increased stress hormones during a panic attack are a risk factor for acute coronary syndromes in most studies (8, 9, 10). In our study, we evaluated 32 patients who had chest pain that was non-cardiac in origin and only showed symptoms of panic disorder. 59.4% of the patients were female. Panic attacks are more common in women, especially peaking between the ages of 15-25 and 45-54 (11). The mean age of our patients was 41.50 ±14.843 years. Chest pain complaints and being over 40 require careful consideration in terms of differential diagnoses. Chest pain due to coronary artery disease is a condition that should not be overlooked. Panic disorder is a psychiatric illness characterized by recurring panic attacks. In our study, it was observed that the average number of attacks that patients experienced within one week was 1.25 (1-3 times), and this was considered a reason for repeated emergency department visits. Despite being re-examined and re-evaluated each time and finding no negative results, patients continue to visit the emergency department with the same complaints. In our study, 37.5% of patients had frequent emergency department visits with the same complaints. The mean systolic blood pressure from the vital signs taken in the emergency department was 145.4±23.9 mmHg, and the heart rate was 90.59±19.2. Blood test results were within the normal reference range. The mean troponin value, one of the cardiac enzymes, was 1.75 ±1.58 ng/mL, and it was within the normal limits (Table 1). The other symptoms observed in the evaluated patient, in addition to chest pain complaints, were tachycardia (56.3%), paresthesia (43%), and dizziness (31.3%), respectively (Table 2). The most common comorbidities in patients were hypertension (21.8%) and diabetes mellitus (9.3%) (Table 3). These are already diseases with high prevalence in the community. Although the cardiac enzymes were within the normal range, percutaneous angiography was performed on a total of 3 patients, 2 of whom were male, who described their chest pain in a typical way and had a positive risk assessment result. The angiography results

Table 1: Blood test results

		Min.	Maximum	Mean	Standard deviation
White Blood Cell	10^9/L	5	13	8.62	1.845
Hemoglobin	g/dL	10	16	13.31	1.655
Hematocrit	%	34	46	40.16	3.446
Aspartate aminotransferase	U/L	5	29	16.69	5.688
Alanine aminotransferase	U/L	5	49	17.66	9.300
Troponin	ng/mL	0	7	1.75	1.586
C-reactive protein (CRP)	mg/L	0	20	1.62	3.842
Sodium	mEq/L	122	143	137.84	3.819
Potassium	mEq/L	3	5	3.97	0.400
Systalic blood pressure	mmHg	100	202	145.47	23.996
Heart rate	/min	60	143	90.59	19.247

Table 2: Symptoms

	Positive n(%)	Negative n(%)
Tachycardia/ Palpitations	18 (56.3)	14 (43.8)
Shortness of breath	6 (18.8)	26 (81.3)
Sweating	4 (12.5)	28 (87.5)
Shake	6 (18.8)	26 (81.3)
Nausea/ Abdominal pain	6 (18.8)	26 (81.3)
Hot flash	8 (25.0)	24 (75.0)
Paresthesia	14 (43.8)	18 (56.3)
Fear of losing control	6 (18.8)	26 (81.3)
Fear of death	4 (12.5)	28 (87.5)
Dizziness/ Headache/ Fainting	10 (31.3)	22 (68.8)

Table 3: Comorbid Diseases

	Positive n(%)	Negative n(%)
Hypertension	9 (28.1)	23 (71.9)
Diabetes Mellitus	4 (12.5)	28 (87.5)
Coronary artery disease	1 (3.1)	31 (96.9)
Thyroid Disease	4 (12.5)	30 (87.5)
Chronic lung disease	1 (3.1)	31 (96.9)
Malignancy	1(3.1)	31 (96.9)
Epilepsy	1(3.1)	31 (96.9)

Table 4: Imaging Studies

	Positive n(%)	Negative n(%)	Total n(%)
Coronary Angiography	3 (9.4)	29 (90.6)	32 (100)
Echocardiography/ Ultrasonography	17 (53.1)	15 (46.9)	32 (100)
Tomography / Magnetic resonance	14 (43.8)	18 (56,3)	32 (100)

showed less than 40% stenosis and were not associated with the acute coronary syndrome. Echocardiography or ultrasound was requested for a total of 17 patients (53.1%). 14 patients (43.8%) underwent tomography or magnetic resonance imaging (Table 4). All of these imaging tests did not reveal any acute pathology. A series of procedures, time, and cost are performed for patients who present to the emergency department with a combination of panic attacks and chest pain. Three patients (9.4%) were admitted to the hospital, and 29 (90.6%) were discharged after being evaluated. Evaluating chest pain that is not related to the heart is important. Most patients who present to the

emergency department with complaints of chest pain are discharged after ruling out life-threatening conditions and being told that they do not have an acute condition. The main reason for this is the lack of sufficient communication with the patient. However, the underlying condition in these patients is most likely a panic attack. A preliminary diagnosis of a panic attack can be made after a detailed history and physical examination (12). Panic attack patients who present to the emergency department rather than the psychiatry department should therefore be well recognized. In cases where no organic pathology explaining the chest pain can be detected, the panic attack should be included among the differential diagnoses and the patient should be referred to psychiatry. Atypical chest pain, previously repeated presentations with the same complaints, identified accompanying symptoms with chest pain, and the doctor's suspicion are important factors. This way, unnecessary tests are avoided, time management is more efficient, and most importantly, patients do not use unnecessary medication.

Limitations: The study was completed with 32 patients who applied to the emergency department because the number of patients with both complaints was low.

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Review Article
Eurasian Journal of Critical Care

General Approach to Cases of Drug Intoxication

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Abstract

Emergency departments are the first places where patients with drug intoxication are evaluated, and all physicians working in the emergency department should know the approach to intoxication very well. The diversity of treatment includes supportive care, decontamination, antidote therapy and the use of elimination techniques. The management of the follow-up and treatment of the cases of intoxication, the creation of algorithms and the determination of strategies are important and the correct application of these algorithms will be life-saving.

Keywords: Drug; Intoxication; Emergency Medicine

Introduction

The substances that cause damage or death in biological systems by entering the body in various ways are called toxins (poisons), and the branch of science that studies toxins is called toxicology (1). The history of intoxication is as old as the history of mankind. Information on many toxins (hemlock, aconite, opium, lead, copper) is available in the Ebers papyrus, that are believed to have been written around 400 BC. Hippocrates also mentions the number and treatment of toxins in his professional book (2). Paracelsus (1493-1541) indicated that "Everything that exists is toxin, and there is nothing that does not contain toxin. Only the dose determines whether something is toxin or not". In case of high exposure to a substance, every substance is likely to turn into toxin. These substances may enter the body through various routes (oral, parenteral, inhalation, skin and mucous membranes) and cause unwanted side effects in the body. A toxin may affect the normal functioning of the organism in many ways. It may impair or alter cellular or organ functions and may lead to undesired results by affecting the uptake, excretion or transport of other substances into the organism (3). Cases of intoxication are very common all around the world. In most of the intoxications, acute intake of the drug causes that cases of intoxication have an important place in emergency department admissions. Cases of intoxication constitute 5-10% of all patients admitted to the emergency department, and only 5% of these cases of intoxication require hospitalization. Death occurs in only 0.03% of all cases of intoxication (4).

Cases of intoxication may present with various clinical findings depending on the affected system or systems. The extent of the symptoms may vary from gastrointestinal system complaints to CNS findings. It is not known what kind of drug causes intoxication in many cases at the beginning of emergency treatment. Due to the wide range of substances that may cause intoxication, it is important to find the primary agent or agents causing the event (5).

History is crucial in patients presenting to the emergency department with intoxication. However, the relatives of the patient (family, bringers, roommates or workmates) should be questioned in detail by the emergency physician due to both the psychology of the patient and the patient's inability provide medical history (5, 6).

Although the clinical examination findings of the patients were of diagnostic value, the determination of the substance taken is based on history and physical examination. Known diseases, currently or previously used drugs, empty drug boxes around, medical diseases and treatments of the relatives, or chemicals/drugs that can be accessed in the workplace should be included in the history (5, 6).

Some physical examination findings may be specific to some substances, however, they are not clinically associated with blood level for many substances (7).

Specific antidote therapy is available for very few substances. Thus, although it is important to identify the toxic agent, the initiation of symptomatic treatment should not be delayed for the stabilization of the patient. It is necessary

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to carry out physical examination, antidote treatment and history together after the stabilization of the critical patient.

The treatment of patients presenting with suspected intoxication is not different from other patients. The aim of treatment is to evaluate and stabilize the functions of neurological, nephrological, gastroenterological and other body systems, especially cardiopulmonary functions (airway, respiratory and circulation). During the initial assessment, it is necessary to prioritize ensuring the patency of the airway, breathing and circulation. In order to ensure airway patency, if there is a foreign body in the mouth, it should be removed, and intubation should be considered in patients without protective reflexes and with a GCS below 8 (3, 8)

While performing these procedures, necessary circulatory support should be provided, oxygen should be given, the patient should be monitored, and the rhythm should be evaluated by taking an ECG (6). The patient's vital signs should be corrected with appropriate interventions.

Although the use of antidotes may be required in the treatment of intoxicated patients, administration of antidotes only in certain circumstances may come before the end of stabilization. Patients may have altered consciousness that can be easily treated with specific antidotes such as opiate intoxication, hypoglycemia, and Wernicke's encephalopathy. With medical history, vital signs and anamnesis, empirical administration of oxygen, naloxone, thiamine and glucose, which is also called "coma cocktail", may be considered (3).

After ensuring the stabilization of the patient after the first examination, a more comprehensive assessment is made with a detailed history, physical examination and laboratory tests (8).

It is usually difficult to take an accurate history in patients with intoxication. Both the psychological state of the patient and impairment of the consciousness can make it even more difficult to take history. Nevertheless, taking the patient's history has an important role in guiding the treatment (3, 4, 9). In cases where adequate information cannot be obtained from the patient, patient relatives, colleagues, crime scene witnesses and, if any, the healthcare team bringing the patient should be investigated in detail (9). The drugs that can be accessed by the patient, currently or previously used drugs, and the diseases and treatments of the household or relatives should be investigated in detail. While accurate and reliable history may directly lead the physician to the diagnosis, the physician must consider the physical examination and laboratory findings while guiding the treatment (9).

Physical examination is highly important in the management of the diagnosis and treatment of the patients with intoxication (10). The assessment of patients with potential for toxic exposure requires a systematic approach (3). The patient should be completely undressed. The clothes of the patient should be checked for substances hidden in the body (marijuana, heroin and empty drug boxes), and if there is any odor from the clothes, it should be noted (3, 11). During the physical examination, vital signs, including pulse oximetry, should be accurately measured and repeated. The respiratory rate should be counted exactly instead of estimating, and it should be noted. Cardiac monitoring should be performed, a 12-lead ECG should be taken to evaluate QT, QRS and rhythm (12). It is extremely important to take ECG in intoxicated patients for the demonstration of complications and patient follow-up. Regular and continuous ECG monitoring should be performed on all patients, and it is necessary to focus on cardiac effects (13). While the drugs that block myocardial Na channels lead to prolongation in the QRS interval, the agents that block K channels may lead to ventricular arrhythmias such as Torsades de Pointes by prolonging the QT interval (11).

The general condition and consciousness of the patient should be evaluated, and attention should be paid to agitation, confusion, and drowsiness. The skin should be examined in detail for sweating or dryness, redness, bruising, trauma or injection scars. Bruising may be a clue for trauma and may also indicate a coagulation disorder. It should not be forgotten that physical scars may be observed in unexpected region in patients with intravenous drug use (3, 11). The eyes should be evaluated for pupil diameter and reactivity, nystagmus, unconjugated eye movements, and increased or dryness of tears (3). The oropharynx should be evaluated for increased secretion or dryness. The lungs should be auscultated for bronchorrhea and non-cardiogenic pulmonary edema, and the heart should be auscultated for rhythm, rate, and pattern (3). Abdominal examination should be performed for the presence of bowel sounds, globe vesical, abdominal tenderness or rigidity, and bowel sounds should be counted. Bowel sounds may increase or decrease depending on the effect of the toxic agent on the cholinergic system (3). The extremities should be evaluated for muscle tone and fasciculation, and detailed neurological examination including cranial nerves, muscle tone, DTRs and muscle strength should be performed (3).

After the physical examination, whether the patient's current examination findings are compatible with any toxic syndrome should be compared. The term toxidrome can be defined as the symptoms and physical examination findings caused by drug groups with the same pharmacological effect (10, 14). The most common toxidromes are anticholinergic syndrome, sympathomimetic syndrome, opiate/sedative/ethanol syndrome, cholinergic syndrome and serotonin syndrome (12). Some specific toxins can be identified by the patient's current vital signs, neurological examination, skin examination and odor (6).

Classification of symptomatic drugs based on vital signs (12):

1. Drugs causing bradycardia: Beta blockers, opiates, calcium channel blockers, anticholinesterase drugs, digoxin, clonidine and ethanol.

2. Drugs causing tachycardia: Anticholinergic drugs, amphetamine, sympathomimetics, theophylline, antihistamine drugs and cocaine.
3. Drugs causing hypothermia: Carbon monoxide, opiates, sedative hypnotics, oral antidiabetics and insulin.
4. Drugs causing hyperthermia: Nicotine, anticholinergic agents, antiepileptics, antihistamines, salicylates, sympathomimetics, and antidepressants.
5. Drugs causing hypotension: Alpha-1 adrenergic antagonists, alpha-2 adrenergic agonists, beta adrenergic antagonists, ACE inhibitors, antiarrhythmics, calcium channel blockers, cyanide, cyclic antidepressants, ethanol and other alcohols, iron, methylxanthines, nitrates and nitrites, nitroprusside, opiate, phenothiazine, phosphodiesterase-5 inhibitors, sedative hypnotics.
6. Drugs causing hypertension: Ergot alkaloids, lead (chronic), monoaminoxidase inhibitors, nicotine (in the early stage), phencyclidine, sympathomimetics, yohimbine.
7. Drugs causing hypoventilation: Alpha-2 adrenergic agonists, botulinum toxin, ethanol and other alcohols, gamma hydroxybutyric acid, neuromuscular blockers, opiates, organic phosphate insecticides, sedative hypnotics.
8. Drugs causing hyperventilation: Cyanide, dinitrophenol and the like, epinephrine, ethylene glycol, hydrogen sulfide, methanol, methemoglobin sources, methylxanthines, nicotine (in the early stage), salicylates, sympathomimetics.

Classification of symptomatic drugs based on neurological findings (12):

1. Drugs causing miosis: Cholinergics, clonidine, opiates, organophosphates, phenothiazines, pilocarpine, and sedative hypnotics.
2. Drugs causing mydriasis: Anticholinergics, antihistamines, antidepressants and sympathomimetics.
3. Drugs causing convulsions: Organophosphates, tricyclic antidepressants, isoniazid, insulin, sympathomimetics, cocaine,methylxanthines,phencyclidine,methylxanthines, phencyclidine, benzodiazepines, ethanol, lead, lithium, lidocaine and lindane; and moreover, lithium may lead to tremors, organophosphates may lead to fasciculations, and neuroleptics may lead to dystonic reactions.

Classification of symptomatic drugs based on dermal findings (12):

1. Drugs causing diaphoretic skin manifestations: Sympathomimetics, organophosphates, acetylsalicylic acid, phencyclidine
2. Drugs that give the appearance of red skin: Anticholinergics, boric acid, carbon monoxide
3. Drugs that give the appearance of blue skin: Nitrates and nitrites, dapsone, phenazopyridine
4. Drugs causing bulla on the skin: Barbiturates, carbon monoxide, sedative hypnotics

Laboratory and Imaging in Cases of Drug Intoxication

In patients with intoxication, laboratory tests such as general hemogram, biochemistry, and drug-specific tests (such as drug level) are studied as blood tests (12, 15). General laboratory tests should include comprehensive biochemistry analysis involving complete blood count, blood electrolytes, kidney function tests, liver function tests and glucose, coagulation values, cardiac markers, blood gas analysis, complete urinalysis, B-HCG value for each pregnant woman, and drug level if possible (15). General laboratory tests may help to know the initial blood values of the patient, to recognize the metabolic disorders caused by intoxication, and to guide the treatment.

Although radiological imaging is rarely useful in diagnosis, it may have an important role in the clinical management and follow-up of some intoxications (16, 17).

In cases of intoxication, the main goal is to first plan the supportive treatment of the patient, to reduce the concentration of the toxin in the target organ or tissue, and then to combat its pharmacological and toxicological effects (18). The inhibition of the absorption of toxic substance, the elimination of the toxic substance from the body, and the elimination of toxic effect with symptomatic supportive treatment and antidote constitute the stages of the intervention for intoxication (19). In line with these aims, decontamination methods are applied to prevent the absorption of the toxic substance, and it is ensured that the patient is removed from the substance and the substance is excreted from the patient and the drug is excreted from the body. The choice of the decontamination and excretion methods (gastric lavage, vomiting, administration of activated charcoal, cathartics, whole bowel irrigation, diuresis, body washing, excreting, hemodialysis, hemoperfusion etc.) depends on the toxin, time, and the patient's clinical picture.

Vomiting / Causing to vomit

In the past, regurgitation was performed to excrete the toxic substance taken orally in cases of drug intoxication. Nowadays, regurgitation is not recommended in cases of drug intoxication.

Gastric lavage

Gastric lavage is the process of washing the stomach by inserting a special catheter into the stomach through the mouth (orogastric) or the nose (nasogastric) to empty the stomach contents or to wash the stomach (3). An appropriately sized orogastric/nasogastric tube is sent to the stomach in gastric lavage. After checking the location of the tube, gastric lavage is maintained until the waste fluid is cleaned with appropriate amounts of fluid in adults (3).

Administration of Activated Charcoal

Activated charcoal binds to the drug irreversibly in the intestine and reduces the adsorption and enterohepatic circulation of the drug, and it is also considered to reduce the blood concentration of the drug in two ways, by creating a negative diffusion gradient between the intestinal lumen and the blood, and by allowing the drug called "gastrointestinal dialysis" to pass from the blood to the intestinal lumen (20). The earlier the administration of activated charcoal, the more effective it is considered to be.

Whole bowel irrigation

Whole bowel irrigation is a fast and usable method that allows the bowel to be emptied in 4-6 hours (12). In this way, absorption of the toxic substance can be prevented by giving a high volume of electrolyte solution enterally and increasing the rectal excretion of the ingested chemical.

Forced Diuresis

In cases of intoxication with substances excreted through the kidneys, the excretion of the toxin from the body can be accelerated by increasing the urination of the patients. This process is called forced diuresis. Kidney functions, cardiac and respiratory system must be intact to perform this treatment (18).

Hemodialysis

Hemodialysis is based on the principle of taking toxic substances from the blood into the dialysis fluid in the device through dialysis apparatus. The benefits of hemodialysis are removal of toxins absorbed from the intestinal lumen, removal of substances that do not bind to activated charcoal, and elimination of active toxic metabolites along with the parent compound (18). It can be applied in methanol, ethylene glycol, high-dose salicylate, theophylline, as well as acetaminophen, arsenic, bromide, chloralhydrate, ethanol and lithium intoxication (21).

Intravenous Lipid Emulsion (ILE) Therapy

Intravenous lipid emulsion (ILE) therapy describes the use of lipid emulsions by intravenous infusion to reduce the bioavailability and toxicity of the circulating toxic substances. Significant clinical improvement in the treatment of intoxication with lipophilic drugs, relatively easy application, and low cost led to an increased use of these lipid emulsions and paved the way for their use in the treatment of intoxication (22)

Antidote Treatment

The use of antidotes refers to reducing the effect of the toxin, and reversing or neutralizing its effects. They are chemical or physiological antagonists. The mechanisms of action of antidotes are the inhibition of toxin formation, activation of toxin-destroying enzyme systems, antibody properties against toxins, interaction with toxic agents at the receptor level, and binding of heavy metals. Common cases of intoxication in the emergency department and the antidotes to be administered are presented in Table 1 (23, 24).

Table 1: Toxin and Antidotes Causing Intoxication

Toxin Causing Intoxication	Antidote
Gold	Dimercaprol
Anticoagulants	Vitamin K, Fresh Frozen Plasma
Anticholinergic drugs	Physostigmine
Antimony compounds	Dimercaprol
Arsenic	Dimercaprol, Penicillamine
Copper	Dimercaprol, Penicillamine
Benzodiazepines	Flumazenil
Betablockers	Glucagon
Bismuth	Dimercaprol
Mercury	Dimercaprol, Penicillamine
Zinc	Dimercaprol
Iron	Desferrioxamine
Digoxin	Digoxin Binding Antibody
Ethylene Glycol	Ethanol
Heparin	Protamine
Hydrochloric Acid	Calcium
Hydrogen Sulfide	Sodium Nitrite
Isoniazid	Pyridoxine
Calcium Antagonist	Calcium
Carbamate	Atropine
Carbon Monoxide	Oxygen
Lead	Dimercaprol, Penicillamine
Metoclopramide	Procyclidine
Methanol	Ethanol
Methemoglobinemia	Methylene Blue
Methotrexate	Folic Acid
Nickel	Dimercaprol
Opioid Analgesics	Naloxone
Organophosphate	Atropine, Pralidoxime
Paracetamol	N-Acetylcysteine
Sympathomimetics	B Blocker
Thyroxine	Propranolol

National Poison Information Center (UZEM - 114)

As physicians, we usually know the medical approach to cases of intoxication that we face frequently. However, when we face cases of intoxication due to a drug whose content we do not know, herbal product that we do not know what it is, or an insect bite whose poison we do not know what effects it may have, we need support for the management of these cases. Call center 114 of the National Poison Information Center (UZEM) provides medical support by answering calls from all over Turkey 7/24. UZEM has an essential

role in case management and treatment in the hospital in cases of intoxication, with the medical support it provides via 114 phone line and the support for antidote supply to the hospitals. To get information about toxins and treatment recommendations by contacting poison counseling centers established in order to help the physician quickly and reliably will increase the success of treatment of the cases of intoxication.

Conclusion

Emergency departments are the first places where patients with drug intoxication are evaluated, and all physicians working in the emergency department should know the approach to intoxication very well. The diversity of treatment includes supportive care, decontamination, antidote therapy and the use of elimination techniques. The management of the follow-up and treatment of the cases of intoxication, the creation of algorithms and the determination of strategies are important and the correct application of these algorithms will be life-saving.

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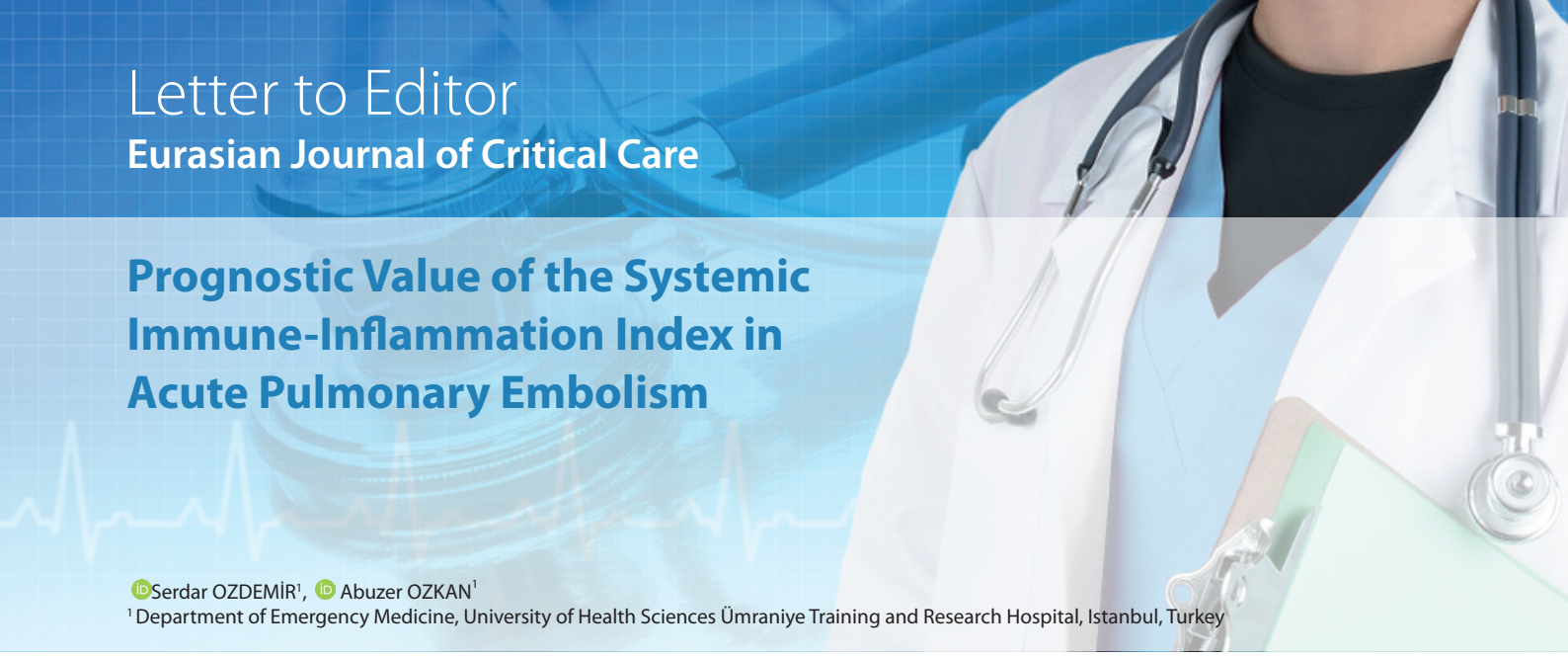
Letter to Editor
Eurasian Journal of Critical Care



Prognostic Value of the Systemic Immune-Inflammation Index in Acute Pulmonary Embolism

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Dear editor

We read with interest the research article prepared by Duyan et al. and titled "Is it Possible to Predict High-Risk Patients in Acute Pulmonary Embolism with Systemic Immune-Inflammation Index" published in the last issue of 2022 of your journal. They reported that it is a more valuable biomarker in predicting high-risk acute pulmonary embolism than other combined hematological indices (1). We thank the authors and editorial board for this informative and interesting article.

Different cellular factors that may be important in the pathophysiology and etiology of acute diseases and the information provided by the hematological parameter indices developed as a combination of these factors about the progression of the diseases have been examined in many studies. The knowledge of the level of systemic immune and inflammatory response enables the clinician to evaluate the diseases. It is stated that the systemic immune-inflammation index is a new generation inflammation biomarker created with whole blood parameters (2). In this biomarker, it is a value formed by the product of the neutrophil count and the platelet count multiplied by the lymphocyte count. It is stated that leukocytes, one of the blood components, perform a physiological response to stress in humans and the increase in the amount of this response is manifested by a decrease in the number of lymphocytes. In cases such as inflammation, there is an increase in the number of neutrophils in the blood. The main task of the platelet group in the blood is to maintain the internal balance of the body and the coagulation mechanism (3).

Acute pulmonary thromboembolism is the most serious complication of deep vein thrombi. Although it is seen frequently, it is one of the diseases that are missed in the emergency department more than it is thought. It causes vague, nonspecific symptoms, which is the biggest reason why it is difficult to diagnose. The clinical picture of pulmonary embolism can mimic countless diseases. A noninvasive diagnostic method that proves or definitively excludes the diagnosis has not been developed yet. Missing the diagnosis of pulmonary embolism during the patient's admission to the emergency department increases mortality 5 times more. It is vital to recognize and prognosticate high-risk acute pulmonary embolism in the emergency department (4). Therefore, it is vital to recognize and prognosticate high-risk acute pulmonary embolism in the emergency department. Current literature is the recommended severity index of pulmonary embolism severity index (PESI), sPESI and gPESI to identify high-risk patients (5).

In the aforementioned study, combined hematological indices were significantly increased in high-risk patients with acute pulmonary embolism according to univariate test results. Secondly, they performed receiver operating characteristic analysis to test and compare the abilities of combined hematological indices to predict high-risk acute pulmonary embolism. The authors found areas under the curve for neutrophil to lymphocyte ratio, platelet to lymphocyte ratio, monocyte to lymphocyte ratio, erythrocyte distribution width to lymphocyte ratio, and systemic immune inflammation index 0.78, 0.77, 0.76, 0.68, and 0.84, respectively (1). The authors provide useful information by demonstrating that the systemic immune-inflammation index can predict the high-risk acute pulmonary embolism. We congratulate them.

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Case Report
Eurasian Journal of Critical Care

Case Report with Non-Traumatic Hemoragic SVO and Spontaneous Pneumothorax

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Abstract

The blurring of consciousness is one of the common causes of admission to emergency departments. While evaluating an unconscious patient, all system examinations should be done more carefully and thoroughly since the unconscious patients cannot express themself adequately a patient with non-traumatic hemorrhagic cerebrovascular accident & spontaneous pneumothorax is a rare condition. In this case we aim to present, life-threatening severe clinical conditions could be occur, if the intervention is delayed.

Introduction

The coexistence of pneumothorax and intraventricular hemorrhage is usually occurs after a traumatic event, however it can also develop spontaneously. Our aim, in this case, is to present this rare condition.

Pneumothorax is a life-threatening clinical condition frequently encountered in the emergency department and may require emergency treatment. Pneumothorax is a rare condition that expresses the presence of spontaneous or traumatic air in the intrapleural space (1). The diagnosis of pneumothorax is made clinically and radiologically. Diagnosis is confirmed when the visceral pleural line around the collapsed lung is seen on the posteroanterior chest X-ray (CXR) or the pneumothorax is seen on computed tomography of chest (CT) (1). Minor changes in lung volume a may is not symptomatic and cannot be detected during the examination. When pneumothorax reaches large volumes, and the patient has severe shortness of breath, it should be treated immediately. The first step in emergency treatment is bed rest, oxygen therapy, observation, simple aspiration, closed underwater drainage, and tube thoracostomy (1).

Cerebrovascular accident (CVA) is defined as a neurological deficit due to ischemic or hemorrhagic causes (2). CVA is a highly heterogeneous disease in terms of its causes and consequences. Approximately 87% of strokes develops secondary to ischemia that results from arterial and/or venous causes, 10% develop secondary to parenchymal bleeding, and 3% develop secondary to subarachnoid hemorrhage (SAH) (3). Hemorrhagic CVA may occur spontaneously or traumatically (3). It can also develop secondary to hypertension or due to the rupture of an aneurysm in the brain. It can be considered a severe life-threatening problem. Treatment methods differ depending on the cause. Although patients may recover completely, different degrees of neurological deficit may remain, and even death may result.

In our case, the coexistence of pneumothorax and intraventricular hemorrhage is usually found to be traumatic, but it may rarely develop spontaneously. With this case report, we aimed to present a rare condition that spontaneously developed simultaneously.

Case

A-53-years old female patient with the complaint of decreased level of consciousness admitted to ED by ambulance. It was reported that the patient had a history of hypertension. According to the information received from the patient's family, while she was sitting at home with her family, she had become unconscious after a sudden onset of headache and did not react to any stimulus. In the initial physical examination of the patient, she was unconscious, Glasgow coma score (GCS): 9-10, SaO2: 80%, heart rate (HR): 111/min, blood pressure (BP): 210/105 mmHg. The patient had a weak response to painful stimuli, anisocoria, and unresponsiveness to light reflexes. Lung auscultation of the patient, reveals decreased breath sounds in the right hemithorax. In laboratory findings; WBC: 10.130 mm3, Hb: 12.49 g/dL, Htc: 39%, CRP: 2.28 mg/L, INR: 1.14. Other values were within normal ranges. No trace of trauma was observed in the general examination

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of the patient. It was thought that the patient might have a central nervous system pathology due to a decrease in light reflex and anisocoria in the neurological system examination and lung pathologies due to decreased breath sounds on the left. Thereupon, it was decided to obtain CT of the brain and thorax to detect any neurological or respiratory problem. Brain CT of the patient showed, diffuse bleeding areas shifted to the left side of the brain and into the right ventricle. Thorax CT revealed pneumothorax in the right lung (Figure-1). Upon the patient's thorax CT showed that the mediastinum and heart were shifting to the left, thoracic surgery was informed, and tube thoracostomy was applied to the patient. Patient was consulted with the neurosurgeon for extensive bleeding areas that shifted in the brain CT and then patient undergo emergency neurosurgical operation for brain hemorrhage. While operative preparation was completing in the ED, patient's Glasgow coma score decreased. Therefore, patient was intubated to protect patient's airway. Simultaneously with intubation antihypertensive agents, anti-edema therapy for brain, supplemental oxygen, and prophylactic antiepileptic therapy were started. Afterward, the patient was prepared for surgery, and she was sent to the operating room.

Discussion

The physical examination of each patient with impaired consciousness should be done entirely and thoroughly. CVA is a widespread disease that can result in death; therefore, early diagnosis of CVA is vital (4). Hemorrhagic CVA may progress with hypertension and rapid deterioration in consciousness; If not treated early, it can become a life-threatening emergency. We foresee that there will be further progress and acceleration in diagnosis and treatment, and these rates will decrease further, thanks to the developments in imaging methods. In CVA, it is crucial to distinguish primarily from ischemic or hemorrhagic, to determine the size and age of the lesion, the affected vessel or vessels if they are of vascular origin, and to evaluate the degree of influence of the vessel, and collateral status, to evaluate the salvaged parenchyma, and to choose treatment (5).

Pneumothorax is a life-threatening clinical condition frequently encountered in the emergency department and may require emergency treatment. Pneumothorax cases result from spontaneous, traumatic, and iatrogenic causes (6). In spontaneous pneumothorax, patients are often between 17-44 years; it is more common in smokers and is detected four times more in young and thin men than in women. Secondly, iatrogenic pneumothorax can be observed in intensive care units due to barotrauma due to mechanical ventilation or from some invasive procedures (such as central venous catheterization, thoracentesis, and surgery). Traumatic pneumothorax; It is a type of pneumothorax seen as a result of thoracic trauma. The most common clinical symptoms of pneumothorax are; symptoms such as chest pain and dyspnea (1). When pneumothorax reaches large volumes, and the patient has severe shortness of breath, it should be treated immediately. It is diagnosed clinically and radiologically. The patient's complaints are usually related to the area occupied by the pneumothorax and the patient's physiological reserves. Minor changes in lung volume are not symptomatic and cannot be detected during the examination. The diagnosis is made with the visceral pleural line around the collapsed lung on the posteroanterior chest X-ray (PAAC). The first step in emergency treatment is bed rest, oxygen therapy, observation, simple aspiration, closed underwater drainage, and tube thoracostomy.

A case with non-traumatic hemorrhagic CVA & spontaneous pneumothorax is a sporadic condition; In this case, if the intervention is delayed, life-threatening severe clinical tables could be observed. Because the patient cannot express herself when she lacks the unconscious, all system examinations should be done more carefully and thoroughly.

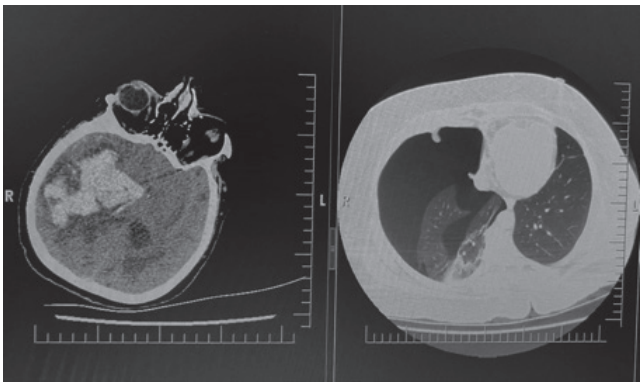

Figure 1: Thorax CT revealed pneumothorax in the right lung.

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Case Report
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Broca's Aphasia Caused by Hemorrhagic Stroke in a Young Patient: A Case Report

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Abstract

Broca aphasia is a non-fluent aphasia in which spontaneous speech output is markedly diminished, and normal grammatical structure is lost. We report a case of aphasia presenting different features of aphasia following cerebral hemorrhage in the left frontoparietal lobe, which includes Broca's area. A 25-year-old man presented to our emergency department with a headache, Broca aphasia, and difficulty in vision that started two days ago. Bilateral hemorrhagic areas were seen in dilated fundus examination. A CT scan was performed and showed multiple intracranial hemorrhages. Although stroke is considered a disease of the elderly, it can also be present among young people. An underlying malignancy may be the trigger for hemorrhagic ischemia. Injury to the frontal regions of the left hemisphere impacts how words are strung together to form complete sentences. This can lead to Broca's Aphasia.

Keywords: Broca's aphasia, Stroke, Hemorrhage

Introduction

Stroke is an acute neurological condition resulting from impaired cerebral perfusion due to ischemia (ischemic strokes) or bleeding (hemorrhagic strokes). Hemorrhagic strokes are further classified as intracerebral or subarachnoid. Clinically, strokes are characterized by acute-onset focal neurological deficits, including hemiparesis, paresthesia, and hemianopsia. Systemic hypertension and other cardiovascular diseases are common risk factors for both ischemic and hemorrhagic strokes. Age is the most important non-modifiable risk factor for both ischemic and hemorrhagic strokes, and arterial hypertension is the most important modifiable risk factor. (1).

Broca aphasia is a non-fluent aphasia in which the output of spontaneous speech is markedly diminished, and there is a loss of normal grammatical structure. The most common cause of Broca aphasia is a stroke involving the dominant inferior frontal lobe or Broca area (2). We report a case of aphasia presenting different features of aphasia following cerebral hemorrhage in the left frontoparietal lobe, which includes Broca's area.

Case report

A 25-year-old man presented to our emergency department with a headache, Broca aphasia, and difficulty in vision that started two days ago. The patient stated to have blurry eyes in the morning for a month. However, aphasia had just started before he came to the Emergency room. The patient has had no known past medical history and no medication use. The general situation was bad. Glasgow was 10. He was conscious but was disoriented and non-cooperated, with no verbal response. Blood pressure was 149/82, Pulse was 113, spO2 was 95%, and body temperature was 36 °C. Ophthalmologic examination showed that visual acuity of the right eye was 2 MPS, 0.1 MPS of the left eye. Intraocular pressures were normal bilaterally. DIIR +/+, no RAPD. Movements of globes were normal and without pain. (Figure 1). Bilateral corneas were lucent, and the anterior chambers were quiet. Bilateral hemorrhagic areas were

Hb (g/dL)	7.7	AST (UI/L)	72
WBC (× 10^3/µL)	532	ALT (UI/L)	46
Neutrophils (%)	8.27	LDH (UI/L)	1968
Monocytes (%)	305	CRP	28
Lymphocytes (%)	216	Blood culture	Staph. epidermidis
Eosinophils (%)	0.07		Micrococcus luteus
Basophils (%)	0.3	D dimer	31540
PLTS (× 103/µL)	45	Thrombocytes	45
Prothrombin (s)	>180	Hemoglobin	7.7
INR	>20		

Figure 1: Lab results

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seen in dilated fundus examination. A CT scan was performed and showed multiple intracranial hemorrhages. Hematomas were recognized in the left frontoparietal, left internal capsule, anterior corpus callosum, and the left temporal area. According to the patient's clinical course, the evaluation of the CT scan, low platelet, and increased INR value, surgical procedures were not considered by neurosurgery. The patient was followed in ICU for a while (Figure 2,3).

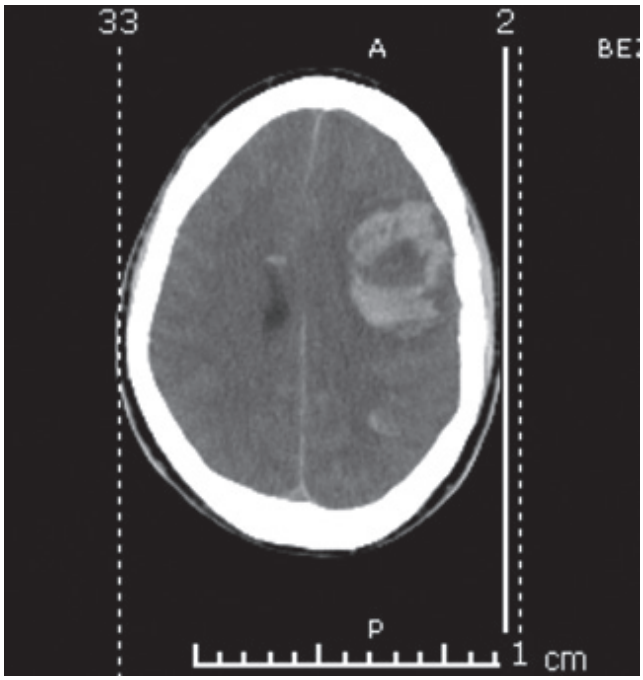

Figure 2: Tomographic image

Conclusion

Although stroke is considered a disease of the elderly, it can also be present among young people. An underlying malignancy may be the trigger for hemorrhagic ischemia. Injury to the frontal regions of the left hemisphere impacts how words are strung together to form complete sentences. This can lead to Broca's Aphasia. As a result of a lesion in the Broca area, there is a breakdown between one's thoughts and one's language abilities. Thus, patients often feel that they know what they wish to say but cannot produce the words. They cannot translate their mental images and representations into words. People with Broca's aphasia have damage that primarily affects the brain's frontal lobe. They often have right-sided weakness or paralysis of the arm and leg because the frontal lobe is also important for motor movements. Stroke is the most common cause of aphasia. When either ischemic or hemorrhagic stroke results in brain tissue damage in areas of the brain that are particularly important to speech and language, a person may develop aphasia (3,4). For most people, these areas are on the left side of the brain, although the right side of the brain is also involved in aspects of speech and language production. Depending on the size of brain tissue damaged during stroke, the loss of speech and language abilities may be temporary or long-term. The size of brain damage also affects how quickly and successfully a person can improve with speech therapy.

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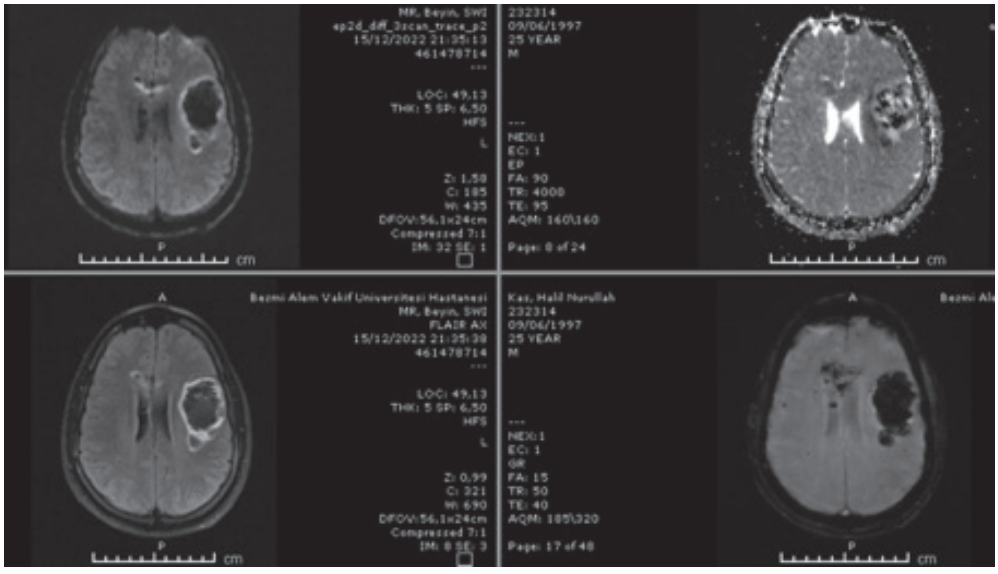

Figure 3: Diffusion MR image

Case Report
Eurasian Journal of Critical Care

Giant Cervical Tuberculous Lymphadenitis: Case Report

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Abstract

Objective: Tuberculosis (TB) is still a significant public health problem in developing and developed countries. Tuberculous lymphadenitis is the most common form of TB among extrapulmonary TB patients. Cervical region lesions can be confused with other lymphadenopathy diseases, making diagnosis difficult.

Case report: A 26-year-old male patient with no known disease presented to our Emergency Service with complaints of swelling on his neck that had been growing steadily for several weeks. Tuberculosis bacillus was detected when a lymph node biopsy was taken and examined from the patient, whose lymphadenitis was thought to be in the foreground.

Conclusion: This article aims to emphasize that tuberculosis infection, which is a specific infectious agent, should be considered in the differential diagnosis of the case presenting with cervical swelling. The diagnosis can be made quickly with a simple and inexpensive imaging method such as ultrasound.

Introduction

Tuberculosis (TB) is an important public health issue in developing countries, but it is also important in developed societies because of the frequency of immunosuppressive diseases. Mycobacterium tuberculosis is mainly spread through the respiratory tract and the risk of transmission is therefore very high. Although it is most commonly seen in the lungs, it can also be localized in the lymph nodes in the head and neck region, mouth, tonsil, tongue, nose, epiglottis, larynx and pharynx extrapulmonary. TB lymphadenitis is the most common extrapulmonary manifestation of TB, representing 30-50% of cases (1). The posterior cervical triangle and supraclavicular area of the neck are the most common areas of TB lymphadenitis (2). Cervical lymph adenitis is mainly unilateral (3). In cases of cervical lymphadenitis, a detailed examination is necessary, as there are often no signs of pulmonary TB. However, it is sometimes rather difficult to diagnose.

As TB lymphadenitis develops, the lymph nodes initially swell, stick together and necrosis occurs, then an abscess may develop, and fistulization may occur (4). The PPD (Purified Protein Derivative) test is not reliable in adults with TB lymphadenitis. The definitive diagnosis is established by detecting TB bacillus in the lymph node material and by showing granulomatous inflammation with necrosis in the pathological report. Apart from conventional techniques (cytology, staining, and cultivation), PCR tests can be applied for early and rapid diagnosis. Classic anti-tuberculosis drugs are used in the treatment. Surgical treatment can be tried in the presence of lymph nodes that do not shrink despite treatment, are draining, and fistulized in the respiratory tract.

According to the literature, since the most common cause of cervical lymphadenopathy (LAP) is oncology, the clinician plans the examinations according to this situation (5).

In this article, a case of cervical lymphadenopathy will be examined, in which all possibilities are rapidly addressed.

Case

A 26-year-old male patient was admitted to our Emergency Department with complaints of swelling on the right side of the neck that had been increasing and hardening for a few weeks, fever that increased intermittently, weakness, and loss of appetite. It was learned that the patient worked in a crowded environment. The patient doesn't drink alcohol and doesn't smoke. No known history of chronic disease. When examined, there were palpable and interrelated swellings, the largest of which was about 4-5 cm along the right cervical lymphatic chain on the neck (Figure 1). There was no redness or discharge from the swelling area. Temperature: 37.7, blood pressure and saturation level were within normal limits. Hemograms, biochemistry, rheumatic

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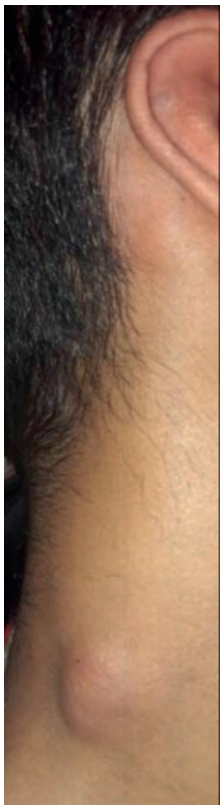

Figure 1: Massive swelling of the right neck

and hepatic markers, C-RP (C-reactive protein), syphilis, Brucella, and cancer screening tests were within normal limits. An otolaryngologist was consulted, and chest X-ray and neck ultrasound (USG) examinations were performed. No pathology was observed in the X-ray taken (Figure 1: Massive swelling of the right neck)

Lymph nodes of pathological size and characteristics were not detected in the axillary and inguinal regions. Conglomerated lymph nodes with cystic necrotic areas compatible with TB lymphadenitis were detected in the cervical ultrasound (Figure 2). The patient was referred to the university hospital for further examination and therapy. He was scheduled for surgery and at that time, it was learned that a discharge started from the swelling in his neck. In the magnetic resonance imaging (MRI) of the neck taken to the patient before scheduled surgery; Conglomerated lymphadenopathy with lobulated contours, filling an area of 118x45x24 mm in the right cervical chain, including septa and cystic necrotic areas were detected. Abscessed LAPs showing diffusion restriction were observed (Figure 3a-b). (Figure 2: Grayscale ultrasound images of the cervical region; Conglomerated lymph nodes with a hypo-anechoic heterogeneous echo pattern and intranodal necrosis (white arrows). Figure 3 a-b: T2W coronal and axial MR images of the cervical region; Cystic necrotic mass consistent with conglomerated LAP described on ultrasound in the right posterior cervical region.)

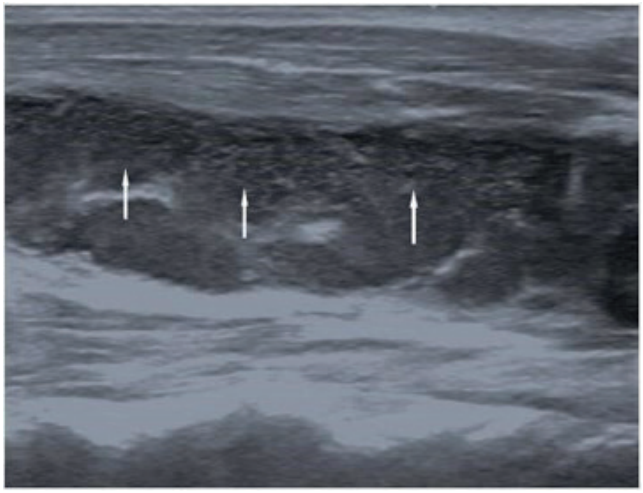

Figure 2: Gray scale ultrasound images of the cervical region

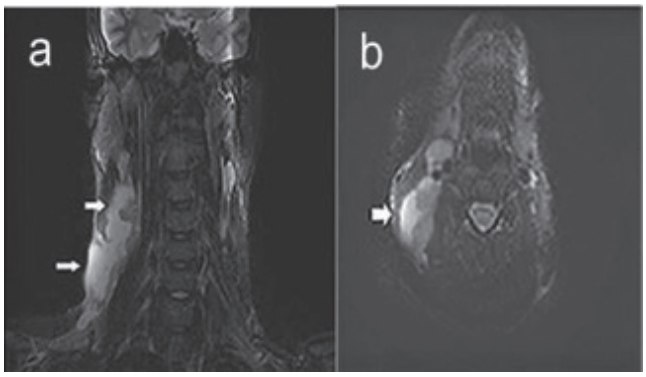

Figure 2: a-b: T2W coronal and axial MR images of the cervical region

Because the wound discharge did not decrease after the operation, the patient underwent an operation for the second time. M. Tuberculosis was detected in the surgical material by PCR test. At the time this article was written, the patient's treatment was over. The discharge from his neck stopped, and the wound was closed. Findings were normal in the control X-ray.

The case report has been written in an anonymous characteristic, thus secret and detailed data about the patient has been removed. Editors and reviewers can know and see these detailed data. These data are backed up by the editor and by reviewers.

Discussion

TB affects more elderly people in developed countries, and all age groups, particularly young people in developing countries. In our country, which is included in the group of developing countries, the incidence of TB cannot decrease at the expected level and still maintains its characteristic of being a disease of the young population (6). The patient in this study was also a member of the youth patient group.

TB lymphadenitis; is the most common form of TB in the extrapulmonary TB group. It may be confused with other diseases leading to lymphadenopathy in the involvement of the cervical region. Clinical outcomes are non-specific and can mimic other illnesses and complicate diagnosis. The coexistence rate for extrapulmonary and pulmonary TB

is 60% (7). Coexisting with the cervical region is rare. In this case, the extrapulmonary finding was not accompanied by pulmonary TB. As such, it has compatibility with the literature.

There is limited data available in the literature on lymphatic node size in patients with cervical TB lymphadenitis. Malignant/metastatic lymph nodes were reported to be larger than TB lymphadenitis (2). Gautam et al. found that 52.85% of cervical TB lymphadenitis was measured as 3-6 cm (8). The size of the cervical lymph node of the patient in this study is larger than those in other articles on this topic. Therefore, these data can contribute to the literature.

The presence of conglomerated lymph nodes and necrotic zones observed on the USG are important findings for the diagnosis of TB (3). In this patient, the preliminary diagnosis was made by ultrasound examination. However, a definitive diagnosis was made by PCR test performed after an excisional biopsy.

The mean time to diagnosis in patients with TB lymphadenitis was reported as 128 days. However, studies in our country have shown that this period is longer than acceptable for pulmonary and extrapulmonary TB (9). The time from the onset of our patient's complaints to the final diagnosis did not exceed 40 days. In this case, the diagnosis can be said to be quicker than in the literature. Classic anti-TB drugs are administered to treat TB lymphadenitis. 9 months of therapy have been planned for our patient; the symptoms completely disappeared during the treatment.

Conclusion

In summary; there is no specific marker to diagnose cervical TB lymphadenitis. A strong suspicion is important for diagnosis. In cases of necrotic and conglomerated lymph nodes on USG, it is important to beware of TB lymphadenitis in radiology reports. Therefore, ultrasound, which is a non-invasive, inexpensive, and easily accessible method, should be preferred first.

In this text, we tried to emphasize that specific infectious pathologies should also be considered in the diagnosis when unilateral, gigantic lymphadenopathy is seen in the patient who came to the emergency department with neck swelling; detailed consideration and rapid action should be taken, thus detecting the source of the disease and reducing the risk of the spread of the disease.

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Case Report
Eurasian Journal of Critical Care

Charcot Arthropathy and Osteomyelitis: A Case of Diabetic Foot Syndrome

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Abstract

Diabetes mellitus is a disease that affects millions around the globe. It also comes with a major complication, diabetic foot ulcers. Lower extremities having little to no vascularity in diabetic people leads to wounds that are unable to heal on their own. These wounds later become infected and cause osteomyelitis, a condition in which the infection in soft tissues of the lower extremities spread to the bones of the foot. Charcot arthropathy is one of the more serious foot issues that can arise from diabetic neuropathy. The soft tissues, joints, and bones of the foot or ankle are all impacted by Charcot. The joints in the foot or ankle might dislocate when the bones deteriorate and become brittle. Diabetes patients who have their soft tissues and bones infected might even have to get their extremities amputated if not managed right on time. We describe the case of a 66-year-old man with type 1 diabetes mellitus who presented to the emergency department with increasing pain in the right foot. There was a hyperemic discharge coming out of his wound which increased gradually over time. The patient's been using Lantus and Novorapid and his blood glucose measurement at the time of admission was 466. Our patient said that he was hospitalized in the intensive care unit due to diabetic ketoacidosis 20 days before he applied to our emergency department, and his wounds, discharge, pain, and redness increased after this incident. We requested his anteroposterior and lateral radiographs of the right foot and a lower extremity CT. The scans were examined carefully and at last, amputation was recommended for the patient. The patient did decline our offer and wanted to go home with a dressing. Ampicillin/sulbactam and ciprofloxacin were started. We also recommended he see infectious diseases and plastic surgery consultants in the following days.

Keywords: Charcot arthropathy, Osteomyelitis, Diabetes

Introduction

Diabetes mellitus (DM) affected approximately 382 million people worldwide in 2013 (1). One of the most important complications of diabetes; diabetic foot ulcers (DFU) are associated with significant impairment of quality of life, increased morbidity and mortality, and are a huge drain on health care resources. In Western countries, the annual incidence of foot ulceration in the diabetic population is around 2% (1). Osteomyelitis is one of the most common expressions of diabetic foot infection, being present approximately present in 10%-15% of moderate and 50% of the severe infectious process. Approximately 60% of diabetic foot ulcers (DFUs) are complicated by infection. Diabetic foot osteomyelitis (DFO) is mostly the consequence of a soft tissue infection that spreads into the bone, involving the cortex first and then the marrow. The possible bone involvement should be suspected in all DFUs patients with infection clinical findings, in chronic wounds, and in case of ulcer recurrence (2). Infected wounds usually show purulent secretions or at least two signs of inflammation (swelling, erythema, blood serum secretion or simply blood with or without bone fragments) (2). However, DFO can occur without any local sign of inflammation. Systemic symptoms such as fever and malaise are rare, especially in the case of chronic osteomyelitis. People with diabetes are more susceptible to infection than non-diabetics, particularly when diabetes is poorly controlled, as hyperglycemia impairs the immune response to infection. Despite this, the diagnosis of infection is often delayed or the extent of infection underestimated, providing the opportunity for infection to progress to the bone in a high proportion of foot ulcers in diabetics (3). Diabetic fracture being another important complication of diabetic osteomyelitis is a significant co-morbidity of both type I and type II diabetes and is characterized by microarchitectural changes that decrease bone quality. Charcot foot is a rare but serious complication that can affect persons with peripheral neuropathy, especially those with diabetes mellitus Charcot affects the bones, joints, and soft tissues of the foot or ankle. A deformed foot can cause pressure sores to develop in the foot or ankle. An open wound with foot deformity can lead to an infection and even amputation (3). The abrupt effect of diabetic ketoacidosis on the exacerbation of diabetic foot ulcers or possibly osteomyelitis is not well defined. More

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research is required to clarify the mechanistic pathway mentioned above and the early precautions measures that might prevent the progression of the deformities to some extent that's possible.

Case

A 66-year-old man presented in the emergency department with burning, wound, discharge, and pain in the right foot. There was no history of trauma. The patient, who has been suffering from diabetes for 25 years, was admitted to the intensive care unit outside the city 25 days ago and stayed there for 4 days with the diagnosis of diabetic ketoacidosis. He has hyperemic discharge in his foot that started from that time and gradually increased. The patient said that he was using Lantus and Novorapid and that his home blood glucose measurements were normal. Examination revealed finger stick blood sugar of 477, pulse of 100 per minute (regular), blood pressure of 117/69 mmHg, and respiratory rate was 17 per minute. Oxygen saturation was 97 on air. Chest, cardiovascular, and abdominal examination was normal. At the patient's admission today, his blood sugar was 466 and his CRP was 144. The patient's HbA1c 1 month ago was 12.1 and the corrected Na was 130. Anteroposterior and lateral radiographs of the right foot and non-contrast lower extremity CT were requested from the patient.

Discussion

Diabetes mellitus is a chronic systemic disorder that can cause vascular, infectious, and neuropathic problems as well as bone and joint problems. Foot ulcers develop in about 15 % of patients with diabetes and foot disorders are the leading cause of hospitalization for patients with diabetes. It typically results from poor glycemic control, underlying neuropathy, peripheral vascular disease, or poor foot care and it is associated with an increased risk of lower limb fractures (4). Untreated and severe wound infections are likely to cause osteomyelitis which increases the rate of diabetes-related amputations. To be able to prevent serious outcomes, early diagnosis and usage of antibiotics should be considered in the first place. Osteomyelitis is one of the most common complications of diabetic foot ulcers which happens to be present in approximately %10-15 of moderate and %50 of severe wound infections. DFO is more likely to be present when the foot ulcer is deeper than 3 mm, compared with a shallower ulcer (82% vs. 33%, respectively) (5). The wound seen is important in this respect. The bone infection may also progress to necrosis, secondary abscess and extension into soft tissue, and eventually extremity amputation. %15 of patients with diabetic foot ulcers complicated with osteomyelitis will require amputation. Radiologic imaging may reveal osteomyelitis in a manner similar to that of a fracture. While a fracture is typically accompanied by prior trauma, the absence of trauma may indicate osteomyelitis more clearly. Our patient had no history of trauma. Complications were explained to the patient and amputation was recommended. The patient stated that he wanted to continue care with dressing and antibiotic treatment. Charcot neuro-osteoarthropathy (CN) is an infrequent but severe complication of diabetic peripheral neuropathy that is estimated to affect 0.8%–8% of the diabetic population. The use of immunosuppressive agents such as corticosteroids for kidney and/or pancreas transplantation appears to be a probable cause of the high rate of Charcot's foot in the diabetic patient population. Our patient had no history of transplantation or steroid use. Diabetic ketoacidosis (DKA), on the other hand, is a well-recognized emergency of inadequately controlled diabetes mellitus that causes high mortality and morbidity. DKA is traditionally defined by the triad of hyperglycemia (>250 mg/dL [>13.9 mmol/L]), anion-gap acidosis, and increased plasma ketones (6). Diabetic ketoacidosis (DKA) occurs commonly in people who have type 1 diabetes. However, people who have type 2 diabetes may also develop diabetic ketoacidosis. Our patient said that he was hospitalized in the intensive care unit due to diabetic ketoacidosis 20 days before he applied to our emergency department, and his wounds, discharge, pain, and redness increased after this incident (7). To our knowledge, there has been no evidence presented, regarding the effect of diabetic ketoacidosis on

Figure 1: Anteroposterior radiograph demonstrates diffuse degenerative changes and subluxation were observed in all metatarsal bones. Distal metatarsals were not observed in the 2nd 4th and 5th fingers. Destructed appearance secondary to widespread degeneration in the distal metatarsal of the third finger. A subluxation to the dorsum of the foot in the medial cuneiform near the first toe and a fistulous appearance to the skin were observed at this level.

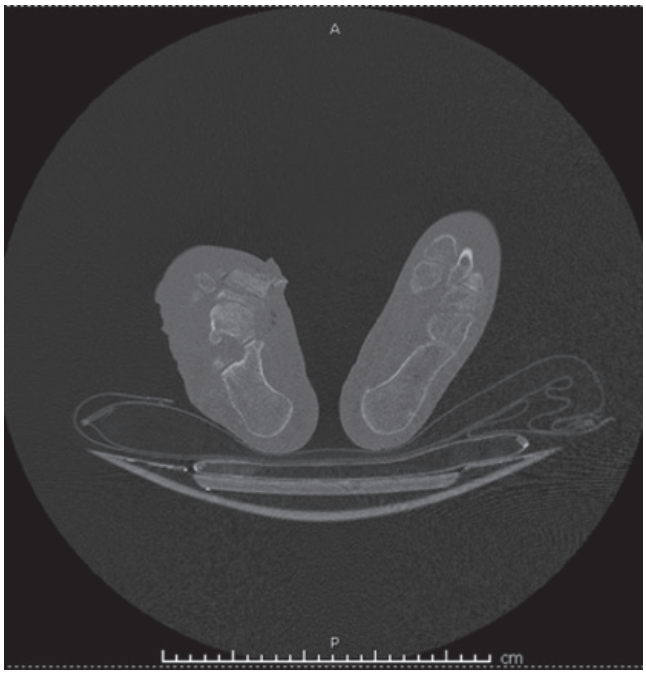

Figure 2: Non-contrast lower extremity CT was consistent with Charcot foot, diffuse soft tissue infection, osteomyelitis. It was not evaluated in favor of necrotizing fasciitis, emergency surgery was not considered.

the exacerbation of diabetic foot ulcer wounds and infection. The common causes of DKA are missed doses of insulin, illness or infection, and undiagnosed or untreated diabetes. We believe that our patient's DKA attack may have been triggered by the recent infection.

Figure 3: Bone protruding beyond the skin on the medial side of the right foot.

Conclusion

Due to the lack of symptoms and the clinician's low level of suspicion, neuropathy-related foot damage is commonly detected later than it should be. When assessing for a foot infection or osteomyelitis, clinicians should take into account the risk factors (such as the existence of foot ulcers larger than 2 cm, uncontrolled diabetes mellitus, poor vascular perfusion, and concomitant disease). Erythema, induration, soreness, warmth, and drainage are signs of infection. These signs arouse suspicion and call for a constellation of further investigations. Imaging techniques, including X-rays, are one of them and are frequently used to map the diagnosis, progression, and course of treatment for osteomyelitis.

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