


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 department 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

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): $8.62 \pm 1.845 \times 10^9/L$, hemoglobin 13.31 ± 1.655 g/L, hematocrit $40.16 \pm 3.446\%$, aspartate aminotransferase (AST) 16.69 ± 5.688 IU/L, alanine aminotransferase (ALT) 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
Systolic 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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