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Research article
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Ten years ago, what was the main etiology of intestinal obstructions? Historical perspective: A retrospective cohort study

On yıl önce intestinal obstrüksiyonların ana etiyolojisi neydi? Tarihsel Bakış: Retrospektif kohort çalışma

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Abstract

Aims: Etiology of intestinal obstruction differs between countries. This study was designed to review a large series of patients with intestinal obstruction in an attempt to represent our historical aspect of experience in Turkey 10 years ago.

Methods: A review of the charts of 1387 patients admitted for intestinal obstruction during an 8-year period (2000 through 2007) was carried out.

Results: Cases were divided into two groups. Group A consisted of 1186 (85.5%) patients underwent operation. The remaining 201 (14.5%) patients managed non-operatively constituted group B. External strangulated hernias (inguinal, femoral, umbilical and incisional) were the most common cause of intestinal obstruction in group A, accounting for 46% of cases. Neoplasms and adhesions were common cause accounting for 19% and 18% of cases respectively.

Conclusion: External hernias are the most common cause of intestinal obstruction in our hospital. Increased efforts to repair external hernias electively before strangulation occurs are likely to reduce the incidence. Some major changes in etiology rank are present in current literature. New studies have to be performed to reveal current condition.

Keywords: Intestinal obstruction, Etiology, Hernia, Adhesions, Neoplasms

Öz

Amaç: İntestinal obstrüksiyon etiyolojisi ülkeler arasında farklılık göstermektedir. Bu çalışma Türkiye'deki 10 yıl önceki deneyimlerimizi temsilen geniş bir hasta serisini sunmayı amaçlamaktadır.

Metod: Sekiz yıllık sure içerisinde (2000 – 2007) intestinal obstrüksiyon nedeniyle başvuran 1381 hastanın dosyası incelendi.

Bulgular: Olgular iki gruba ayrıldı. A Grubunu ameliyata alınan 1186 (%85.5) hasta oluşturdu. Geriye kalan 201 ameliyat dışı tedavi uygulanan hasta B grubunu oluşturdu. Eksternal boğulmuş fıtıkların (%46) (inguinal, femoral, umblikal ve insizyonel) A grubu içerisinde intestinal obstrüksiyona sebep olan en sık neden olduğu saptandı. Tümör ve adezyonlar; %19 ve %18'lik oranla sık görülen nedenler içinde yer aldı.

Sonuç: Eksternal herniler intestinal obstrüksiyon nedenleri arasında en sık neden olarak saptandı. Eksternal hernileri olan hastaları elektif şartlarda boğulma gerçekleşmeden ameliyata teşvik etmek bu sıklığı düşürebilir. Mevcut literatürde etiyoloji sıralamasında bazı önemli değişiklikler mevcuttur. Yeni çalışmalar mevcut durumu ortaya çıkarmak için yapılmalıdır.

Anahtar kelimler: İntestinal obstrüksiyon; Etiyoloji, Fıtık, Adezyon, Tümör

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Introduction

Intestinal obstruction is a common condition and accounts for a large percentage of surgical emergency admissions [1]. This condition can be fatal unless adequately treated. The management of patients with intestinal obstruction is controversial. In literature, recommendations range from early operations on all patients to prolonged non-operative management [2, 3]. Surgery evolves and changes in thought, techniques and acknowledgment over time. As time passes, these changes occur in all branches of medicine. One part of the medicine is to inform population about an illness and possible complications of it.

Sequence of etiology of intestinal obstruction varied over time. But this study was designed to review a large historical series of patients with intestinal obstruction in an attempt to represent our experience in Turkey 10 years ago. Main aim of historical perspective of this study was to increase awareness of main changes in current surgical attitude.

Material and methods

Descriptive retrospective cohort study is designed, and the universal principles of the 1964 Declaration of Helsinki and its later amendments were applied. Informed consent was not received due to the retrospective nature of the study. This research was conducted according to the principles of the World Medical Association Declaration of Helsinki "Ethical Principles for Medical Research Involving Human Subjects".

During an 8-years period (2000 through 2007), 1508 patients were admitted for intestinal obstruction at Istanbul Education and Research Hospital, Turkey. A review of the charts of all patients was carried out. 121 charts having incorrect documentation were discarded. In the remaining 1387 cases studied (854 men, 533 women; age range, 18-92 years; mean, 56±15 years) presenting complaints, past history of illness, clinical findings and type of management undertaken, medical or surgical, was recorded. For patients surgically treated, operative findings were identified.

Statistical calculations were performed using IBM SPSS 22 (IBM SPSS, USA). Variables are expressed as mean ± standard deviations (SD) or as medians (range) depending on their distribution. Categorical variables were expressed as frequencies and percentages.

Results

A total of 1387 cases of intestinal obstruction were reviewed. Abdominal pain and vomiting were present in 1040 (74.9%) cases. Other common complaints included abdominal distention and constipation. Past history records revealed previous laparotomy in 282 (20.3%) cases and comorbid conditions including cardiovascular and pulmonary disease in 163 (11.7%) cases.

Cases were divided into two groups. Group A consisted of 1186 (85.5%) patients underwent operation (Table 1). Among these cases, 915 (77.1%) patients underwent operation within 6th hours from admission. The remaining group A patients treated conservatively and operated when non-operative management failed. The remaining 201 (14.5%) patients managed non-operatively constituted group B.

Table 1: Common cause of obstruction in group A.

Group A (n: 1186, 85.5%)	n	%
External strangulated hernias	551	46.4
Neoplasms	226	19
Adhesions	220	18.5
Volvulus	69	5.8

External strangulated hernias (inguinal, femoral, incisional, umbilical and epigastric) were the most common cause of intestinal obstruction in group A, accounting for 46.4% of cases. Neoplasms and adhesions were common cause accounting for 19% and 18.5% of cases respectively. The remaining differing pathologies accounted for 16% of cases; including volvulus, Crohn's disease, bezoars and gallstone (5%, 2%, 2%, 0.1%).

Distribution of external strangulated hernias was shown in table 2. Among the hernia cases, inguinal hernias were the most common form accounting for 58.9%. Intestinal resection was applied to 9.8% of hernia cases, and ostomy procedure was applied to 2.3% of cases. Distribution of neoplasms was shown in table 3. Among the malignancy cases, rectosigmoid area was the most common site of tumor accounting for 52.6%. Intestinal resection and ostomy procedures were recorded more common in malignancy group accounting for 76% and 62% of cases respectively. Ninety percent of adhesion cases had had previous abdominal surgery. Intestinal resection and ostomy procedure were applied to 28% and 7% of group A cases, respectively.

Table 2: Distribution of external strangulated hernias as cause of intestinal obstruction.

External strangulated hernias (n: 551)	n	%
Inguinal	324	58.9
Femoral	105	19
Incisional	59	10.7
Umbilical	53	9.6
Epigastric	10	1.8

Table 3: Distribution of neoplasms as cause of intestinal obstruction.

Neoplasms (n: 226)	n	%
Rectosigmoid	119	52.6
Cecum	31	13.7
Right colon	22	9.8
Small bowel	22	9.8
Left colon	17	7.5
Transverse colon	15	6.6

The postoperative mortality rate for group A patients was %12. Comorbid conditions were present in %82 of mortal cases. There was no mortality in group B.

Conclusion

In literature, non-mechanical small intestinal obstruction (IO) is the most common form of IO occurring after most abdominal operations. Mechanical small IO is less common condition that occur secondary to intra-abdominal adhesions, hernias or cancer in about most of the cases [4]. The most

common cause of small IO is adhesions (58-74%) in developed countries. External hernia accounts for 2% to 16% of cases [5 – 9]. In the present series, the obstruction was located in small intestine in 74.8% of all cases. In group A, leading causes of small intestinal obstruction were hernia (65%) and adhesions (26%).

Other less common causes of small intestinal obstruction in the literature are volvulus, Crohn's disease, bezoars and gallstones [5, 10 – 12]. In the present series, Crohn's disease and bezoars accounts for 4% of cases of group A and two cases of gallstone obstruction was observed.

Mechanical colonic obstruction accounts for 10% of all cases of mechanical obstruction and most often develops in response to obstructing carcinoma, volvulus or diverticulitis [1, 9]. In the present series, colonic obstruction constituted 25% of all cases. The leading causes of colonic obstruction were neoplasms (64%) and volvulus (17%).

Assuming that most patients who recovered without operation (group B) had adhesions as the cause of obstruction [13], adhesions account for 40.5% of all cases of small intestinal obstruction. Although this assumption, our study reveals that external hernias are still the most common cause of small intestinal obstruction with the ratio of 52.9%.

In developed countries, the incidence of abdominal adhesions is increasing as more abdominal operations are being performed, and the more patients are having their hernias repaired electively and are therefore in little danger of subsequent obstruction. Although elective hernia operations has been performing effectively in our hospital for many years, people in the population which our hospital serves, usually have asymptomatic hernia for many years and do not appreciate the potential complications of their condition.

Our mortality rate of 12% is consistent with the recent reports [14, 15]. Intestinal resection was applied to 28% of cases of group A. Among external hernia cases, 54 patients had intestinal resection and mortality rate was 6%.

Main limitation of this study was its retrospective design, and this condition might limit the reliability of our conclusions. But large number of patients within long period of time as strength of the study softens this limitation. Future larger studies comparing 10 years earlier and recent years with statistical analyses would be of interest.

In conclusion, external hernias are the most common cause of intestinal obstruction in our hospital 10 years ago. Increased efforts to repair external hernias electively before strangulation occurs are likely to reduce the incidence and mortality from intestinal obstruction. To achieve this, further research and population education programs are needed. After getting knowledge about current condition of intestinal obstruction etiology by literature review, historical perspective of this study was shown that surgical attitude was changed, and population education is performed well.

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Research article
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Retrospective evaluation of patients presenting with acute abdominal pain in the green area of emergency clinic: A cohort study.

Acil servis yeşil alana akut karın ağrısı ile başvuran hastaların retrospektif değerlendirilmesi: Kohort çalışma

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Abstract

Aim: In emergency services applications, patients are stable as a general condition and have simple health problems that may be provided outpatient treatment, are defined as green area patients. Abdominal pain is a common cause of referral to the emergency clinic. In our study, patients admitted to our hospital with acute abdominal pain in the emergency room green areas were evaluated in all respects.

Methods: A retrospective observational study was designed to evaluate patients presenting with acute abdominal pain in green areas. The sample group consisted of 342 patients. Diagnosed / pre-diagnosed patients were identified as specific diagnosis. Diagnosis unclear patients were identified as non-specific diagnosis. Results are evaluated in two categories: 1. Inpatient treatment (surgical or medical treatment), 2. Outpatient (medical treatment).

Results: The values of hematologic parameters such as BASO%, HCT, PDW, RBC and RDW were statistically significant different between the groups of specific and nonspecific diagnosis. (p in order 0.049, 0.003, 0.015, <0.001 and 0.005). Also a statistically significant difference was found in LY%, MO#, NEU#, NEU%, WBC values between discharged from inpatient and outpatient clinic control groups (p <0.0001, 0.0002, <0.0001, <0.0001 and <0.0001, respectively).

Conclusion: Although non-specific acute abdominal pain is the most common cause of referral to the emergency services green area, careful history, physical examinations and inspections for detection of acute abdominal pain in our patients are guiding us.

Keywords: Emergency services, Green area, Acute abdominal pain

Öz

Amaç: Acil servis başvuruları içinde genel durumu itibariyle stabil olan ve ayaktan tedavisi sağlanabilecek basit sağlık sorunları bulunan hastalar, yeşil alan hastaları şeklinde tanımlanmıştır. Karın ağrısı acil kliniklere sık başvuru nedenlerindendir. Çalışmamızda hastanemiz acil servis yeşil alana akut karın ağrısı ile başvuran hastalar tanısal açıdan çok yönlü değerlendirildi.

Materyal ve Metod: Yeşil alana akut karın ağrısı ile başvuran hastaları değerlendirmek üzere retrospektif gözlemsel çalışma planlandı. Örneklem grubu 342 hastadan oluştu. Tanı / ön tanı konulan hastalar spesifik tanı olarak belirlendi. Tanısı belirli olmayan hastalar nonspesifik tanı olarak değerlendirildi. Hastaların sonuçlanması iki kategoride değerlendirildi; 1. Yatarak (ameliyat veya medikal tedavi), 2. Ayaktan (Medikal tedavi).

Bulgular: Karın ağrısı nedeniyle spesifik ve nonspesifik tanı alan grupların hematolojik parametrelerden BASO%, HCT, PDW, RBC ve RDW değerleri arasında istatistiksel anlamlı farklılık saptandı (p sırasıyla 0,049, 0,003, 0,015, <0,001 ve 0,005). Ayrıca karın ağrısı nedeniyle tanısı konulan ve yatarak veya ayaktan poliklinik kontrolü ile taburcu edilen grupların LY%, MO, NEU, NEU%, WBC değerleri arasında da istatistiksel anlamlı farklılık saptandı (p sırasıyla <0,0001, 0,0002, <0,0001, <0,0001 ve <0,0001).

Sonuç: Acil servis yeşil alana akut karın ağrısı ile en sık başvuru nedeni nonspesifik karın ağrısı olmakla birlikte dikkatli öykü, fizik muayene ve tetkikler, spesifik akut karın ağrılı hastaları saptamamızda bize yol gösterici olmaktadır.

Anahtar kelimeler: Acil servis, Yeşil alan, Akut karın ağrısı

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Introduction

Hospital emergency services in the world and Turkey provide uninterrupted 24 hours and fast health service, and this leads to high patient densities in developing countries due to patients who are out of scope of emergency. The number of patients admitted to emergency services due to acute abdominal pain is higher than average [1-4]. The definition of pain before the definition of acute abdominal pain; According to the recognition conducted by the International Association for the Study of pain; it is defined as "an anti-sensory and emotional experience" and "pain prevention mechanism" that accompanies or can be identified by damage to existing or possible tissue damage. According to this definition, pain is always subjective because it is a sensation and not a pleasing structure. Therefore, it is necessary to consider both physical and non-physical components when evaluating the pain experience. Pain is actually a concept, and it differs greatly from one person to another, because many factors (gender, religion, language, race, socio-cultural environment) determine the pain threshold, hence the reaction to painful stimuli. In this regard, the pain should be treated as real, even if no indication of an objective is detected immediately psychologically. "Acute abdominal pain" is defined as abdominal pain that starts in the last week [1, 2].

For any reason, approximately half of the patients admitted to the emergency service also complain about abdominal pain. Approximately 5-10% of all patients admitted to the emergency room have abdominal pain. Approximately 20 to 25% of patients suffering from abdominal pain are patients requiring emergency hospitalization in the hospital, while the 35-40% of the examinations were not found, no pathology, no known abdominal pain forms and often passed spontaneously nonspecific abdomen creates painful patients [2, 3].

Green area application in emergency program revealed some other challenges [4]. In this study, we aimed to evaluate patients with acute abdominal to reveal laboratory difference to overcome challenging situations in emergency.

Material and methods

Retrospective observational study was planned to assess patients presenting with acute abdominal pain in emergency service of Umraniye Education and Research Hospital. Sample size was chosen as 262 persons to predict the determination of the difference between 10-15% and 90% of the 12,264 abdominal painful patients who admitted to the green area in 2015. In statistical assessments, 80 people were added to reduce the margin of error and the final sample size was determined as 342. Patients who have lack of information or examinations were excluded from the study.

Patients were compared according to the hematologic parameters (BASO: Basophil, EOS: Eosinophil, HCT: Hematocrit, HGB: Hemoglobin, LY: Lymphocytes, MCH: Average hemoglobin quantity, MCHC: Average erythrocyte hemoglobin concentration, MCV: Average erythrocyte volume, MO: monocytes, MPV: Average platelet volume, NEU: Neutrophil, PTC: Platelet hematocrit, PDW: Platelet dispersion width, PLT: Platelet count, RBC: Red blood cell, RDW:erythrocyte Dispersion width, WBC: leukocytes). Advanced imaging techniques, gender, age, accompanying nausea, vomiting and anorexia, and the final diagnosis were recorded. As a result of the diagnosis and the patient's bed and outpatient clinic control and hospital records were evaluated.

Final diagnosed or pre-diagnosed patients were identified as “specific diagnose”. Patients who were not diagnosed were evaluated as “nonspecific diagnose”. Specific diagnoses were; appendicitis, gastroenteritis, hepato-pancreatico-biliary diseases (pancreatitis, acute cholecystitis, biliary colic, acute cholangitis), gynecological diseases, renal system diseases (renal colic, ureterolithiasis, epididymitis, cystitis), dyspepsia. The outcome of the patients were evaluated in two categories; 1. Inpatient (patients who received surgery and medical treatment inpatient), 2. Outpatient (patients who discharged with medical treatment or no treatment required).

Descriptive statistics were used to define continuous variables (mean, standard deviation, minimum, median, maximum). The difference between the two independent groups that conform to the normal distribution is examined by the Student T-test. The difference between the two independent groups that do not conform to the Normal distribution is examined by Mann Whitney U test. The relationship between categorical variables was tested using the Ki-squared or Fisher exact test. Statistical significance level is determined as 0.05. The analyses were conducted using the MEDICALC statistical software version 12.7.7 (MedCalc Software bvba, Ostend, Belgium; http://www.medcalc.org; 2013) program.

Results

Three-hundred-and-forty-two patients with acute abdominal pain are evaluated. The mean age of the patients was 34.4 ± 15.6, and the male/female ratio was 106/236 years. The patients were diagnosed with a specific diagnosis of 187 (54.7%) and 155 (45.3%) were evaluated as nonspecific diagnoses. 187 cases with specific diagnoses; 95 cases of renal system diseases, 24 cases of acute gastroenteritis, 23 cases gynecological disease, 20 cases of dyspeptic disorders, 10 cases of acute appendicitis, 8 cases of hepatopancreaticobiliary disease and 7 cases had other diagnoses.

BASO#, BASO%, EOS#, EOS%, HCT, HGB, LY#, LY%, MCH, MCHC, MCV, MO#, MO%, MPV, NEU#, NEU%, PCT, PDW, PLT, RBC, RDW and WBC distributions are graphically illustrated (Figure 1).

The gender distribution was as follows; the specific (n = 187; 60 (38.7%) males, 95 (61.3%) females) and nonspecific (n = 155; 46 (24.6%) males, 141 (% 75.4) females) group. There was a statistically significant difference between groups in terms of gender distribution, and this difference was seen due to the female patient surplus in the specific diagnosis group ($p<0.05$).. There was no statistical difference between the groups and the age of patients ($p>0.05$).

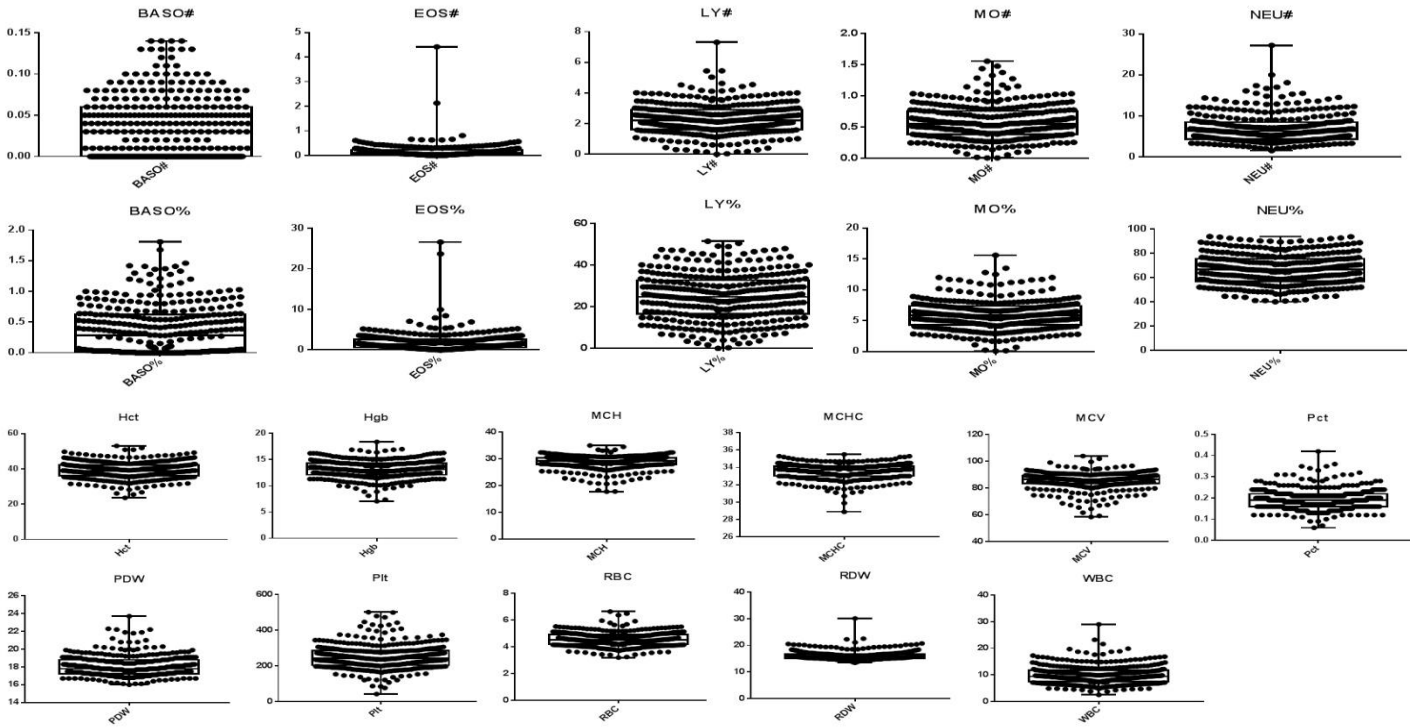

Figure 1: Distributions of the parameters

The BASO%, HCT, PDW, RBC, and RDW values differ significantly between groups (p=0.049, 0.003, 0.015, <0.001 and 0.005, respectively)(Table 1). There were no differences between the groups and remaining parameters (BASO, EOS, EOS%, HGB, LY, LY%, MCH, MCHC, MCV, MO#, MO%, MPV, NEU#, NEU%, PCT, PLT, WBC (all p>0.05).

Table 1: Significant statistics of parameters

	BASO%	HCT	PDW	RBC	RDW
Non-specific group					
N	155	155	155	155	155
Mean	0.4232	40.0697	18.2291	4.6803	16.2890
Med.	0.3600	39.6000	17.9000	4.6300	15.9000
St.Dev.	0.42580	4.89953	1.16953	0.55753	1.60197
Min.	0.00	26.10	16.50	3.43	13.50
Max.	1.81	51.90	22.20	6.50	21.10
Specific group					
N	187	187	187	187	187
Mean	0.3186	38.5102	17.9481	4.4898	15.9118
Med.	0.1200	38.4000	17.7000	4.4300	15.4000
St.Dev.	0.36054	4.60980	1.19632	0.49144	1.82060
Min.	0.00	23.60	16.00	3.21	13.50
Max.	1.68	53.10	23.70	6.65	30.10
p	0.049[1]	0.003[2]	0.015[1]	<0.001[1]	0.005[1]

[1] Mann-Whitney U test, [2] Student t test.

Discussion

In our study, We found that there might be foresight of the sub-parameters of hematologic tests (BASO%, HCT, PDW, RBC, RDW) to discriminate specific and nonspecific diagnoses in the emergency laboratory of patients presenting with acute abdominal pain to the green area in the emergency, except for anamnesis and physical examination. In addition, some parameters (LY%, MO, NEU#, NEU%, WBC) have been determined to be different in patients who need to be in bed or outpatient treatment.

Abdominal pain creates 5 to 10% of the causes of application to emergency outpatient clinics [5]. The disease distribution caused by abdominal pain, age, gender, factors such as underlying diseases, the symptoms and findings that are important in diagnosis are very guiding to reveal the disease that causes abdominal pain.

In spite of all the examinations of 30-40% of patients with abdominal pain in the emergency outpatient clinics, nonspecific abdominal painful patients are unable to detect any pathology and spontaneously decline complaints during observation. Nonspecific abdominal pain occurs more frequently in young adults [6-8]. In our study, the proportion of nonspecific abdominal painful patients was 45%, and 35.2% of men were determined in 40.2% of women. The mean age of the nonspecific group was 32.3, and no difference was detected between the specific group (33.4).

Hepatopancreaticobilier system diseases such as urinary tract infections, acute and chronic cholecystitis, choledocolitiasis and Bilier pancreatitis are seen in higher proportion in women [9-11]. In our study, 80% of renal system diseases, hepato-pancreatico-biliary diseases were observed in 62%.

The most frequent complaints accompanying abdominal pain in patients with abdominal pain are nausea, vomiting and anorexia [6, 12]. In our study, patients who were diagnosed with specific and nonspecific abdominal pain with acute abdominal pain were compared to complaints of nausea, vomiting, and lack

of appetite during the application and a statistically significant difference between the two groups It wasn't detected.

Laboratory tests and imaging methods; It is necessary to verify the diagnosis and differential diagnosis according to the findings of the physical examination. Although laboratory tests and imaging methods are very useful, they cannot replace the anamnesis and physical examination despite technological developments. Imaging audits such as the USG, CT should not replace the clinical evaluation that should be used to investigate a specific disease [7]. In our study, a statistically significant difference was observed in terms of advanced examinations (USG, CT) to achieve diagnosis from specific and nonspecific diagnosis patients.

Leukocytosis is regarded as an important diagnostic criterion accompanying the findings of the story and physical examination in the diagnosis of abdominal pain [13]. Acute appendicitis is the most common emergency surgical disorder. The appendix has leukocytosis at 80-90%, but the leukocytes are not on 18000 unless the perforation value [14]. In a study, the sensitivity of leukocyte value in the diagnosis of appendicitis was 85% and the specificity was 31.9% [15]. In another study, there was no significant difference between non-complicated appendicitis (acute inflammatory appendicitis) and the leukocytes (perforation and/or abscess) of the complicated appendix [16].

In acute appendicitis, the left shift in neutrophilia and hemogram is often associated with lymphopenia and may be presented with monoocytosis, the characteristic manifestation of acute infection [17, 18]. There are several studies that indicate that the number of neutrophilic decreases by increasing the number of lymphocytes in acute appendicitis, and hence the increased neutrophil/lymphocyte ratio (NLO) has high sensitivity to the diagnosis [19, 20]. Markar et al. reported that NLO had a statistically higher diagnostic sensitivity compared to the leukocytes and CRP values of the 1117 patients with appendectomy applied [21]. As the level of inflammation of the appendix becomes heavier, the decrease in the number of lymphocytes in addition to Neutrophil has been reported to increase significantly [22].

In our study, the groups were diagnosed and discharged due to abdominal pain, or were released with outpatient policlinic control and were compared with each other in terms of hematologic parameters. LY%, MO, NEU#, NEU%, WBC values were statistically significant differences between groups. WBC, NEU%, NEU#, MO# and LY% of patients who were undergoing surgery or medical treatment were determined to have high values. In addition, the specific and nonspecific diagnostic groups were compared with each other in terms of hematologic parameters due to abdominal pain. The values of BASO%, HCT, PDW, RBC, and RDW were statistically significant differences between the groups. In the specific diagnostic group, BASO%, HCT, PDW, RBC and RDW were determined to be low.

In conclusion, the most frequent application due to acute abdominal pain is nonspecific abdominal pain. But careful history, physical examination and laboratory examinations may lead us to determine the specific diagnosis in patients with acute abdominal pain.

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Research article
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Original Alvarado scoring system in the diagnosis of acute appendicitis: A cohort study

Akut apandisit tanısında orijinal Alvarado skorlama sistemi: Kohort çalışma

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Abstract

Aims: Although acute appendicitis is the most common cause of acute abdomen, there is still no definitive diagnostic method. Various scores were defined in the literature. In this study, we investigated the effectiveness of the Alvarado score, a clinical scoring system aimed at supporting the diagnosis.

Methods: Patients who were to be operated with acute abdomen and acute appendicitis pre-diagnosis in our hospital emergency surgery service were calculated before the Alvarado scores. This score has 8 parameters in the system. 1-The right lower quadrant of pain, 2-anorexia, 3-nausea-vomiting, 4-right lower quadrant sensitivity, 5-rebound sensitivity, 6-fever, 7-leukocytosis, 8-left shift (granulocytosis). Numbers 4 and 7 are calculated with a total of 10 points, 2 points, 1 point.

Results: Total 200 patients, (128 males, 82 female, male/female: 1.6) mean age was 34.3 ± 15.6, and the age range was 15-78. In ROC analysis, Alvarado scores greater than 6 has demonstrated acute appendicitis diagnosis with 76% sensitivity and 91% specificity. Alvarado score of 9-10 showed 100% sensitivity to detect acute appendicitis.

Conclusions: Clinical scoring systems are frequently used in the diagnosis of acute appendicitis. In publications covering the Alvarado scores of 9-10, the high probability of appendicitis, needs surgical intervention, and advanced examination methods were proposed in scores of 7-8. Our study resulted in consistent with the literature.

Keywords: Acute appendicitis, Scoring systems, Alvarado score

Öz

Amaç: Akut apandisit en sık görülen akut karın nedeni olmasına rağmen hala kesin tanı koyduran bir yöntem mevcut değildir. Literatürde çeşitli skorlamalar tanımlanmıştır. Bu çalışmada tanıyı desteklemek amaçlı, bir klinik skorlama sistemi olan Alvarado skorununun etkinliği araştırdık.

Yöntem: Hastanemiz acil cerrahi servisinde akut karın ve akut apandisit ön tanısı ile ameliyat edilecek hastalara, ameliyat öncesinde Alvarado skorları hesaplandı. Bu skor sistem içerisinde 8 parametre bulunmaktadır. 1-Ağrının sağ alt kadrana göçü, 2-İştahsızlık, 3-Bulantı-kusma, 4-Sağ alt kadranda hassasiyet, 5-Rebound hassasiyet, 6-Ateş, 7-Lökositoz, 8-Sola kayma (granülositoz). 4 ve 7 numara 2 puan diğerleri 1 puan olmak üzere toplam 10 puan üzerinden hesaplanır.

Bulgular: Toplam 200 hasta, (118 erkek, 82 bayan, erkek/bayan:1.4) ortalama yaş 34.3±15.6, yaş aralığının 15-78 olduğu görüldü. ROC analizinde 6'nın üzerindeki Alvarado skorlarının %76 sensitivite, %91 spesifisite ile akut apandisit tanısını gösterebileceği saptandı. Alvarado skoru 9-10 %100 sensitivite ile akut apandisiti tespit etti.

Sonuçlar: Akut apandisit tanısında klinik skorlama sistemleri sık kullanılmaktadır. Alvarado skorlama sistemini kapsayan yayınlarda 9-10 arası yüksek ihtimal apandisit (cerrahi girişim), 7-8 arası değerler için ileri tetkik yöntemleri önerilmiştir. Çalışmamızda literatürle uyumlu sonuçlanmıştır.

Anahtar kelimeler: Akut apandisit, Skorlama sistemleri, Alvarado skoru.

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Introduction

Acute appendicitis is one of the most urgent surgical conditions. Acute appendicitis is sometimes delayed due to very different complaints, and sometimes it is confused with other illnesses showing classic complaints leading to the patients being operated with unnecessary or misdiagnosis. Delay in the diagnosis of acute appendicitis increases the likelihood of perforation. Perforation increases the risk of morbidity and mortality of the disease and therefore many cases suspicious for acute appendicitis are taken without delay very soon. Thus, the probability of encountering a disease-free appendix vermiformis during surgery, which we call negative laparotomy, is reported in 13-36% [1-4]. These rates, which are considered as high, should be absolutely reduced by the fact that the negative laparotomy is not as low as the morbidity. The group with the highest morbidity is the complicated appendicitis. The most important factor is the delay with the cause of patient-induced or poor diagnosis. The rate of complicated appendicitis detection during surgery has been reported between 12 and 21% [1,4,5]. Negative appendectomies and complicated appendicitis rates, which are considered to be high rates, have brought out auxiliary imaging methods in the diagnosis and the investigation of the location with ultrasonography and tomography in the diagnosis of appendicitis has begun. The evaluation of appendicitis by ultrasonography was first made at the beginning of the 1980's and published as a case report [3].

Alvarado score is one of the clinical scoring systems used in the diagnosis of appendicitis, as a noninvasive method, easy and affordable. It was first introduced in 1986 and developed mainly for pregnant females. Actually sensitivity of score can be low in female patients, such as ruptured heterotopic pregnancy might cause acute abdomen condition mimicking acute appendicitis. Later it has been validated in all population. Still the Alvarado score is in use in in the diagnosis of appendicitis [6-8]. We aimed to measure the efficacy of Alvarado score in diagnosis of acute appendicitis.

Material and methods

Descriptive (prospective cohort) study is designed, and the universal principles of the 1964 Declaration of Helsinki and its later amendments were applied. This research was conducted according to the principles of the World Medical Association Declaration of Helsinki “Ethical Principles for Medical Research Involving Human Subjects”.

The patients who operated with appendectomy for acute appendicitis are enrolled into the study. Alvarado score was calculated. The score has six clinical and two laboratory items with a maximum value of 10 points (Table 1). Demographic status, history, laboratory, operation and pathology records were retrieved from patients’ files. Sample size was chosen as 187 patients to predict the determination of the difference with a confidence level of 90% and margin error of 6%. In statistical assessments, 13 patients were added to reduce the margin of error and the final sample size was determined as 200.

Statistical calculations were performed using IBM SPSS 22 (IBM SPSS, USA). Variables are expressed as mean ± standard deviations (SD) or as medians (range) depending on their distribution. Categorical variables were expressed as frequencies and percentages. The Chi-square and Fisher's exact tests were used for comparison of continuous parametric variables. Normality was assessed by means of the Kolmogorov–Smirnov test. The t-test was used for comparison of parametric variables with normal distribution. Pathological examination with acute appendicitis was used as determinant factor. Sensitivity and specificity of certain Alvarado score groups (0-4, 5-6, 7-8, 9-10) are calculated. ROC curve analysis is performed to reveal custom advisable Alvarado score level. The statistical results were presented with a 95% confidence interval (CI). The differences were considered statistically significant if the p-value was less than 0.05.

Table 1: Alvarado Score

Symptoms	Points
Abdominal pain that migrates to the right iliac fossa	1
Anorexia (loss of appetite) or ketones in the urine	1
Nausea or vomiting	1
Tenderness in the right iliac fossa	2
Signs	
Rebound tenderness	1
Fever of 37.3 °C or more	1
Laboratory	
Leukocytosis > 10,000/mm3	2
Neutrophilia > 70%	1
Total	10

Results

Two-hundred cases enrolled into study. ROC analysis resulted strong area under curve value (AUC:0.921) (Figure 1, Table 2). This ROC analysis showed that Alvarado score greater than 6 shows acute appendicitis at a sensitivity of 76% and a specificity of 91%. In second stage of analysis, Alvarado score groups (0-4, 5-6, 7-8, 9-10) are formed. No statistical difference was determined between demographics of patients and groups ($p>0.05$). Alvarado score groups statistics is shown in table 3. Score of 5-6 showed 71.4% sensitivity to determine acute appendicitis, Score of 7-8 showed 97.3%, and 9-10 showed 100% sensitivity.

Figure 1: ROC Curve

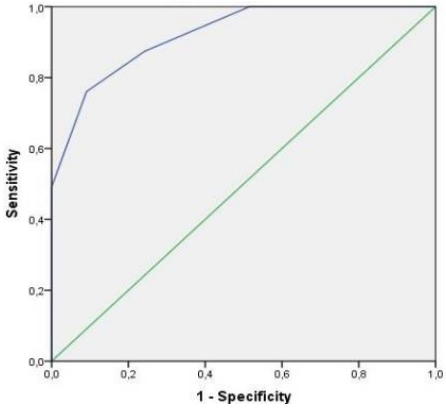

Table 2: ROC analysis

Area	Std. Error	p	Asymptotic 95% Confidence Interval	
			Lower Bound	Upper Bound
0.921	0.023	0.0001	0.876	0.966

Table 3: Alvarado score groups statistics

Alvarado Score	0-4	5-6	7-8	9-10
n	14	56	113	17
Appendicitis	0	40	110	17
No appendicitis	14	16	3	0
p[1]	0.0001	0.005	0.001	0.040
Sensitivity	0	71.4	97.3	100
Specificity	10.2	11.8	34.5	18.0

[1] Fisher's exact test

Discussion

Assessment of suspected appendicitis patients is driven to identify all patients with acute appendicitis early in the clinical course, with the lowest incidence of therapeutic laparoscopy. The unanswered diagnosis of appendicitis may result in severe, negative patient outcomes, especially perforated, while non-therapeutic operations are subject to surgical morbidity without treating the underlying condition. Data on history, physical exams and laboratory tests are used to describe the clinical probability of acute appendicitis. Those with a low sobering score are assessed for the evaluation of alternative diagnoses. Those with a higher uptake score are used to improve the details of imaging and Surgical Laparoscopic search evaluation and to minimize the possibility of a negative abdomen [1-4].

Although appendicitis is the most common emergency surgery, accurate and timely diagnosis is sometimes difficult. For this reason, unnecessary or late operations are problems we encounter in patients with suspected acute appendicitis. To make a correct and timely diagnosis, at least to the doctor it is extremely useful in terms of patients who are referred early. Obviously, evaluating patients with clinical and laboratory results alone is not enough. Just it has been diagnosed by this method and it has been reported that the patients who underwent operation were operated on 10-13% of unnecessary cases even in the best series and complicated appendicitis was encountered between 11% and 20% [1, 5]. With imaging methods it is predicted that these ratios could be lowered further. Thus, accurate and timely diagnostic imaging of ultrasound and tomography has been researched and discussed in many publications [1-5]. In a meta-analysis of fourteen publications, 80% sensitivity and 81% selectivity of ultrasonography as a diagnostic tool were demonstrated and the utility of detecting appendicitis was demonstrated [9]. However, studies showing high sensitivity for acute appendicitis with 91% sensitivity and 95.9% selectivity have also been reported [10]. In this respect, it is possible to identify in the literature the opposite views. Imaging methods have been shown to delay the diagnosis of acute appendicitis due to their low sensitivity [4, 11].

The Alvarado score is a scoring system which can be used determine the patients with acute appendicitis with very low likelihood. This score can distinguishes them from acute appendicitis according to other causes of abdominal pain. Patients with not very high Alvarado scores should be evaluated further with pre-treatment imaging. While various scoring systems are proposed to standardize clinical and laboratory evaluation for acute appendicitis, recently the modified Alvarado score is the most commonly used score [12, 13]. In our study, we used original Alvarado score. Main rational for this issue, we want to determine our results with original Alvarado score.

The two most important factors, tenderness in the right lower quadrant and leukocytosis, are assigned two points, and remaining parameters are assigned one point each, for a possible total score of ten points. The original Alvarado score may result with a possible total of 10 points, but those medical facilities that are unable to perform a differential white blood cell count. Modified Alvarado Score with a total of 9 points might not be accurate as the original score. The high diagnostic value of the original Alvarado score has been confirmed in a number of studies across the world. The consensus is that the Alvarado score is a noninvasive, safe, diagnostic method. Also Alvarado is simple, reliable and repeatable, and able to guide the clinician in the management of the case [6, 7, 11]. A score of 5 or 6 is compatible with suspicion of the diagnosis of acute appendicitis. A score of 7 or 8 indicates a probable appendicitis, and a score of 9 or 10 indicates a very probable acute appendicitis [6, 7].

Although clinical judgement is very important in diagnosing acute appendicitis, some scoring system have offered to increase sensitivity of final diagnose [6, 14]. In our study, we found that high sensitivity but low specificity in Alvarado score greater than 8. ROC analysis resulted 6 and more score with high sensitivity and specificity.

Main limitation of this study is study design. Some conclusions have to be made with comparative studies. Future studies are needed to compare original and modified Alvarado score efficacy on diagnose of acute appendicitis.

In conclusion, original Alvarado score is still useful to take decision in patient diagnose and in choosing relevant treatment.

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Research article
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A challenging breast cancer type; Differentiation to neuroendocrine tumors

Zorlu bir meme kanseri türü; Nöroendokrin tümörlere farklılaşma

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Abstract

Aim: Neuroendocrine type breast carcinomas are rarely observed. Most of these tumors are seen as cell-differentiated neuroendocrine breast carcinoma but with all this infrequency, there is also a rarer type which is called as pure neuroendocrine breast carcinoma. The common locations for neuroendocrine tumors are lung and gastrointestinal system (stomach and pancreas). Although estimations vary, the annual incidence of clinically significant neuroendocrine tumors is approximately 5-6.5 per 500,000; two thirds are carcinoid tumors and one third is other neuroendocrine tumors. The estimated prevalence is 35 per 100,000. In this article, we analyze the patients admitted with breast problems and had the diagnosis of breast cancer with neuroendocrine differentiation or purely neuroendocrine tumor.

Methods: Retrospective cohort study is designed to review neuroendocrine breast cancer patients. Female patients with pathological examination which have neuroendocrine components in neoplasm were reviewed. Demographics, preoperative imaging, diagnostic evaluations, operation and pathological examination records of patients were recorded.

Results: Neuroendocrine breast cancer was observed in 11 patients in study period. All patients received standard therapy like non-specific breast cancer. Only two of 11 patients (18%) were diagnosed with neuroendocrine differentiation in preoperative period by biopsy. One patient received neoadjuvant treatment. Modified radical mastectomy was performed in eight patients (72.8%). Breast conserving surgery was performed in remaining three patients.

Conclusion: Neuroendocrine breast cancer is rare entity, and diagnose at preoperative period may be challenging. In most cases the correct diagnosis is made after proper examination of the postsurgical specimen. Future studies for specific treatments would be of interest.

Keywords: Breast cancer, Neuroendocrine tumor

Öz

Amaç: Nöroendokrin tip meme karsinomlarına nadiren rastlanmaktadır. Bu tümörlerin çoğu hücreye göre farklılaşmış nöroendokrin göğüs karsinoması olarak görülmekle birlikte, bu nadiren de olsa, saf nöroendokrin göğüs karsinoması olarak adlandırılan daha seyrek bir türü vardır. Nöroendokrin tümörlerin ortak yerleri akciğer ve gastrointestinal sistemdir (mide ve pankreas). Tahminler değişse de, klinik olarak önemli nöroendokrin tümörlerin yıllık insidansı 500.000'de yaklaşık 5-6.5; üçte ikisi karsinoid tümörler, üçte biri diğer nöroendokrin tümörlerdir. Tahmini yaygınlık her 100.000 için 35'tir. Bu yazıda meme problemi ile başvuran ve nöroendokrin diferansiyasyon gösteren meme kanseri veya tamamen nöroendokrin tümör tanısı alan hastalar incelenmiştir.

Yöntemler: Retrospektif kohort çalışması, nöroendokrin meme kanseri hastalarını incelemek üzere tasarlanmıştır. Neoplazmda nöroendokrin bileşenlere sahip patolojik inceleme yapılmış kadın hastalar gözden geçirildi. Hastaların demografik özellikleri, preoperatif görüntüleme, tanı değerlendirmeleri, ameliyat ve patolojik inceleme kayıtları kaydedildi.

Bulgular: Çalışma döneminde 11 hastada nöroendokrin meme kanseri tespit edildi. Tüm hastalara, spesifik olmayan meme kanseri gibi standart terapi uygulanmıştır. Ameliyat öncesi dönemde 11 hastanın sadece ikisinde (%18) biyopsi ile nöroendokrin farklılaşma saptanmıştır. Bir hasta neoadjuvan tedavi aldı. Sekiz hastada (%72,8) modifiye radikal mastektomi uygulandı. Geri kalan üç hastada meme koruyucu cerrahi uygulandı.

Sonuç: Nöroendokrin meme kanseri nadir görülen bir hastalıktır ve preoperatif dönemde teşhis zor olabilir. Çoğu durumda, doğru teşhis, cerrahi sonrası numunenin uygun şekilde incelenmesinden sonra yapılır. Spesifik tedaviler için gelecek çalışmalar ilgi çekici olacaktır.

Anahtar kelimeler: Meme kanseri, Nöroendokrin tümör

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Introduction

Neuroendocrine tumors (NETs) are epithelial neoplasms with predominant neuroendocrine differentiation. NETs arise in most organs of the body [1]. The general locations are lung or gastrointestinal organs such as stomach and pancreas. Annual incidence of clinically significant neuroendocrine tumors is approximately 5-6.5 per 500,000 cases; and two third of cases are carcinoid tumors. The prevalence has been estimated as 35 per 100,000. However, NETs is very rarely seen in breast. Generally, neuroendocrine breast cancers (NBC) are neuroendocrine differentiated types. The first recognition occurred in 1963 [1-4]. There was no formal criteria until World Health Organization (WHO) defines neuroendocrine breast carcinomas as "NETs of the breast as having >50% neoplastic cells expressing neuroendocrine markers" [1, 5]. The estimations of WHO is that the neuroendocrine breast cancer is uncommon and unclear because of the patients with NBC do not have a significant family story and specific characteristics.

Due to inadequate researches and low number of cases about NBC, the treatment and prognosis of these cancer types are not well-known. According to present surgical literature, prognosis of NBC is dependent to metastatic activity of cancer and the therapy which applied to the patient. Though, the prognosis is poor [6-9]. Nowadays, there are new treatments such as peptide receptor radionuclide therapy which aims to identify the specific receptor and destroy the tumor cells. The main types of these cancer types are identified according to positive markers and the majority of cell differentiation as solid, large cell or small cell [10-12].

The management of NBC can be classified by a grading system which allows the use of mitotic rate or Ki-67 index to define grade as high–grade, intermediate–grade and low–grade. Prognosis of atypically located neuroendocrine tumors is poor, irrespective of the primary origin. However, small cell carcinoma involvement within NETs ends with poorer prognosis [12-14].

Types of reports about NBC in surgical literature are case reports and case series. In this study, we aimed to perform the analysis of case series of NBC patients.

Material and methods

Female patients that operated for breast cancer in four years period were reviewed. Patients with pathological examination which had neuroendocrine components in neoplasm included into study.

Patients' demographic data were recorded. All patients underwent ultrasonography (USG) examination and mammography, selectively. Magnetic resonance imaging was performed as needed. Preoperative biopsy reports were evaluated.

Surgical modalities for breast and axilla were recorded. Pathological examinations of specimen were evaluated delicately. Patients were followed-up at six months. Additional diagnostic and treatment modalities were evaluated.

Pathological examination

For positive confirmation of neuroendocrine differentiation, specific immunohistochemical markers (chromogranin A and synaptophysin) were used. The types of tumors are evaluated as solid, large cells, small cells and pure NBC, or cell differentiation NBC.

Ki-67, estrogen and progesterone, HER-2 levels were identified for neuroendocrine differentiation in the purpose of management of treatment choice. The other possible primary organs were also investigated.

Results

A total 156 patients were operated for breast cancer between 2009 and 2012. NBC was observed in 11 (7%) patients according to pathological examination of operative specimen. These patients constituted study group.

Median age of patients was 65.2 (range: 36 – 86). Preoperative diagnostic modalities were examined in study group. All patients have had an examination of breast ultrasonography and mammography according to requirement of diagnostic support. Three patients (27.2%) were underwent magnetic resonance imaging for breast.

All study Patients were diagnosed as breast cancer by the way of needle core biopsy. Details of preoperative pathological reports were listed in table 1. Only two of 11 patients (18%) were diagnosed as NBC in preoperative period by biopsy.

Table 1: Preoperative pathologic report of biopsy.

Report Details	Number of Patients
Invasive ductal breast carcinoma	7
Breast carcinoma with mucinous differentiation	1
Micro-invasive ductal breast carcinoma developed on the basis of solid papillary carcinoma	1
Intra-cystic and solid papillary carcinoma with abundant neuroendocrine differentiation	1
Mucinous carcinoma of the breast with neuroendocrine differentiation	1

Patients were prepared for operation with routine laboratory tests. One patient received neoadjuvant treatment. Modified radical mastectomy was performed in eight patients (72.8%). Breast conserving surgery was performed in three patients (27.2%). Multifocal tumor was seen in three patients (27.2%). Maximum tumor diameter of patients was between 0,5 cm and 12 cm. Details of patients' operative data were listed in table 2.

Table 2: Patients' characteristics

No	Operation	Reported Tumor Sizes (cm)
1	MRM	12x10x6, 4x3x1.5
2	MRM	2.2
3	MRM	1.8x1.8x1.5
4	BCS	1.5x2x1
5	MRM	4.5x3.5x2.5
6	MRM	1x1x1.8, 1.5x1x1, 0.2
7	BCS	3.2x1.8x1.2
8	MRM	3x3x2.5
9	MRM	3x3x2, 1x0.8x0.6, 0.6, 0.3
10	BCS	2.5
11	MRM	3.2x3x2.6

MRM: Modified radical mastectomy, BCS: Breast conserving surgery

One of the patients, who had pure neuroendocrine breast cancer, had a specific imagining test which is 68-Galyum-DOTA, TOC-PET/CT for metastatic level and the peptide receptor radionuclide therapy. The test result showed that the treatment is not useful for the patient.

Discussion

Although NBC is a rare, the treatment of these tumors is not very different from other breast cancer types. There are new treatments for neuroendocrine types of tumors such as peptide receptor radionuclide therapy which aims to identify the specific receptor on the tumors. The receptors for this treatment are somatostatin analogs. One of our patients who had pure neuroendocrine breast carcinoma was assessed for this treatment and observed the treatment is useful for pancreatic carcinomas which secretes somatostatin [1-5].

The concept of NBC was first described in 1977 [1, 2, 12]. And in 2000, some other authors defined neuroendocrine differentiation; defined as pure NE tumors if indicators are in more than 50% of tumor cells. World Health Organization categorized those tumors into a different group of breast tumors in 2003 [1]. NBC do not have specific clinical or radiological characteristics to differentiate them from other breast tumors [1, 8]. In our study, most of NBC cases were diagnosed as a different type of breast cancer.

NBC have three sub-types morphologically: solid, small cell/oat cell, and large cell neuroendocrine carcinomas [3, 12, 13]. The grade of histological differentiation in NBC is considered the most important factor for prognosis. Solid NBCs are usually well-differentiated tumors, small cell/oat cell and large cell NBCs are poorly differentiated [14-16].

Genetic alterations of NBC are to be determined as molecular studies are scarce. At present, point mutations studied in a small series of NBC and showed recurrent mutations affecting PIK3CA and the FGFR family (FGFR1 and FGFR4). 17 HRAS and KDR mutations were observed in single cases [17]. A subsequent analysis has recently showed that NBC seem to harbor a repertoire of somatic mutations distinct from that of common lower frequencies of TP53 and PIK3CA mutations [18].

The rare variants of NBC occur predominantly in postmenopausal women, and they are associated with more aggressive tumors and with a poorer progression-free survival than invasive carcinomas of no special type. At the molecular level, the subgroup of NBC is characterized by low levels of PIK3CA mutations. This molecular feature explains the unfavorable prognosis of NBC. Larger molecular studies of NBC are warranted. The clinical decision-making for patients with NBC is based on proper grading and immune-phenotyping of the lesions, similar to any invasive breast carcinomas. An accurate identification of this NBC on molecular level may be useful to better tailor patient adjuvant therapy within luminal carcinomas [17-20].

Main limitation of this study is low patient volume, and retrospective nature of study design. NBC is rare disease, in literature most of the studies have similar problem. This issue limits the conclusion of the study.

In conclusion, NBCs are rare, accounting for up to 7% of all breasts tumors and approximately 1% of all NETs. Preoperative diagnose even with histopathological assessment might be challenging, however in most cases, the tumors are well differentiated. In most cases the correct diagnosis is made after proper examination of the postsurgical specimen. Future studies for specific treatments would be of interest.

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Journal of Surgery and Medicine

Simultaneous double of both interphalangeal joints dislocation of same finger in a volleyball player: A case report

Bir voleybol oyuncusun eş zamanlı aynı parmaktaki her iki ekleminin aynı anda dislokasyonu: Olgu sunumu

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Abstract

A case of simultaneous dislocation of both proximal and distal interphalangeal joints in a single finger without associated fracture in a volleyball player was presented.it was a twin dislocation in a same finger. Reduction was achieved easily with longitudinal traction. The finger immobilized in intrinsic plus position for 3 weeks followed by rehabilitation range of motion exercises. Our patient was treated by closed reduction and then intrinsic plus position splinting. The patient had full range of motion without pain joints six-weeks later. As a result, applying to closed reduction and intrinsic plus splinting in the treatment of method and early active range of motion movement preserve joint contracture.

Keywords: Intrinsic plus splinting, Joint, Dislocation, Interphalangeal, Finger, Simultaneous

Öz

Bir voleybol oyuncusunda kırık olmadan tek bir parmağın, proksimal ve distal interfalangeal eklem eş zamanlı çıkığı olgusu sunuldu. Longitudinal traksiyonla redüksiyon yapıldı. Parmak 3 hafta süreyle intrinsik plus pozisyonunda immobilize edildi, takiben eklem hareket açıklığı egzersizleri başlandı. İntrinsik plus splintleme ile hasta da 6 hafta sonra ağrısız tam eklem hareket açıklığı elde edildi. Sonuç olarak tedavi yönteminde kapalı redüksiyon uygulaması ile intrinsik plus pozisyonu ve erken aktif hareket eklem kontraktürünü engeller.

Anahtar Kelimler: İntrinsik plus splintleme, Eklem, Çıkık, İnterfalangeal, Parmak, Eş zamanlı

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Introduction

While the dislocation of proximal or distal interphalangeal joints (IPJ) of a finger, simultaneous dislocation of the proximal and distal interphalangeal joints of the same finger is rare. The fifth finger is most often affected, followed by fourth finger [1,2,3].

Case Presentation

A 26-year-old male injured his left fourth finger while fastly impact with ball on volar side of his finger. Examination revealed a stepladder deformity at finger. There was not any neurovascular damage. Radiological assessment showed dorsal dislocation of both the proximal and distal interphalangeal joints (Figure 1). There was no fracture. Double dislocation was reduced by longitudinal traction. Proximal and distal interphalangeal joint were stable after reduction (Figure 2). Splint was applied in the intrinsic plus position of the finger. After the splint was removed in finger, the patient was allowed to finger active and passive joint exercises. At the sixth week, there was full range of movement.

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Figure 1: Joint dislocation fourth finger before reduction (a: lateral, b: anteroposterior)

Figure 2: Joints after reduction (a: anteroposterior, b: lateral)

Discussion

Dislocation of proximal or distal interphalangeal joints are common but simultaneous dislocation both proximal or distal interphalangeal joints are rare. Most commonly etiologic reason is sport injuries in the literature. [1,4]

The probably reason is more vulnerable to trauma and owing to weakness adjacent to surrounding ligament structure in both fourth and fifth finger [1]. The other reason is that proximal anatomical morphology of finger with shallow articular surface itself leads to laxity on extension [5,6]. Firstly, dislocation distal interphalangeal joint, proximal interphalangeal joint is dislocated to following hyperextension force is affected to the middle phalanx. Thus, dislocation of both interphalangeal joints of one finger occurred consecutively [1,7].

In the literature reporting commonly injuries mechanism is dorsal dislocation in interphalangeal joint for hyperextension force of causing rupture of volar capsule. That injury mechanism is hyperextension forcefully movement direction on both joint in a finger. Once, impacting on the volar aspect of the distal phalanx, causing dislocating the distal inter phalangeal joint and then dislocating the proximal interphalangeal joint [7].

Swelling is mild in joint of finger; step ladder deformity was obvious. Swelling may obscure the clinical diagnosis in which case radiological evaluation will be needed to display the correct diagnosis [6]. İn our patient the stepladder deformity was evident and clearly diagnosis confirmed with radiograph.

Some authors support early motion for protected motion following dislocation of IPJ. Interphalangeal joint was very susceptible to post-traumatic pain, swelling and stiffness. A damaging of any joint structures will affect gliding joint motion and ligaments. Also range of motion of the joint will impair [8].

Most dislocation is reduced with closed reduction by axial traction. After the reduction, in order to avoid any instability of joint, hand and finger should not to be immobilization in the functional position. In the standing of finger position should choice intrinsic plus position leading at 80-90 degree of flexion in the metacarpophalangeal joint 0-15 degree of flexion interphalangeal joint [1,4,8]. Treatment options include immobilization, buddy-strapping, dorsal-blocking splints and figure-of-eight splints for 2-4 weeks [1,6] . In our patient, splint immobilization position was done finger of intrinsic plus position.

Surgical treatment is needed to only in case of neglected dislocation, open injuries, volar plate or ligament injuries, associated fracture and tendon injuries [1,7].

In the summary, this injury is to achieve a strong, stable and pain-free joint with appropriate range of motion (ROM). Our patient was allowed to early controlled active and passive movement. Preserving joint contracture should choice to early splinting of intrinsic plus position and early joint motion in the treatment.

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Journal of Surgery and Medicine

Splenic trauma in a patient with portal hypertension and splenomegaly: A case report

Portal hipertansiyon ve splenomegali olan bir hastada dalak travması: Olgu sunumu

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Abstract

The spleen is the most commonly injured organ in cases of blunt abdominal trauma. Currently, 50-80% of adults with blunt splenic injuries are treated non-operatively. In this report, we present a blunt abdominal trauma patient having a history of portal hypertension and splenomegaly. In grade 3 and even grade 4 splenic injuries non-operative treatment is recommended in current literature. Management of splenic trauma with a patient with history of splenomegaly and portal hypertension is insufficiently discussed in literature. In presented case, hypersplenism and portal hypertension were burden on hemostasis. Even with massive resuscitation, thrombocyte level decreased to 40.000/mm³ after five hours. But, insistence on non-operative treatment in this situation could be fatal.

Keywords: Splenic trauma, Splenomegaly

Öz

Dalak, künt abdominal travma vakalarının en sık yaralanan organıdır. Son zamanlarda künt dalak yaralanmaları olan yetişkinlerin %50-80'i ameliyatsız olarak tedavi edilmektedir. Bu raporda, portal hipertansiyon ve splenomegali öyküsü olan künt bir abdominal travma hastası sunuyoruz. Grade 3 ve hatta grade 4 dalak yaralanmalarında, mevcut literatürde non-operatif tedavi tavsiye edilmektedir. Splenomegali ve portal hipertansiyon öyküsüne sahip bir hasta ile dalak travması yönetimi literatürde yeterince tartışılmamaktadır. Sunulan olguda, hipersplenizm ve portal hipertansiyon hemostaz üzerindeki etkileri görülmektedir. Masif resusitasyon ile bile, beş saat sonra trombosit seviyesi 40.000/mm³'e azalmıştır. Ancak, bu durumda non-operatif tedavide ısrar etmek ölümcül olabilir.

Anahtar kelimeler: Dalak travması, Splenomegali

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Introduction

Non-operative management has become very popular management recently in hemodynamically stable patients with blunt splenic injury with overall success rate ranging from 61% to 83% [1-3]. However attempting to manage unstable patients non-operatively may result in preventable deaths [4]. Coexistent liver cirrhosis in such patients is complicated by the presence of coagulopathy, portal hypertension and splenomegaly [5]. Consequently, escalation of intraoperative bleeding and grade of splenic trauma in such critical patients is inevitable.

In this report, we aimed to present a blunt abdominal trauma patient with a history of portal hypertension and splenomegaly.

Case Presentation

30 years-old female was admitted to emergency department with a complaint of blunt abdominal trauma. After general examination, blood analysis and radiological examinations were performed. Physical examination was revealed right and left upper abdominal quadrant tenderness. In patient history, portal hypertension, splenomegaly and hypersplenism had been diagnosed three years ago. Blood analysis was showed that hematocrit level 26%, hemoglobin 8.2 g/dl and thrombocyte 52.000/mm³. Abdominal ultrasonography was showed abdominal fluid and computed tomography was showed grade 3 splenic injury (figure 1).

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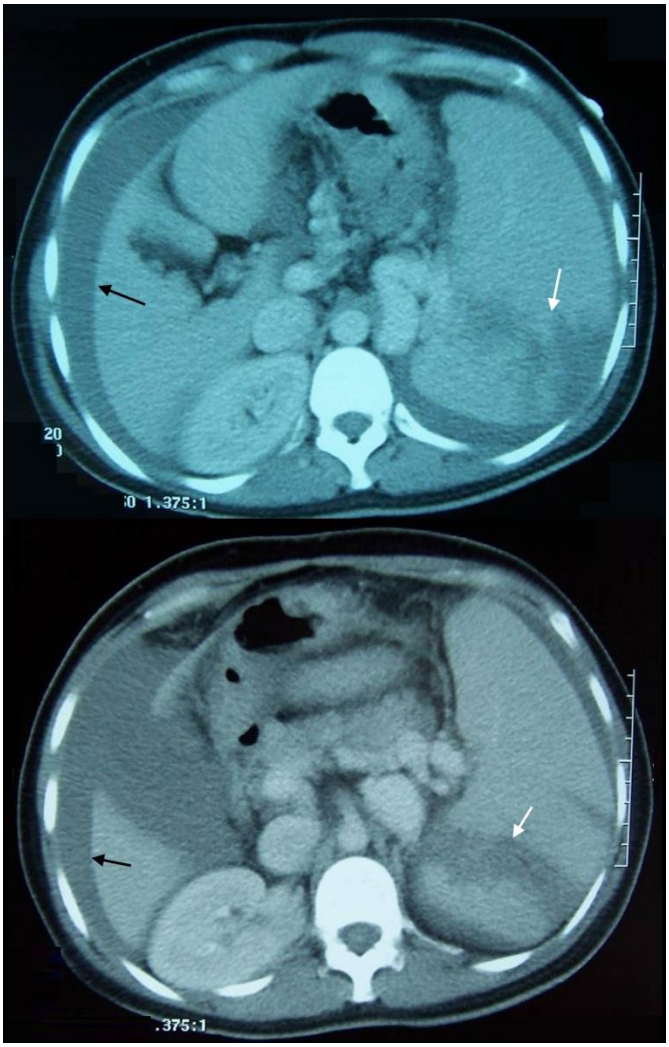

Figure 1: Abdominal computed tomography view of the patient (white arrow: splenic injury, black arrow: intraabdominal fluid).

Patient was transferred to intensive care unit for close monitorization. After five hours of resuscitation even with blood products (four erythrocyte, two fresh frozen plasma and two thrombocyte transfusion), hemostasis could not be achieved. Emergent operation, splenectomy, was performed. Postoperative period was uneventful, and patient was directed to the hepatobiliary and gastroenterology department.

Discussion

Non-operative management of blunt splenic injuries has accepted after 1960s. It was advocated by pediatric surgeons mainly to avoid the fatal complication of post-splenectomy sepsis [6]. In 1980s non-operative management in such trauma had been shown to be safe and effective [7 – 9]

Liver cirrhosis is common in the Western world and it is on the top ten causes of death. Up to 15% of chronic alcoholics develop liver cirrhosis [10]. Hepatitis C infection is another factor in liver cirrhosis particularly in the third world countries, and 15–25% of them progress to severe liver disease, leading to liver cirrhosis in 20% of persistently [11, 12].

Fang et al [13] looked at traumatic splenectomy with coexistent liver cirrhosis, and looked at the efficacy of non-operative management of patients with splenic trauma over 5 years period in Taiwan. They identified 12 patients with coexistent liver cirrhosis and blunt splenic trauma. The amount of blood transfusion within 72h after admission ranged from 4 to 26 units. Patients with coexistent liver cirrhosis and blunt splenic trauma had a significantly higher non-operative management failure rate compared with non-cirrhotic patients of the same cohort (92% vs 19%). Despite aggressive transfusion, all patients soon became hemodynamically unstable and required emergent laparotomy. They advocate along with aggressive transfusion of fresh frozen plasma in patients with severely deranged clotting regardless of hemodynamic status [13, 14].

In our case, the patient have non-cirrhotic portal hypertension and splenomegaly in history. Even her liver was not cirrhotic, coagulation system was not working properly possibly due to low functions and low volume of thrombocytes.

In conclusion, non-operative management of splenic trauma is recommended in up to grade 3, even grade 4 splenic injuries. However attempting to force non-operative management in patient with a history of coagulative problems may result in preventable deaths.

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