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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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