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Typhoid Intestinal Perforations: Has the Clinical Importance Decreased in Eastern Anatolia for 36 Years?

Tifoya Bağlı Barsak Delinmeleri: 36 Yılda Doğu Anadolu'da Klinik Önemi Azalmakta mı?

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Abstract

Objective: Typhoid fever (TF) is an important health problem in developing countries, and typhoid intestinal perforation (TIP) is a serious complication of TF. The present report aims to determine the clinical importance of TIPs for the last 36 years in our region, eastern Anatolia.

Materials and Methods: The clinical records of 84 surgically treated cases with TIPs were reviewed retrospectively.

Results: When the last 36-year period was sectioned by 6-year periods, the distribution of TIPs was found as 39 (46.4% of total), 31 (36.9%), 7 (8.3%), 4 (4.8%), 2 (2.4%) and 1 (1.2%), respectively. The mean age of the patients was 37.1 years (range: 7-68 years), and 66 patients (78.6%) were male. As a surgical procedure, 34 patients (40.5%) had primary repair, 9 (10.7%) had wedge resection with primary repair, 9 (10.7%) had resection with primary anastomosis, 28 (33.3%) had resection with ileostomy, and 4 (4.8%) had exteriorization. Complications were seen in 71 patients (84.5%), while the mortality rate was 10.7% (9 patients).

Conclusion: Although eastern Anatolia is an endemic region for TF, a certain decrease in the incidence of TIPs was found for the last 36 years. Keeping in mind the TIP, patients with TF may improve the prognosis of this serious disease.

Keywords: Typhoid fever, intestine, perforation

Özet

Amaç: Tifo gelişmekte olan ülkelerde önemli bir sağlık problemidir ve tifoya bağlı barsak delinmesi (TBBD), tifonun önemli bir komplikasyonudur. Bu çalışmanın amacı, TBBD'nin son 36 yılda bölgemizde, Doğu Anadolu'daki klinik önemini araştırmaktır.

Gereç ve Yöntem: Cerrahi olarak tedavi edilen TBBD'li 84 hastanın klinik kayıtları retrospektif olarak değerlendirildi.

Bulgular: Son 36 yıllık süre altışarlı yıllara bölündüğünde, TBBD'nin dağılımı, her 6 yıl için sıra ile 39 (toplamın %46,4'ü), 31 (%36,9), 7 (%8,3), 4 (%4,8), 2 (%2,4) ve 1 (%1,2) olarak bulundu. Hastaların ortalama yaşı 37,1 yıldı (7-68 yaş arası) ve 66 hasta (%78,6) erkekti. Cerrahi işlem olarak 34 hastaya (%40,5) primer onarım, 9'una (%10,7) veç rezeksiyon ve primer onarım, 9'una (%10,7) rezeksiyon ve primar anastomoz, 28'ine (%33,3) ileostomi ve 4'üne (%4,8) de eksteriorizasyon yapıldı. Komplikasyonlar 71 hastada (%84,5) görüldü, mortalite oranı %10,7 idi (9 hasta).

Sonuç: Her ne kadar Doğu Anadolu tifo için endemik bir bölge ise de, son 36 yıllık sürede TBBD'nin insidansında belirgin bir azalma tespit edildi. Tifolu hastalarda TBBD'nin akılda tutulması, bu ciddi hastalığın prognozunu iyileştirebilir.

Anahtar Kelimeler: Tifo, barsak, delinme

Introduction

Typhoid fever (TF), caused by *Salmonella Typhi*, is an important health problem in developing countries [1]. TF causes approximately 22 million cases and 216,000 deaths annually worldwide [2], and approximately 10,000 patients are hospitalized annually because of TF in Turkey [3]. Typhoid intestinal perforation (TIP) is a serious complication of TF, and it is seen in 0.8%-18% of all cases [4, 5].

In order to determine the clinical importance of TIPs, we reviewed the records of 84 patients with TIP, who were treated surgically over a 36-year period between July 1978 and July 2014.

Materials and Methods

The clinical records of 84 surgically treated cases with TIPs were reviewed retrospectively with respect to incidence, age, gender, symptoms, diagnostic tools, operative findings, treatment, morbidity and mortality.

Clinical examinations of all patients were performed after resuscitation, including attempts to achieve fluid and electrolyte balance, providing respiratory support if indicated, nasogastric decompression, parenteral feedings and antibiotic administration. The presence of hypotension, tachycardia, tachypnea, fever, oliguria, and confusion was accepted

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as septic shock. The diagnosis was made by medical history, clinical findings, plain abdominal radiography, ultrasonography, computed tomography in some patients, isolation of caused microorganism, serological tests, operative findings and histological examination of the perforation edges.

All patients underwent laparotomy and debridement or wedge resection with primary repair; resection with primary anastomosis, resection with ileostomy or exteriorization was used as an emergent surgical procedure.

Results

Totally 84 patients with TIP were treated by surgery in this period. When the 36-year period was sectioned by 6-year periods, we found the incidence of TIPs as 39 (46.4% of total), 31 (36.9%), 7 (8.3%), 4 (4.8%), 2 (2.4%) and 1 (1.2%), respectively.

The mean age of the patients was 37.1 years (range: 7-68 years), and 66 patients (78.6%) were male. TIPs were seen in the second week of TF in 56 patients (66.7%), while in the third week in 28 (33.3%). The mean symptom period was 37.2 hours (range: 0-120 hours), and 28 patients (33.3%) suffered from septic shock. Perforation was single in 69 patients (82.1%), while multiple in 15 (17.9%). The perforations were located within the terminal 60 cm of ileum in 72 patients (85.7%). As a surgical procedure, 34 patients (40.5%) had primary repair, 9 (10.7%) had wedge resection with primary repair, 9 (10.7%) had resection with primary anastomosis, 28 (33.3%) had resection with ileostomy, and 4 (4.8%) had exteriorization. Complications, including deep surgical site infection (in 27 patients, 32.1%), superficial surgical site infection (in 25, 29.8%), incision dehiscence (in 15, 17.9%), and anastomotic leakage (in 7, 8.3%), were seen in total 71 patients (84.5%), with the highest morbidity rate in ileostomy group (in 25 patients, 89.3%). In this series, the mortality rate was 10.7% (9 patients), with the highest mortality rate in exteriorization group (1 patient, 25.0%).

Discussion

TF is a global health problem, which is more often seen in developing countries, in which food, water and sanitation facilities are not sufficient [2, 3, 6, 7]. TF remains a high incidence, particularly due to outbreaks in endemic areas, and it annually affects approximately 22 million cases in the world [2], while approximately 10,000 cases in Turkey [3], with a mean TIP rate of 0.8%-18% [4, 5]. Although south-eastern and eastern Anatolia are endemic TF regions in Turkey [3, 7, 8], it is evident in our results that there is a certain decrease in the incidence of TIPs for the last 36 years in our region, eastern Anatolia, probably due to early and effective antibiotic treatment in TF [3].

TIP generally affects men in the second or third decades of the life during the second or third weeks of TF [2, 3, 6, 7], as was found in our series. Although medical history, clinical findings, isolation of caused microorganism and serological tests are useful [1, 3, 6], and radiological techniques including plain abdominal radiography, ultrasonography and computed tomography [2, 3, 9] are helpful in the diagnosis of TIPs, operative findings associated with histological examination of the perforation edges are generally diagnostic tools [3].

Early surgical intervention reduces the prognosis in TIP, and as a surgical procedure, primary closure is preferred in proper cases, while ileostomy is advised in patients with severe abdominal contamination or with ischemic, inflamed, and oedematous intestine [3-5, 7, 8, 10-14], as was applied in our series.

Despite the thoroughly described diagnostic and therapeutic strategies, the prognosis of TIPs is still grave with mean morbidity of 0.5%-78.6% [3, 7, 8] and mortality rates of 4.5%-75% [3, 7, 8, 11, 14], similar to that of our series. The presentation time, number and localization of the perforations, extensity of the abdominal contamination and the kind of the surgical operation are discussed as risk factors affecting morbidity [3, 7] and mortality [3, 7, 8, 10-14] in TF.

It is clear that each TIP case carries a certain degree of morbidity and mortality risk before, during or after the treatment no matter which of the methods are used; therefore, keeping in mind the TIP in patients with TF, particularly during the second and third weeks of the illness, may improve the prognostic confidence.

Ethics Committee Approval: Ethics committee approval was received for this study from the local ethics committee of Atatürk University Faculty of Medicine.

Informed Consent: Written informed consent was not obtained due to retrospective nature of the study.

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