Isolated Small Bowel Perforation Discovered During Acute Peritonitis

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INTRODUCTION

The most frequent causes of (SBPs) include various malignancies, infections, and non-specific inflammation [1]. In Western populations, malignancies are the most frequent aetiological factors, whereas infections, and in particular typhoid fever, are the primary causes in developing populations [1, 2]. Cases that also show inflammation (as assessed histopathologically) that cannot be linked to a specific disease are deemed to have idiopathic or non-specific inflammation [2]. In this article, we have sought to present our case an unusual case of a spontaneous, isolated ileal perforation discovered around the neck of a laparotomy for peritonitis.

CASE REPORT

It is a young patient of 30 years, with no notable pathological history, admitted to the emergency room for diffuse abdominal pain, associated with vomiting progressing since 5 hours from his admission, the physical examination found a conscious, dehydrated patient and feverish at 39, blood pressure of: 10/06 mmHg, pulse 100 per minute, the abdominal examination showed a generalized abdominal defense.

A biological assessment was carried out showed a hyperleukocytosis at 20,000, a CRP at 300, the rest of the biological assessment was normal, an abdominal scanner was carried out showed a pneumoperitoneum, with an intraperitoneal effusion of great abundance and a thickening of the peritoneal leaflets related to peritonitis (Figure-1).

The patient was operated in emergencies, with a median laparotomy which objectified a purulent effusion of 1 liter, withdrawn and aspirated, surgical exploration objectified several false membranes, with the presence of an isolated small bowel perforation of 1 cm located at 1 meter of the ileo-cecale valve (Figure-2), the gesture consisted in a simple suture of the perforation, with abundant washing and drainage.

The postoperative consequences were marked by a two-day stay in the intensive care unit, then the evolution was positive clinical and biological, then the island was declared outgoing after 5 days.
Fig-1: CT image showing a pneumoperitoneum

Fig-2: Peroperative image showing a isolate small bowel perforation
or generalized tenderness but relatively soft abdomen. The diagnosis is mainly clinical, supported by radiological finding of free gas under diaphragm [7, 6, 8], ultrasound and CT scan were all normal. Laboratory investigations were not helpful in all cases [7-9]. Wani et al., have found that only 29% of patients with non traumatic perforation of terminal ileum have leucocytosis. Furthermore, no single investigation had a high diagnostic accuracy [6].

**DISCUSSION**

In adults, perforation of the small intestine may result from obstruction causing gangrene, strangulation of hernias and trauma.

A number of causes of intestinal perforation have been described but it’s rare. These include immune-mediated, infectious or medication-related, congenital, metabolic, vascular or neoplastic causes (Table-1). However, factors considered to be rare vary by geographical region and the socioeconomic status of the case. For example, cases of perforation related to typhoid fever are extremely rare in Western populations, but this is the most frequent cause in Eastern populations. [3] Similarly, intestinal tuberculosis is extremely rare in developed countries but is still an important intestinal problem in some geographical regions [4].

If, in Western populations, inflammatory bowel diseases are not taken into consideration, malignancies are more often encountered aetiological factor for SBPs.

The clinical presentation in non-traumatic perforation of small intestine is no specific [5, 6]. The abdominal examination has revealed moderate localized

| Table-1: Causes of free perforation of the small bowel |
|------------------------------------------------------|
| **Immune-mediated or inflammatory:**                 |
| Crohn’s disease (CD)                                  |
| Celiac disease or gluten-sensitive enteropathy (GSE)  |
| Collagenous sprue                                     |
| Graft-vs-host disease (GVHD)                          |
| **Infections:**                                       |
| Viral: Cytomegalovirus (CMV)                          |
| Bacteria: Salmonella paratyphi, mycobacterium tuberculosis |
| Parasites: Ascaris lumbricoides                        |
| Protozoa: Entameba histolytica                        |
| **Drugs and biological agents:**                     |
| NSAIDs: Indomethacin                                  |
| Enteric-coated potassium chloride                     |
| Chemotherapy (?steroids)                              |
| Monoclonal antibodies: Bevacizumab                     |
| **Congenital:**                                       |
| Meckel’s diverticulum                                 |
| Jejunal or ileal duplications                         |
| **Metabolic:**                                        |
| Homocystinuria                                        |
| Weyger’s granulomatosis                               |
| Giant cell arteritis                                  |
| Allergic granulomatous arthritis (i.e., Churg-Strauss syndrome) |
| Henoch-schonlein purpura                              |
| Buerger’s disease                                     |
| Atherosclerotic vascular occlusion                    |
| Radiation-induced vascular injury                     |
| **Vascular:**                                         |
| Neoplasm:                                             |
| Primary (adenocarcinoma, EATCL, angiosarcoma)         |
| Secondary (melanoma, breast, mesothelioma, lung)      |

**REFERENCES**

1. Eid HO, Hefny AF, Joshi S, Abu-Zidan FM. Non-traumatic perforation of the small bowel. Afr Health Sci. 2008;8(1):36-39
2. Freeman HJ. Spontaneous free perforation of the small intestine in adults World J Gastroenterol. 2014;20(29):9990-9997.
3. Talwar S, Sharma RK, Mittal DK, Prasad P. Typhoid enteric perforation. Aust N Z J Surg. 1997;67:351-353.
4. Rauf A Wani, Fazl Q Parray, Nadeem A Bhat, Mehmood A Wani, Tasaduq H Bhat, Fowzia Farzana. Nontraumatic terminal ileal perforation. World J Emerg Surg. 2006;1:7.
5. Kimchi NA, Broide E, Shapiro M, Scapa E. Nontraumatic perforation of the small intestine. Report of 13 cases and review of the literature. Hepatogastroenterology. 2002; 49: 1017-1022.
6. Wani RA, Parray FQ, Bhat NA, Wani MA, Bhat TH, Farzana F. Nontraumatic terminal ileal perforation. World J Emerg Surg. 2006; 24: 1-7.

7. Kapoor VK, Mishra MC, Ardhanari R, Chattopadhyay TK, Sharma LK. Typhoid enteric perforations. Jpn J Surg. 1985; 15: 205-208.

8. Atamanalp SS, Aydinli B, Ozturk G, Oren D, Basoglu M, Yildiran MI. Typhoid intestinal perforations: twenty-six year experience. World J Surg. 2007; 3:1883-8.

9. Stoner MC, Forsythe R, Mills AS, Ivatury RR, Broderick TJ. Intestinal perforation secondary to Salmonella typhi: case report and review of the literature. Am Surg. 2000; 66:219-222.

10. Noorani MA, Sial I, Mal V. Typhoid perforation of small bowel: a study of 72 cases. J R Coll Surg Edinb. 1997;42:274-276.

11. Akgun Y, Bac B, Boylu S, Aban N, Tacyildiz I. Typhoid enteric perforation. Br J Surg. 1995;82:1512-1515.

12. Adesunkanmi AR, Ajao OG. The prognostic factors in typhoid ileal perforation: a prospective study of 50 patients. J R Coll Surg Edinb. 1997; 42:395-399.

13. Ben-Baruch D, Powsner E, Wolloch Y, Dintsman M. Free perforation of small intestine in adults. Panminerva Med. 1990;32(2):67-70.

14. Akyildiz HY, Akan AC, Sözüer E, Küçük C, Yilmaz N, Artiş T. Unusual causes of intestinal perforation and their surgical treatment. Ulus Travma Acil Cerrahi Derg. 2009;15(6):579-583.