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Case report

An Unusual Cause of the Ileus: Non-Specific Stenosing Ulceration of the Small Intestine

Leo Grandić[1], Zenon Pogorelić[2], Ivana Kuzmić Prusac[3], Zdravko Perko[1], Vladimir Boschi[1], Ante Punda[4] and Ivana Mrklić[3]

[1] University of Split, Split University Hospital Center, Department of Surgery, Split, Croatia
[2] University of Split, Split University Hospital Center, Department of Pediatric Surgery, Split, Croatia
[3] University of Split, Split University Hospital Center, Department of Pathology, Split, Croatia
[4] University of Split, Split University Hospital Center, Department of Nuclear Medicine, Split, Croatia

A B S T R A C T

Non-specific ulcerations of the small intestine are very rare. The cause and pathogenesis of these lesions remain obscure. The diagnosis of primary ileal ulcer is commonly overlooked and infrequently is established intraoperatively. Here we described a case of a 73-year-old woman who was presented to the emergency surgical department with the five days history of vomiting, distension, constipation, and abdominal pain. On physical examination abdomen was mildly distended and diffusely painful on palpation. Bowel sounds were present and active. Plain abdominal x-ray film showed ileus of the small intestine. Multislice computed tomography showed stenosing process of the ileum. Patient underwent exploratory laparotomy. Approximately 60 cm from the ileocecal valve ileum was inflamed and hypertrophic with a point of obstruction. Grossly, it appeared as a small intestine carcinoma. Involved segment of ileum including the point of obstruction was resected. Pathological examination showed ulceration of the ileum. After the surgery the patient made rapid recovery and was discharged from the hospital on the tenth postoperative day.

***Key words**: non-specific ulcer, ileum, small intestine, ileus*

Introduction

Pathological lesions are relatively rare in the small intestine. While primary simple or peptic ulcers are quite common in the stomach and duodenum, and tuberculous, amoebic, typhoid and other types of ulcerations frequently occur in the colon, they rarely invade the small intestine[1]. The diagnosis is commonly overlooked and seldom established before operation[2]. This relative immunity of the small intestine has never been adequately explained. Primary, non-peptic ulcer of the jejunum or ileum is a little known entity which may cause acute peritonitis, subacute or massive gastro-intestinal bleeding, or partial small bowel obstruction[1]. Perforation of an ileal ulcer may result in an exudative effusion in the ileocecal area, giving rise to symptoms suggestive of appendicitis, perforated peptic ulcer, pancreatitis or ileitis[3]. Non-specific small intestinal ulcers can be also caused by thiazides, potassium tablets, or non-steroidal anti-inflammatory drugs[4]. In literature has been described a syndrome that is characterized by intermittent episodes of small-intestinal obstruction caused by benign ulcerated stenosis, also termed »cryptogenic multifocal ulcerous stenosing enteritis«[5]. It has been reported that the localization was within the jejunum or proximal ileum and that was associated with shallow, rather than deep transmural ulcerations[5,6]. The location of ulcerations and the absence of any associated granulomatous inflammatory changes in resected material are believed to differentiate this entity from Crohn's disease, which is usually localized in the distal ileum and the colon[7]. Treatment of isolated non-specific ulcers includes discontinuation of medications known to cause nonspecific ulcerations, balloon dilation of strictures, and segmental resection of involved segments[8]. Here we report a case of unusual stenosing non-specific ulceration of the ileum causing ileus of small intestine.

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Case Report

A 73-year-old woman was presented to the emergency surgical department with the five days history of vomiting, distension, constipation, and abdominal pain. Cramping pain occurred generally through out the abdomen without radiation. The pain was worst just after meals and was frequently accompanied by borborygmi and vomiting. There was no history of weight loss, melena, hematochezia, or jaundice. She suffers from hypertension and diabetes, and had a history of previous recurring abdominal pain and vomiting. On physical examination, well nourished, slightly obese, in mild distress, afebrile with the vital sings within normal limits. Abdomen was mildly distended and diffusely painful on palpation. Bowel sounds were present and active. The white cell count was 11.02 x 10^9/L (normal range; 4–10 x 10^9/L). All other laboratory tests showed normal values. Plain abdominal X-ray film showed ileus of the small intestine (Figure 1). Multislice computed tomography of the abdomen showed dilatation of the jejunum and upper ileum (Figure 2a), and stenosing process of the ileum, approximately 60 cm from the ileocecal valve (Figure 2b). Radiologist could not express with certainty whether it was a tumor or some other type of stenosing process. Nasogastric tube was inserted and about 3200 mL of intestinal liquid content was removed. She underwent exploratory laparotomy. The jejunum and upper ileum were

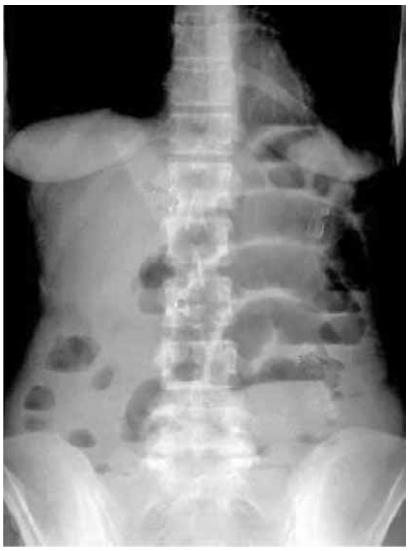

Fig. 1. Plain abdominal X-ray film: Ileus of the small intestine.

hypertrophied and extremely dilated. Distal to this point the ileum and colon were collapsed and small. Approximately 60 cm from the ileocecal valve ileum was inflamed and hypertrophic with a point of obstruction. Grossly, it appeared as a small intestine carcinoma. Using harmonic

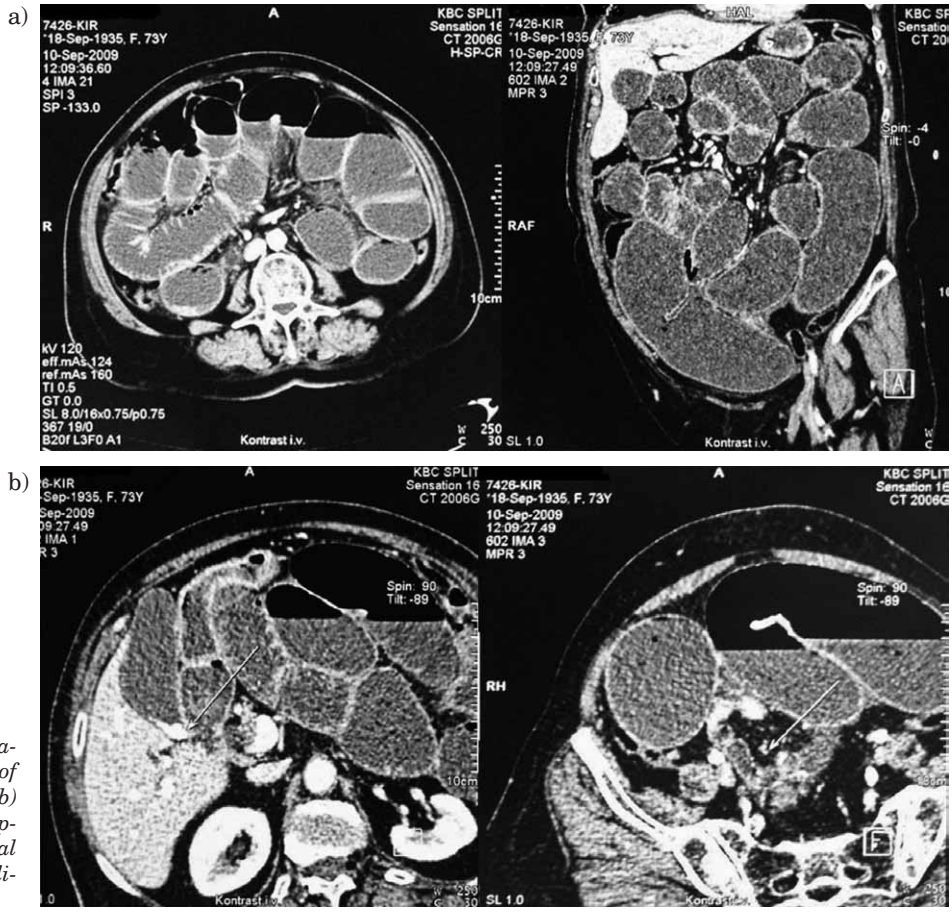

Fig. 2. Multislice computed tomography of the abdomen. a) Dilatation of the jejunum and upper ileum. b) Stenosing process of the ileum, approximately 60 cm from the ileocecal valve. Position of obstruction is indicated by an arrow.

scalpel (Ultracision, Ethicon Endosurgery, Johnson & Johnson Company, Cincinnati, OH, USA) a 27-cm segment of ileum including the point of obstruction was resected. Latero-lateral anastomosis was performed using two linear staplers (Ethicon GIA 75, Inc., Somerville, N.J. USA). After the operation, the patient was treated on a general surgical ward. All the postoperative time the patient was afebrile and completely tolerated *per* oral diet. The patient made rapid recovery and was discharged from the hospital on tenth postoperative day.

Pathological examination showed an ulcer of the ileum. Grossly, the small intestinal specimen contained an ulcer, measuring 3x2.5 cm in diameter, and approximately 0.4 cm in depth. The ulcer was sharply punched defect with slightly elevated margins and with relatively clean and smooth base. The depth of the ulcer involved not only mucosa and submucosa but partially extending into the muscularis propria. There was no free perforation. The surrounding mucosa was unremarkable and the rest of small intestine was also normal. Microscopic examination through this area showed ulceration of the ileal submucosa and upper margin of the bowel musculature (Figure 3a). The base of the ulcer was covered by cellular granulation tissue and necrotic debris (Figure 3b).

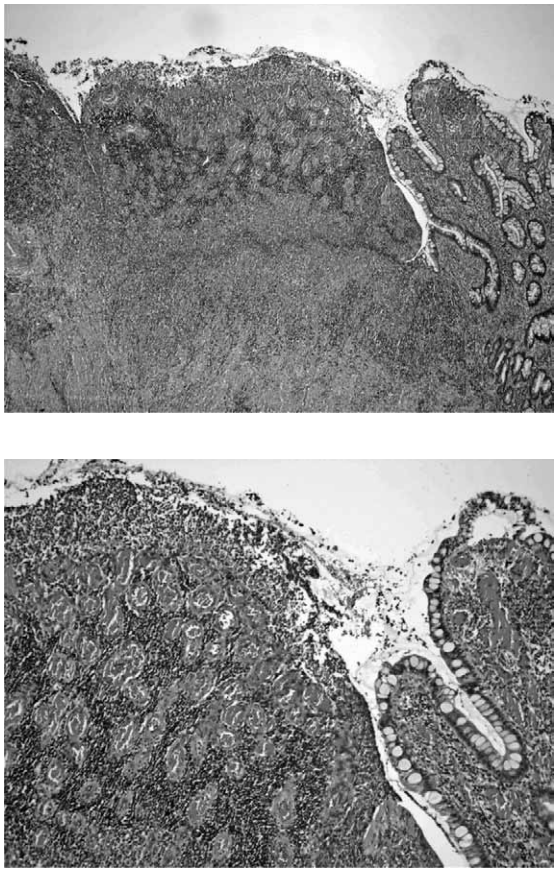

Fig. 3. Pathologic finding. a) The microscopic picture shows a necrotic debris, non-specific inflammation and granulation tissue at the base of the ulcer (HE, x40). b) At higher power view, the base of the ulcer is seen surrounded by congested and inflamed mucosa (HE, x100).

Discussion

Nonspecific small bowel ulceration is certainly very uncommon, though its precise incidence is difficult to quantify[2]. The condition itself may not be a distinct entity but merely embrace idiopathic cases of enteric ulceration after other definitive aetiological types have been excluded[2]. In any case of small bowel ulceration Crohn's disease, idiopathic ulcerative jejunoileitis, drug-induced causes and variety of infectious agents should be excluded[1,4,6,7]. Traumatic injury may also occur. Surgical injury (including peri-anastomotic ulceration) and external trauma from seat belts in motor vehicle accidents are being increasingly recognized[1,6]. Endoscopic biopsies for diagnostic purposes, therapeutic interventions or foreign bodies may induce or be associated with smallintestinal ulcerations[6]. Finally, ischemic pathogenesis that results from a variety of causes may occur[6]. Meckel's diverticulum may be associated with small-bowel ulceration caused by heterotopic functioning gastric mucosa, but usually, the ulceration occurs in the more distal ileum. Ulceration of the small intestine is a rare complication of celiac disease[9], in that case treatment includes a diet trial of gluten restriction and consideration of early surgery because of the potential for associated malignancies[7]. Steroid therapy has not been shown to be effective[7]. Peptic ulceration may occur but this is unusual in the jejunum and proximal ileum. In this location, a peptic ulcer could hypothetically be a clue to an occult Zollinger-Ellison syndrome from a gastrinoma, or heterotopic functioning gastric mucosa[10].

The cause of non-specific ulcer remains unknown. Many studies showed that potassium, thiazides or non-steroidal anti-inflammatory drugs were implicated in ethiology of non-specific small intestine ulcerations[2,4]. Presented patient did not take any of these drugs. The earlier reports described a high incidence of perforation[3], while more recent studies recorded a high incidence of intestinal obstruction[2,6], like in the presented case. In a case of gastrointestinal haemorrhage, either acute or chronic, the most common symptom is anaemia[2]. Later studies suggest that patients with bleeding tend to be younger than those with obstruction[1,2,6]. Ileal ulcerations are most common than jejunal. Jejunal ulcers have a higher incidence of perforation[2].

Non-specific small intestine ulceration was usualy superficial, involved the mucosa, sometimes the submucosa, but did not extend deeper into underlying tissue. All of these stenosis were associated with a nonspecific inflammatory infiltrate only.

Surgical resection and primary anastomosis is the best way of treatment[8]. Freeman reported that surgical resection resulted in complete recovery in about 40% but a second resection for recurrent stenosis was needed in 25% of patients[6]. The Harmonic scalpel (Ultracision) is a very useful tool in abdominal surgery and significantly reduces the time of surgery[11–18]. With interrupted usage we have been able to prevent lateral thermal damage of tissue and thermal injuries of other organs below. The minimization of lateral thermal injury is very important especially when operating near vital areas[19–21].

Conclusion

Because of non-specific simptomathology of the non-specific stenosing ulceration of the small intestine, radiologists very often can not express with certainty etiology of stenosing process, and correct diagnosis in many cases is established intraoperatively. The best way of treatment is local resection and primary anastomosis. In a case of perforation simple closure of a perforated ulcer is not recommended as in perforation of gastric or duodenal peptic ulcer[6,8]. In case of unclear clinical condition of intestinal obstruction that led to the small bowel ileus, surgeon should always think of the possibility of non-specific small bowel ulceration.

REFERENCES

1. CASPARY WF, STEIN J, Eur J Gastroenterol Hepatol, 11 (1999) 21. — 2. THOMAS WE, WILLIAMSON RC, Postgrad Med J, 61 (1985) 587. DOI: 10.1136/pgmj.61.717.587 — 3. STRODEL WE, ECKHAUSER FE, SIMMONS JL, Dis Colon Rectum, 24 (1981) 183. DOI: 10.1007/BF02962330 — 4. MATSUMOTO T, LIDA M, MATSUI T, YAO T, WATANABE H, YAO T, OKABE H, J Clin Pathol, 57 (2004) 1145. DOI: 10.1136/jcp.2003.015735 — 5. SPENCER H, KITSANTA P, RILEY S, J R Soc Med, 97 (2004) 538. DOI: 10.1258/jrsm.97.11.538 — 6. FREEMAN HJ, World J Gastroenterol, 15 (2009) 4883. DOI: 10.3748/wjg.15.4883 — 7. FREEMAN HJ, Can J Gastroenterol, 21 (2007) 363. — 8. KARNAM US, ROSEN CM, RASKIN JB, Curr Treat Options Gastroenterol, 4 (2001) 15. DOI: 10.1007/s11938-001-0043-1. — 9. SELIGER G, GOLDMAN AB, FIROOZNIA H, LAWRENCE LR, Am J Dig Dis, 18 (1973) 820. — 10. PERLEMUTER G, CHAUSSADE S, SOUBRANE O, DEGOY A, LOUVEL A, BARBET P, LEGMAN P, KAHAN A, WEISS L, COUTURIER D, Gastroenterology, 110 (1996) 1628. DOI: 10.1053/gast.1996.v110.pm8613071 — 11. PERKO Z, DRUŽIJANIĆ N, BILAN K, POGORELIĆ Z, KRALJEVIĆ D, JURIČIĆ J, SRŠEN D, KRNIĆ D, Coll Anthropol, 32 (2008) 187. — 12. PERKO Z, SRŠEN D, POGORELIĆ Z, DRUŽIJANIĆ N, KRALJEVIĆ D, JURIČIĆ J, Hepatogastroenterology, 55 (2008) 814. — 13. PERKO Z, BILAN K, POGORELIĆ Z, DRUŽIJANIĆ N, SRŠEN D, KRALJEVIĆ D, JURIČIĆ J, KRNIĆ D, Coll Anthropol, 32 (2008) 307. — 14. PERKO Z, BILAN K, VILOVIĆ K, DRUŽIJANIĆ N, KRALJEVIĆ D, JURIČIĆ J, KRNIĆ D, SRŠEN D, POGORELIĆ Z, Coll Anthropol, 30 (2006) 937. — 15. DRUŽIJANIĆ N, PERKO Z, KRALJEVIĆ D, JURIČIĆ J, MARAS ŠIMUNIĆ M, BILAN K, KRNIĆ D, POGORELIĆ Z, TOMIĆ S, SRŠEN D, Hepatogastroenterology, 55 (2008) 356. — 16. POGORELIĆ Z, STIPIĆ R, DRUŽIJANIĆ N, PERKO Z, GRANDIĆ L, VILOVIĆ K, MRKLIĆ I, JURIĆ I, BOSCHI V, BEKAVAC J, Coll Antropol, 35 (2011) 1299. — 17. DRUŽIJANIĆ N, PERKO Z, SRŠEN D, POGORELIĆ Z, SCHWARZ D, JURIČIĆ J, Hepatogastroenterology, 56 (2009) 1028. — 18. PERKO Z, RAKIĆ M, POGORELIĆ Z, DRUŽIJANIĆ N, KRALJEVIĆ J, Surg Today, 41 (2011) 216. DOI: 10.1007/s00595-010-4266-4 — 19. PERKO Z, POGORELIĆ Z, BILAN K, TOMIĆ S, VILOVIĆ K, KRNIĆ D, DRUŽIJANIĆ N, KRALJEVIĆ D, JURIČIĆ J, Surg Endosc, 20 (2006) 322. DOI: 10.1007/s00464-005-0089-6. — 20. POGORELIĆ Z, PERKO Z, DRUŽIJANIĆ N, TOMIĆ S, MRKLIĆ I, Eur Surg Res, 43 (2009) 235. DOI: 10.1159/000226219. — 21. DRUŽIJANIĆ N, POGORELIĆ Z, PERKO Z, MRKLIĆ I, TOMIĆ S, Can J Surg, 55 (2012) 317. DOI: 10.1503/cjs.000711.

Z. Pogorelić

University of Split, Split University Hospital Center, Department of Pediatric Surgery, Spinčićeva 1, 21000 Split, Croatia
e-mail: zenon@vip.hr

ILEUS UZROKOVA NESPECIFIČNIM STENOZIRAJUĆIM ULKUSOM ILEUMA

SAŽETAK

Nespecifični ulkusi tankog crijeva su vrlo rijetki. Uzrok i patogeneza nastanka ovih lezija je nepoznata. Dijagnoza primarnog ulkusa ileuma obično se ne prepozna i nerijetko se postavi tek prije operacije ili intraoperacijski. Predstavljamo slučaj pacijentice, starosti 73 godine, koja je upućena na Hitan kirurški prijam zbog povraćanja, konstipacije, distenzije i bolova u trbuhu, koji traju pet dana. Na fizikalnom pregledu trbuh je bio blago distendiran i difuzno bolan na palpaciju. Crijevna peristaltika je bila prisutna i aktivna. Nativni RTG trbuha pokazao je ileus tankog crijeva. Kompjuterizirana tomografija trbuha pokazala je stenozirajući proces u području ileuma. Indicirana je žurna eksploracijska laparotomija. Eksploracijom trbuha na oko 60 cm od ileocekalne valvule ileum je bio upaljen i hipertrofičan, sa jasno vidljivim mjestom opstrukcije. Makroskopski je izgledalo da se radi o karcinomu tankog crijeva. Zahvaćeni dio ileuma, zajedno s mjestom opstrukcije je reseciran. Patohistološkom analizom preparata postavljena je dijagnoza ulkusa tankog crijeva. Pacijentica se vrlo brzo oporavila, te je otpuštena iz bolnice desetog poslijeoperacijskog dana.