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Spontaneous Pediatric Colon Perforation: A Rare Case Report

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Running title: Spontaneous Colon Perforation

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1. Abstract

Idiopathic colon perforation is a rare condition in children, more commonly observed at the extremes of age. Frequent sites include the splenic flexure, ileocecal region, and lower sigmoid colon. If not treated promptly, this condition can lead to high mortality and morbidity rates.We present the case of a 7-year-old girl with fever, diarrhea, nausea, vomiting, and progressive abdominal distention. A week prior to admission, she had received ibuprofen for an upper respiratory tract infection. Her condition worsened despite treatment, raising suspicion of an abdominal complication.Due to clinical signs of peritonitis, a diagnostic laparoscopy was performed, revealing a perforation in the transverse colon. Surgical intervention included primary suture repair and prophylactic appendectomy. Postoperative care led to full recovery.

2. Introduction

Spontaneous perforation of the colon (SPC) is defined as the sudden rupture of a healthy colon in the absence of trauma or underlying disease [1]. It is rare, with fewer than 100 cases reported [2]. Although more common in the elderly and neonates, SPC can occur at any age [3]. It typically presents with peritonitis and requires prompt surgical management. It should be considered in the differential diagnosis of acute peritonitis, especially when free air under the diaphragm is present [4].

3. Case Report

A 7-year-old girl with no significant medical history presented with agitation and disorientation. She had experienced fever, watery diarrhea, nausea, and vomiting for two days. A week earlier, she had been treated with ibuprofen (5 mL TID for two days) for an upper respiratory tract infection. On arrival at the emergency department, her temperature was 38.4°C, and she reported significant abdominal pain. An abdominal X-ray showed bowel distention. A laxative and glycerin enema were administered. The following day, her condition deteriorated with persistent fever and worsening abdominal pain, prompting further evaluation.

Physical examination revealed abdominal tenderness and muscle guarding. There were no abnormalities in the head, neck, chest, or extremities. Abdominal percussion revealed tympanic resonance; palpation was limited by patient discomfort. A digital rectal exam revealed fecal material in the rectum.Laboratory results: WBC count of 18,820/mm³, hemoglobin 12.2 g/dL, platelet count 425,000/mm³, and CRP 27.42 mg/L. Electrolytes were within normal range. Intravenous fluids and supportive care were initiated. Follow-up abdominal imaging revealed subphrenic air (Figure 1), prompting a contrast-enhanced abdominal CT. The CT showed dilated bowel loops, interloop free fluid, and free intraperitoneal air, consistent with hollow viscus perforation (Figure 2).Diagnostic laparoscopy confirmed purulent and serous fluid in the peritoneal cavity (Figure 3) and a perforation on the antimesenteric wall of the transverse colon (Figure 4). There was no fecal contamination. Primary repair of the perforation and prophylactic appendectomy were performed. Histopathology showed inflammatory cell infiltration without malignancy or ischemia.The patient had an uneventful recovery in the PICU and was discharged in stable condition. Outpatient follow-up confirmed full recovery.

4. Discussion

Colon perforation is a surgical emergency in pediatrics. In neonates, it's often associated with prematurity, low birth weight, traumatic delivery, congenital bowel anomalies, vascular insufficiency, or infections [5]. However, this patient had no such risk factors.NSAID use was noted. While upper GI complications from NSAIDs are well-documented, their

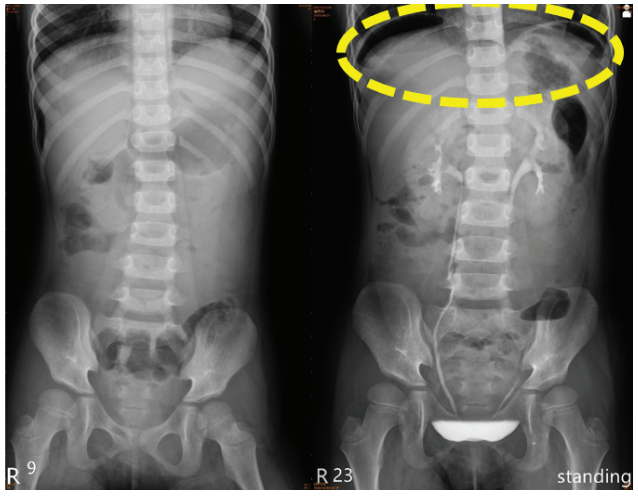

Figure 1: KUB imaging performed one day prior to admission and on the day of admission revealed progressivefindings. The KUB on the day of admission demonstrated the presence of subphrenic air, highlighted by a dashed circle for clarity.

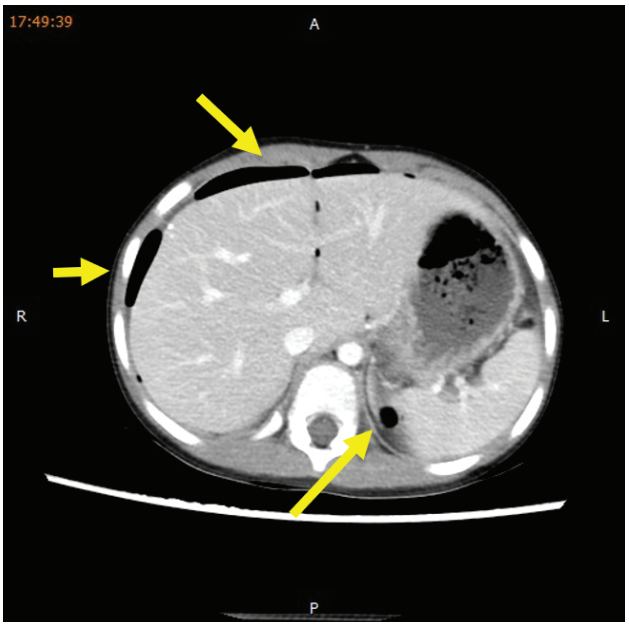

Figure 2: Free air and fluid collection in the peritoneal cavity was noted, (arrow). Continuous dilatation of bowel loops with mild wall thickening is noted (dashed circle).

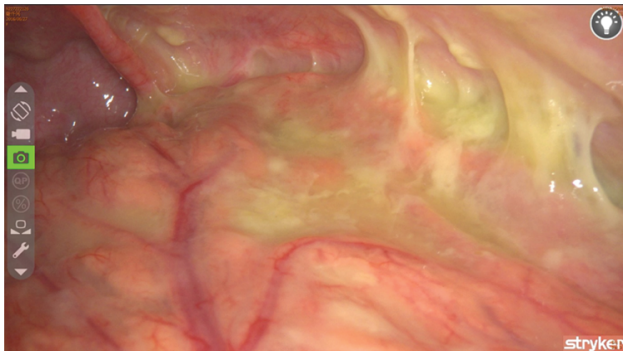

Figure 3: Purulent and reactive serous fluid within the peritoneal cavity.

effects on the lower GI tract are less understood. NSAID-induced colonic complications include diaphragm disease and strictures, typically linked to chronic use [6-8]. However, emerging reports, including this one, suggest that even short-term use may contribute to perforation [9-11].Bowel perforation in children may arise from causes like necrotizing enterocolitis, Hirschsprung disease, mechanical obstruction, infections, or idiopathic factors [12]. A study by Chang et al. [13] found that non-traumatic colon perforations were most common in children under 5, often linked to infections such as non-typhoidal Salmonella. However, in our case, no infectious cause was identified.Kim et al. [14] emphasized that primary repair is effective in stable pediatric patients with spontaneous colon perforation. Their findings support primary repair as a first-line option when clinically appropriate.

5. Conclusion

Healthcare providers should be aware of idiopathic colon perforation in children presenting with persistent abdominal distention, prolonged diarrhea, or recent NSAID use. Early diagnosis and prompt surgical management are essential to reduce morbidity and ensure favorable outcomes.

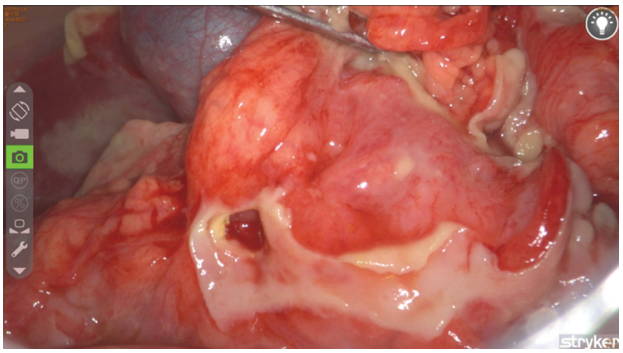

Figure 4: Perforation of antimesenteric wall of the transverse colon.

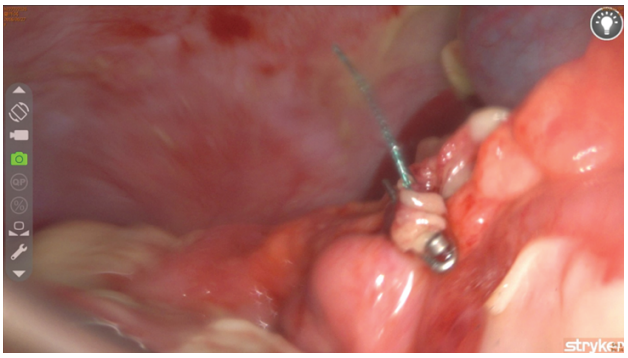

Figure 5: Primary suture with V-lock.

References

1. Yang B, Ni HK.Diagnosis and Treatment of Spontaneous Colonic Perforation: Analysis of 10 Cases. World Journal of Gastroenterology. 2008; 14: 4569-4572.
2. Zachariah SK, Raja N. Spontaneous Perforation of the Colon and Hypothyroidism: Report of a Case and Review of Literature. Gastroenterology Research. 2020; 3: 147-149.
3. Makki AM, Hejazi S, Zaidi NH, Johari A, Altaf A. Spontaneous Perforation of Colon: A Case Report and Review of Literature. Case Reports in Clinical Medicine. 2014; 3: 392-97.
4. Digray NC, Mengi Y, Goswamy HL, Thappa DR. Colorectal perforations in neonates with anorectal malformations. PediatrSurg Int. 2001; 17: 42-4
5. Tarrado X, Castañón M, Thió M, Valderas JM, Garcia Aparicio L, Morales L. Comparative study between isolated intestinal perforation and necrotizing enterocolitis. Eur J Pediatr Surg. 2005; 15:88-94.
6. Eis MJ, Watkins BM, Philip A, Welling RE. Nonsteroidalinduced benign strictures of the colon: a case report and review of the literature. Am. J. Gastroenterol. 1998; 93: 120-1
7. Bjarnason I, Hayllar J, Macpherson AJ, Russell AS. Side effects of nonsteroidal anti-inflammatory drugs on the small and large intestine in humans. Gastroenterology. 1993; 104: 1832-47.
8. Langman MJ, Morgan L, Worrall A. Use of anti-inflammatory drugs by patients admitted with small or large bowel perforation and haemorrhage. BMJ 1985; 290: 347-9.

9. Byrne MF, McGuinness J, Smyth CM, Manning DS, Sheehan KM. Nonsteroidal anti-inflammatory drug-induced diaphragms and ulceration in the colon. Eur J Gastroenterol Hepatol. 2002; 14: 1265-1269.
10. Langman MJ, Morgan L, Worrall A. Use of anti-inflammatory drugs by patients admitted with small or large bowel perforations and haemorrhage. Br Med J (Clin Res Ed). 1985; 290: 347-349.
11. Schiffmann L, Kahrau S, Berger G, Buhr HJ. Colon perforation in an adolescent after short-term diclofenac intake. ANZ J Surg. 2005; 75: 726-727.
12. Yamamoto T, Hayashi Y, Suzuki H, Tahara T. Early onset of cecal perforation in neonatal, recto-sigmoid type Hirschsprung's disease. Acta Paediatr JPN. 1994; 36: 717-9.
13. Chang YJ, Yan DC, Kong MS, Chao HC, Huang CS, Lai JY. Non-traumatic colon perforation in children: a 10-year review. PediatrSurg Int. 2006; 22(8):665-9.
14. Kim SH, Cho YH, Kim HY. Spontaneous Perforation of Colon in Previously Healthy Infants and Children: Its Clinical Implication. Pediatr Gastroenterol Hepatol Nutr. 2016;19(3):193-198.