J Pediatr Adolesc Surg. 2024; 2:44-47
DOI: https://doi.org/10.46831/jpas.v1i2.87

Case Report

Spontaneous caecal perforation secondary to abdominal wall abscess or vice versa - case report and review of literature

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Cite as: Aditya S, Dinesh B, Harsha V, Vipal P, Bhavana M, Shraddha M. Spontaneous caecal perforation secondary to abdominal wall abscess or vice versa - case report and review of literature. J Pediatr Adolesc Surg. 2024; 2:44-47.

ABSTRACT

Background: Spontaneous caecal perforation secondary to abdominal wall abscess is a rare entity. There may be abdominal wall abscess due to spontaneous caecal perforation. Small and large bowel perforation in neonatal period is common secondary to necrotizing enterocolitis. But beyond neonatal caecal perforation is unusual.

Case Presentation: We are reporting an interesting case of spontaneous caecal perforation in two year old female child without any sign and symptoms of peritonitis or abdominal discomfort secondary to abdominal wall abscess. Or it may be vice versa, abdominal wall abscess develops secondary to caecal perforation.

Conclusion: Caecal perforation in children beyond to neonatal period is extremely rare. To the best of our knowledge, I have never seen in English literature of spontaneous caecal perforation secondary to abdominal wall abscess or vice versa.

Keywords: Abscess, Caecal perforation, Spontaneous caecal perforation.

INTRODUCTION

Caecal perforation is commonly found in beyond the paediatric age group (adult age group) secondary to inflammatory bowel disease, iatrogenic trauma, appendicitis, malignancy, diverticulitis, pseudo obstruction and lymphoma [1-6]. Various reported reasons of caecal perforation in adults after surgical procedure of other than bowel are post caesarian section, post renal transplantation, and post hernia repair [7-9]. Spontaneous gastrointestinal perforation is common in neonates (61.5%) and it decreases with age in children. Colonic perforation in term infants is commonly caused by Hirschsprung disease. Necrotizing enterocolitis (NEC) is the leading cause of colonic perforation in preterm neonates [10,11]. Congenital gastrointestinal anomalies, inflammatory conditions (like necrotizing enterocolitis appendicitis, typhoid,

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Submitted on: 24-04-2021
Accepted on: 25-06-2021

tuberculosis, Crohn disease), iatrogenic injury, foreign body ingestion, intussusception, blunt trauma are the causes of gastrointestinal perforation in paediatric patients [12,13]. In presenting case patient had primarily anterior abdominal wall abscess. Anterior abdominal wall abscess may be due to folliculitis and progression of inflammation. But abdominal wall abscess can represent any intra-abdominal pathology like liver abscess ruptured in anterior abdominal wall, acute suppurative appendicitis or appendicular mass, and carcinoma colon [14,15]. In our case primarily abdominal wall abscess was visible. Bowel perforation was obvious after rupture of abdominal wall abscess and diagnosis of caecal perforation was made after exploration. Very few cases of caecal perforation in paediatric age groups were reported in English literature till now.

CASE REPORT

A two year old female child admitted with complaint of fecal discharge coming out through a wound located at right hypochondriac region for two days. She was born at home by term normal vaginal delivery. The baby developed a pustule at right upper quadrant of abdomen. Pustule ruptured after three days. From the same day fecal matter was coming out from ruptured site. There was no history of fever, trauma, pain abdomen, constipation, diarrhea or blood in stool. There was no history previous consultation and surgical intervention. On clinical examination, she was poorly nourished baby. She was alert and active according to age. There was no pallor, icterus or palpable lymph node anywhere. A 2 x 2 cm size wound was present at right hypochondriac region surrounding by red erythematous skin contaminated with fecal matter (Fig 1).

Figure 1: Fecal Discharge from Abdominal wall Abscess

All the routine blood and radiological investigation were done. The patient was optimized, and we proceeded for exploration. On exploration, peritoneal cavity was clean, no sign of fecal contamination. But the caecum was adhered to anterior abdominal wall. Adhesion of caecum with abdominal wall was released. There was a perforation in the cecum approximately 2 cm distal to base of appendix and it was adhered to anterior abdominal wall. Appendix appeared normal (Fig 2). We did appendectomy and repair of caecal perforation in two layers. The entero-cutaneous fistula site and laparotomy site was repaired in layers. After post-operative day three she passed stool. Oral feed started on post-operative day six. Both wounds stayed healthy. She was discharged on post-operative day seven. On serial Follow-up's patient developed no complications.

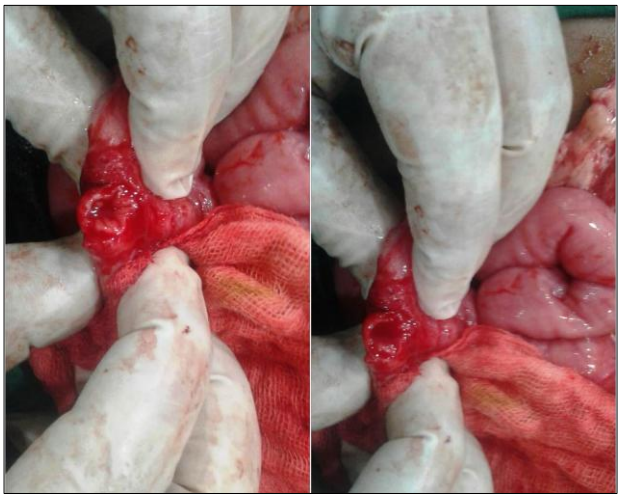

Figure 2: Perforation in Cecum

DISCUSSION

Gastrointestinal perforations have so many causes and present a challenge to paediatric surgeons. Neonates and infants cannot give their own history and older children are seldom helpful in this matter as well. Here we are discussing this case because there were no sign and symptom of bowel perforation. There were no sign of peritonitis. She had simply an abdominal wall abscess formation at right upper quadrant of abdomen and ruptured spontaneously after three days and surprisingly fecal matter coming out from ruptured abscess site. Very few cases of spontaneous caecal perforation were reported in paediatric patients. Reported cases of caecal perforation in paediatric patients [Table 1] had diarrhoea with fever, impacted faecolith, acute gastroenteritis, and as a complication of appendicitis [16-20].

Spontaneous colonic perforation is classified in two groups (a) idiopathic (b) stercoral. This classification was given in 1984 by J.A. Berry. He classified on the basis of etio-pathological causes lesions. Stercoral perforation shows colonic inflammation, ulcer and necrosis. Idiopathic spontaneous perforation shows minimal or no fecal contamination, linear tear and normal appearing colonic wall [21-23]. The criteria for stercoral colonic perforation is a perforation which is more than 1 cm in

diameter at anti-mesenteric border, with fecal contamination of peritoneal cavity, perforation site and gut. There may be ulcer, chronic inflammation, necrosis at or around the perforation site. However we have to exclude obstruction, tumors, external injury, and diverticulosis. This criterion was given by Maurer CA et al in 2000 [24].

Table 1- Showing reported cases of caecal perforation in paediatric patients.

S. No.	Reference year	Age	Gender	Caecal perforation secondary to-
1	E. D. Sy et al. 2001 [11]	2 Y	M	Diarrhoea and fever
2	VL Simpkin et al. 2009 [12]	11 Y	M	faecolith impaction
3	Duvuru Rama et al. 2014 [13]	15 Y	M	acute fulminant gastroenteritis
4	Calista harbaugh et al. 2016 [14]	16 Y	M	Secondary to bacterial infection
5	Ravi Shankar J C et al. 2016 [15]	19 Y	F	Secondary to appendicitis
6	Dinesh Kumar Barolia et al.	2 Y	F	secondary to abdominal wall abscess or vice versa

Various reported causes of Spontaneous caecal perforation are trauma, malignant obstruction, Impaction of foreign bodies in caecum, volvulus, inflammatory bowel conditions, and bowel infection [25]. Perforation of healthy caecum is rare. Various different possible mechanisms were explained in different articles. VL Simpkin et al. reported a case of caecal perforation in 11 years old male child in 2009 due to impaction of faecolith. Impacted faecolith in caecum causes distension and stretching of caecal wall and perforation occurred [17]. Dehydration or inadequate hydration is a risk factor associated with non-typhoid Salmonella infection leads to bowel perforation. Severe dehydration can leads to bowel ischemia and cause perforation. Spontaneous caecal perforation is the complication of fulminant gastroenteritis in children [18,26]. Primary appendicitis can cause periappendicitis. Periappendicitis leads to caecal inflammation and cause posterior caecal wall perforation [20].

Probably in our case the abdominal wall abscess could cause adhesion of caecum at the deep site of abdominal wall abscess. Further due to inflammatory reaction adhere caecal wall became oedematous and pyogenic microorganism could perforation and fecal fistula formation occurred. Early surgery is indicated in spontaneous enterocutaneous fistula. Peritoneal contamination is not found in such cases [27]. We did double layer repair of perforation. The follow-up period was peaceful for parents and pleasant for patient

Perforation of apparently healthy caecum is very uncommon. Very few cases were reported in English literature of spontaneous perforation of caecum in paediatric age group. Exploration and restoration of continuity is the treatment of choice

Conflict of Interest: Nil

Source of Support: Nil

Consent to Publication: Author(s) declared taking informed written consent for the publication of clinical photographs /material (if any used), from the legal guardian of the patient with an understanding that every effort will be made to conceal the identity of the patient, however it cannot be guaranteed.

Authors Contribution: Author(s) declared to fulfill authorship criteria as devised by ICMJE and approved the final version. Authorship declaration form, submitted by the author(s), is available with the editorial office.

Acknowledgements: None

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