



A Perforated Jejunal Diverticulum in a Childhood

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Abstract:

Jejunal diverticula are extremely rare and even less in children and adolescents. Certain diseases such as Marfan's syndrome, cystic fibrosis and other genetic disorders may however predispose patients to diverticular disease at a younger age. Clinically they may be asymptomatic or may give rise to complications such as chronic abdominal pain, malabsorption, hemorrhage, diverticulitis, obstruction, abscess formation and rarely diverticular perforation. We report a case of peritonitis due to perforation of non-congenital diverticulum of first jejunal loop in a 15 year old girl. The cause of perforation was penetration of diverticular wall by vegetable fiber (dried leaf rosemary). This case report highlights the rarity of acquired jejunal diverticulosis in children as well as the peculiar manner of perforation.

Key words: Diverticulum, Diverticulitis, Jejunum, Peritonitis, Abdominal Pain, Humans.

Introduction

Diverticula can occur from the stomach to rectosigmoid. They can be of congenital or acquired type. In the congenital diverticula all 3 coats of bowel are present while in acquired diverticula muscular layer is absent. Adult studies report an incidence of 0.5-2.3% (diagnostic imaging) and 0.2-1.3% (autopsy) [1]. Diverticular disease is generally asymptomatic; it becomes a clinical entity in the event of complications such as bleeding, occlusion, perforation and diverticulitis. These complications represent the 10-30% of cases [2,3,4]. Perforation is one of the less frequent complications of diverticular disease of jejunum and most of the observations in literature are in form of case reports. Jejunal diverticula is rarity

in individuals less than 40 years of age and thus incidence of jejunal diverticular disease in children has not been reported till date. A single case of perforated diverticulum of jejunum in childhood was found on extensive search of literature, a case of 11 year old boy with congenital giant diverticulum in which the perforation was due to diverticulitis [5]. We report here a case of perforated, non-congenital, jejunal diverticulum.

Case Report

An apparently healthy 15 years old girl of Morocco origin presented with abdominal pain, vomiting and distention of abdomen. On examination, she

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was febrile, pale, with a rapid pulse and normal blood pressure. On systemic examination there was absence of bowel sounds and rebound tenderness. Rest of systemic examination was non-contributory. Laboratory investigations showed leucocytosis ($18000/\text{mm}^3$), neutrophilia (93%), other blood tests were normal. Abdominal radiography showed dilated small bowel loops with air-fluid levels and evidence of pneumo-peritoneum. With the diagnosis of acute-abdomen, the patient was taken to the operating room and underwent laprotomy which showed generalized purulent free fluid due to perforated diverticulum of the first jejunal loop on mesenteric side, 4 cm from the ligament of Treitz. Jejunal diverticulum was 2 cm in diameter and the perforation was due to vegetable fiber penetrated into the wall of diverticulum (dried rosemary leaf). The remaining small and large bowel and other peritoneal viscera were normal. A bowel resection, including the diverticulum, with end-to-end extramucosal one layer anastomosis was performed. Histopathological analysis confirmed acquired diverticulum as only mucosa and submucosa were herniated through the muscular layer of intestinal wall (pseudo-diverticulum). The postoperative course was uneventful and the patient improved.

Discussion

Jejunal diverticula are extremely rare. Only a few case reports have been found in children while specific data regarding incidence in children is scarce. Adult studies have reported an incidence of 0.2-1.3% from autopsy studies and 0.5-2.3% from contrast studies [1]. Jejunal diverticulosis is very uncommon in individuals less than 40 years of age and thus incidence of jejunal diverticular disease in childhood has not been reported to date. Certain diseases such as Marfan's syndrome, cystic fibrosis and other genetic disorders may however

predispose patients to diverticular disease at a younger age [6,7,8].

Jejunal diverticula are multiple outpouchings of mucosa and submucosa. Although the true etiology of jejunal diverticulosis is unknown, this condition is believed to develop from a combination of abnormal peristalsis, intestinal dyskinesia, and high segmental intra-luminal pressures. These diverticula arise on the mesenteric border where the mesenteric vessels penetrate the jejunum. These diverticula are pseudo-diverticula [9]. In the congenital diverticula all 3 coats of bowel are present while in acquired or pseudo-diverticula muscular layer is absent [10,11].

Generally, jejunal diverticula are asymptomatic however numerous articles have reported a spectrum of complications that range from minor to potentially life-threatening [10]. Less serious complications include chronic gastrointestinal complaints like abdominal pain, bloating, diarrhoea and symptoms of malabsorption. The acidic, stagnant environment of these sacs has been thought to encourage bacterial overgrowth and low-grade inflammation causing these symptoms [10]. Bowel obstruction may occur due to external compression from an adjacent loop of jejunum containing a large diverticulum, intussusception or volvulus [1,10]. Serious complications include perforation and peritonitis or haemorrhage [5].

Conclusion

Perforation is one of the dreaded complications of jejunal diverticular disease both in adults and in children in which a prompt surgical intervention can be lifesaving. Our case responded well to bowel resection with end-to-end primary anastomosis. This case report highlights the rarity of acquired jejunal diverticulosis in children as well as the peculiar manner of perforation (dried rosemary leaf).

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