ORIGINAL RESEARCH PAPER
Volume - 9 | Issue - 8 | August - 2020 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

JEJUNAL DIVERTICULOSIS IS NOT ONLY AN INCIDENTAL FINDING BUT MAY MIMIC MALIGNANCY AND CAUSES DIAGNOSTIC DILEMMA : A CASE SERIES STUDY AND REVIEW OF LITERATURE

Gastroenterology

Dr. Anil Kumar Choudhary* Assistant Professor, Department of Surgery Anugrah Narayan Magadh Medical College and Hospital, Gaya-823001 India *Corresponding Author

Dr. A. K. Jha suman Associate Professor (Department of surgery) Anugrah Narayan Magadh Medical College and Hospital, Gaya-823001 India

Dr. S. N. Singh Assistant Professor (Department of surgery) Anugrah Narayan Magadh Medical College and Hospital, Gaya-823001 India

ABSTRACT

Jejunal diverticulosis is a rare entity. Although it is a benign condition but it may mimic a malignant condition. Symptoms such as malabsorption, anemia, weight loss, loss of appetite, pain abdomen with gastrointestinal obstruction and bleeding mimic symptoms of malignancy. The incidence is common in elderly patient with male preponderance. As jejunum could not be visualized by endoscopy it makes the diagnosis even more difficult. This condition gets rarely diagnosed preoperatively. It gets diagnosed incidentally during laprotomy for acute abdomen or on gastrointestinal radiological contrast study. Resection of the involved segment and anastomosis either jejuno-jejunal or jejuno-ileal is the treatment of choice. The diagnosis is very difficult because it cannot be seen by endoscope and sometimes remains undiagnosed causing unnecessary morbidity and mortality to patient. It is an important entity and not just only an incidental finding. One should keep jejunal diverticulosis in mind if an elderly patient presents with symptoms of gastrointestinal malignancy and in spite of all investigation diagnosis could not be made.

KEYWORDS

jejunum .diverticulosis. Malabsorption .malignancy. Resection.

INTRODUCTION:

Diverticular disease of small intestine is uncommon except for Meckel's diverticulum. There are two types of diverticulum-congenital or true and acquired or false. All the three layers of intestine are found in the true diverticulum while acquired diverticulum lacks proper muscular coats. Mucosa and sub mucosa protrudes from the defect in intestine where the blood vessel enters in it to produce false diverticula. Diverticula are common in large intestine followed by duodenum. Jejunoileal diverticula are very rare and Jejunal diverticula are the rarest of all small bowel diverticula. Only 0.5%-2.3% of incidence is reported in the literatures that too in contrast study of gastro intestinal tract. An incidence of 0.3%-4.5% is reported in autopsies.[1, 2] They are usually found incidentally on performing upper gastrointestinal radiological contrast study or sometimes while performing exploratory laparotomy. Most of the cases remain asymptomatic but sometimes may present as an acute abdomen. They may present as an acute intestinal obstruction, gastrointestinal haemorrhage and rarely intestinal perforation.[3,4] Usually they present as chronic case of vague abdominal pain, chronic gastrointestinal haemorrhage, malabsorption and subacute intestinal obstruction. These chronic symptoms some time mimics gastrointestinal malignancy and present great difficulty in the definite diagnosis. Here we are presenting series of three cases, their presentation, diagnosis and management. We also reviewed the literature for this uncommon disease and we are sharing our experience regarding management of this condition.

Case 1: An old lady of age 52 years presented to the emergency with pain abdomen for four months aggravated since three days. Non passage of stool and flatus for 3 days. Distension of abdomen and fever for one day. She had history of loss of appetite and significant loss of weight. She had history of maelena one to two episode in last four months. She had undergone total abdominal hysterectomy eight years ago. None of her first degree relative suffered from any malignancy in the past. At the time of admission she was tachypnoeic, her pulse was 104/minutes, and her blood pressure was 90/62 mm Hg. Her abdomen was distended and was resonant on percussion with absent bowel sound. Her WBC was 17000/Cumm with neutrophilia and her electrolytes were deranged. Her x-ray abdomen and chest showed free gas under diaphragm. She was posted for exploratory laparotomy in the emergency after resuscitation. Per operative the abdomen was full of bilious fluid. We were expecting a duodenal perforation but we found multiple diverticula in the jejunum with a perforation. The Jejunal diverticula were at anti mesenteric border (Fig-1A) with varying size the largest one was measuring 9cmx7cmx7cm. The perforation was at mesenteric border about 32 cm distal to

FIGURE-1A: showing multiple jejunal diverticula at mesenteric border. The largest one measuring 9cmx7cmx7cm (Big white arrow)

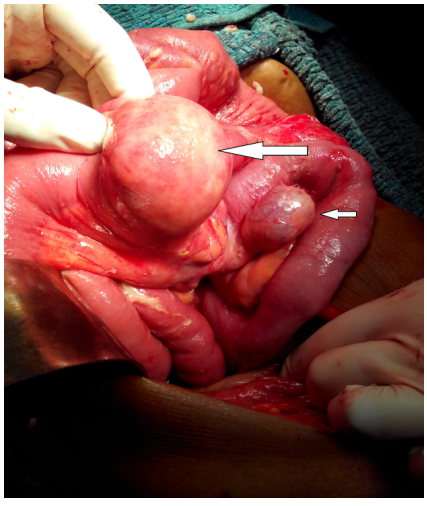
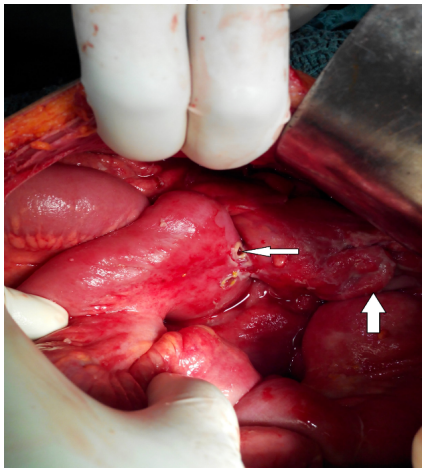


FIGURE-1B: showing perforation at mesenteric border at the lower part of jejunal diverticulum (Thin white arrow pointing towards the rent in the jejunal diverticulum, broad white arrow pointing towards diverticulum)



Ligament of Treitz (Fig-1B) .We resected the involved segment and did jejuno- Jejunal anastomosis. Post operative period was uneventful and patient discharged on 9th post operative day. In a follow-up period of 8 months not only she gained weight of 6.5 kg but also her appetite got improved.

Case 2: A male of age 63 years presented to the outpatient door with chief complain of pain abdomen in left lower abdomen with loss of appetite and anemia for last six months. He had history of Maelena three to five episodes in last six months. On investigating this patient had megaloblastic anemia, Hb was 6.8 gm % with positive faecal occult blood test. His ultrasonography revealed nothing relevant. His upper gastro intestinal endoscopy and colonoscopy was almost normal. CECT abdomen revealed segmental dilatation of proximal small intestine otherwise normal study. Patient managed conservatively with anti spasmodic and haematinics. After three months of treatment his Hb did not improve. One day the same patient presented in the emergency with acute abdominal pain, vomiting and distension of abdomen. X-ray abdomen showed multiple air fluid level.[FIG-2] Ultrasound of abdomen revealed features of intestinal obstruction with to and fro peristalsis in proximal gut. Patient was worked up for emergency laparotomy. On exploration we found multiple diverticula in the jejunum at the mesenteric border. There was impacted material in the lumen of one of the diverticula. This impacted material was difficult to milk it out. We did resection and jejuno-ileal anastomosis. Post operative period was uneventful and the patient discharged with advice. In a follow up period of 7 months, he remained symptom free.

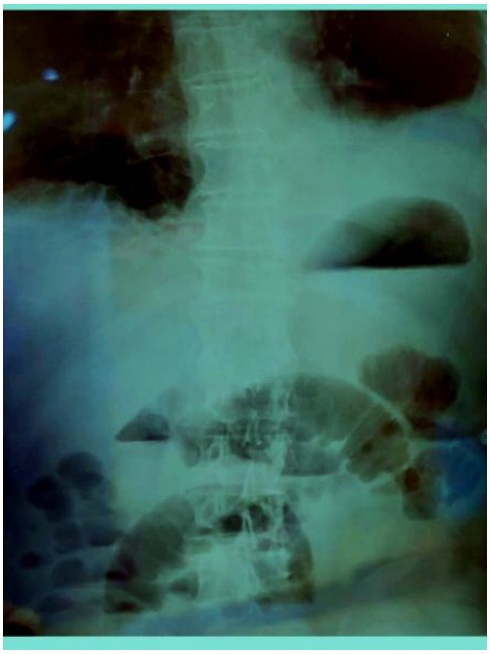


FIGURE-2: Showing Multiple Air-fluid Level In Central Area Of Abdomen.

Case 3: A male patient of age 73 years presented to the emergency with chief complain of pain abdomen eight days, distension of abdomen for 4 days and bilious vomiting for 2 days. He had history of similar type of attack two years ago, where he was managed conservatively. Patient had history of treatment for abdominal Koch's one year ago. At the time of admission patient was hypotensive, tachypnoeic and his abdomen was distended. Bowel sound was exaggerated. His x-ray abdomen showed multiple air-fluid level. Blood examination revealed leukocytosis with count 16600/cumm, his random blood sugar was 144mg/dl. His urea and creatinine was raised and hence computerized tomography could not be done. Patient was planned for emergency exploratory laparotomy. On opening the abdomen we found dense adhesion between the small bowel involving jejunum and ileum. We found multiple jejunal diverticula of varying size in the jejunum at mesenteric border. The largest one was measuring 4.5cmx 3cmx 2.5cm. (FIG-3A, 3B)We resected the involved segment of jejunum and did jejuno ileal anastomosis. The post operative period was uneventful and the patient discharged on eleventh post operative day. This patient remained asymptomatic in a follow up period of thirteen months.

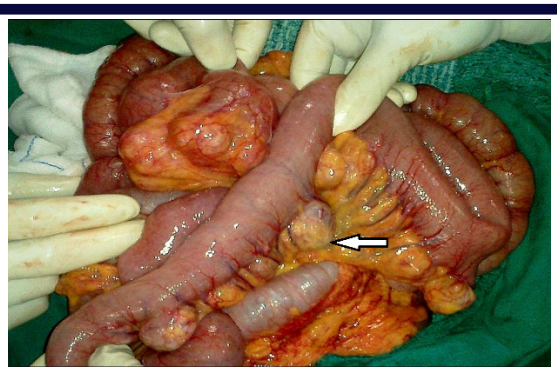


FIGURE-3A: Showing jejunal diverticula at the mesenteric border (white arrow)

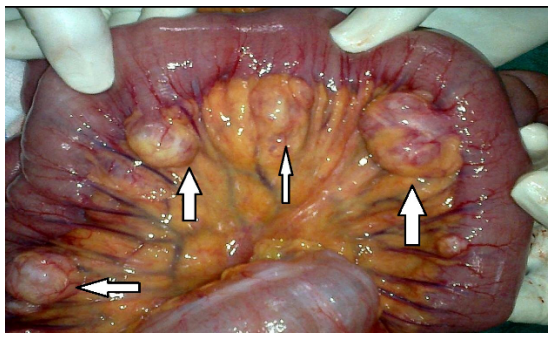


FIGURE-3B: Multiple jejunal diverticula at the mesenteric border. (White arrows pointing towards the diverticula)

DISCUSSION:

ileojejunal diverticulosis is a rare entity which is incidentally discovered on exploratory laparotomy or radiological contrast study of gastrointestinal tract. Sommering first described it in 1794 and later on Astley Cooper added more in 1809. Gordinier and Shil performed the first operation for diverticula in 1906 [5, 6]. Most of the diverticula are false. False diverticula are actually an out pouching of mucosa and submucosa from the weakest part in the intestinal wall. This weakest part is seen where the visceral vessel enters the intestinal wall along the mesenteric borders. The size of the diverticula is proportional to the caliber of intestinal vessel piercing the wall. The size of diverticula varies from few millimeters to several centimeters. The etiopathogenesis is not clearly understood. Some workers emphasized on the abnormalities of the smooth muscles or of the myentericplexus in order to explain intestinal dyskinesia. Krishnamurthy et al. researched on myenteric plexus abnormality in pathogenesis of diverticula. [7] Manometric studies were carried out by various workers but it was precisely performed by Kongaraet al., who described the functional abnormalities in patients with small bowel diverticula. [8] All these studies supported the hypothesis that due to irregular and uncoordinated peristaltic movement of intestine the intraluminal pressure increases and hence mucosa or submucosa protrudes out through weakest part of intestine. A connection between intestinal diverticulosis and rare neuromuscular disorders such as Cronkhite-Canada syndrome [9], Fabrys disease [10] and mitochondrial neurogastrointestinal encephalomyopathy [11] has been described. Small intestinal diverticula especially duodenal diverticula occur twice as often in women as in men and are rare in patients younger than age 40 years. The age incidence of ileojejunal diverticula is usually in the sixth decade with predominance to male than female [12]. Jejunal diverticulosis presents variably and it is an unnecessary cause of morbidity and mortality. Their presentation is variable from asymptomatic to chronic abdominal symptoms and the complications described in our case series. Acute complications such as intestinal obstruction, hemorrhage, or perforation can occur but are rare. Chronic symptomatology includes vague chronic abdominal pain, malabsorption, functional pseudo-obstruction, and chronic low-grade gastrointestinal hemorrhage. Their relative clinical rarity and varied presentation may make diagnosis both delayed and difficult. This is exemplified in our third patient whose symptoms were initially attributable to his previous diagnosis of abdominal tuberculosis.

Acute perforation of diverticula is a rare. It may present as acute

perforation with generalised peritonitis and sometime with localised peritonitis wit abscess formation. [13-15] our first case presented with perforation with generalized peritonitis. Perforation is rare, which may be related to the low intraluminal pressure. The common etiopathogenesis of diverticula perforation is attributed to luminal stasis and necrosis in 82% of cases, followed by blunt trauma in 12% of cases and foreign body impaction in 6% of cases [16]. Acute intestinal obstruction is another complication of jejunal diverticula. Our second and third cases presented as acute intestinal obstruction. The common cause of obstruction is external compression by nearby large diverticula or from intussusceptions or by adhesion formation secondary to diverticulitis. [13-23] or sometimes intestinal dyskinesia may also leads to obstruction. [24] Sometimes enterolith may form inside the diverticulum and consist of choleic acid, either de novo or around a bezoar. Stasis of flow and inflammation inside the diverticula causes the local environment acidic. This acidic environment breaks bile salts to choleic acid. This choleic acid gets deposited on a bezoar to form an enterolith which causes obstruction. [25] Deconjugation of bowel salts and uptake of vitamin B_{12} by the bacterial flora, results in steatorrhea and megaloblastic anemia. In all three cases we could not able to diagnose the jejunal diverticulosis before the surgery. We had to perform exploratory laparotomy to diagnose the case and to do definite management. In all three cases we did resection and anastomosis, following which all patients remained asymptomatic in the follow up period. Although pan endoscopy is investigation of choice for various gastrointestinal disorders but disease of jejunum and ileum is not amenable to endoscopic examination. In the present era where we have advanced radio diagnostic technology some older investigations i.e barium meal too has some role in diagnosis of such condition. This benign condition should be never overlooked as just an incidental finding but should be kept in differential diagnosis of acute as well as chronic abdominal conditions.

REFERENCES:

1. Wilcox RD, Shatney CH. Surgical implications of jejunal diverticula. South Med J. 1988;81:1386–1391.
2. Fisher JK, Fortin D. Partial small bowel obstruction secondary to ileal diverticulitis. Radiology. 1977;122:321–322.
3. Ross CB, Richards WO, Sharp KW, Bertram PD, Schaper PW. Diverticular disease of the jejunum and its complications. Am Surg. 1990;56:319–324.
4. de Bree E, Grammatikakis J, Christodoulakis M, Tsiftsis D. The clinical significance of acquired jejunoileal diverticula. Am J Gastroenterol. 1998;93:2523–2528.
5. Longo WE, Vernava AM:Clinical implications of jejunoileal diverticular disease.Dis Colon Rectum 1992,35:381-388.
6. Williams R, Davidson DD, Serota AL, Wilson SE:Surgical problems of diverticula of the small bowel.Surg Gynecol Obstet 1981,152:621-6.
7. Krishnamurthy S, Kelly MM, Rohrmann CA, Schuffler MD: Jejunal diverticulosis. A heterogeneous disorder caused by a variety of abnormalities of smooth muscle or myenteric plexus. Gastrenterol 1983,85:538-547.
8. Kongara KR, Soffer EE: Intestinal motility in small bowel diverticulosis: a case report and review of the literature. J Clin Gastroenterol 2000,30:84-6.
9. Cunliffe WJ, Anderson J: Case of Cronkhite-Canada syndrome with associated jejunal diverticulosis.Br Med J 1967,4:601-2.
10. Friedman LS, Kirkham SE, Thistlethwaite JR, Platika D, Kolodny EH, Schuffler MD: Jejunal diverticulosis with perforation as a complication of Fabrys disease.Gastroenterology1984,86:558-63.
11. Aksoy F, Demirel G, Bilgiç T, Güngör IG, Ozçelic A: A previously diagnosed mitochondrial neurogastrointestinal encephalomyopathy patient presenting with perforated ileal diverticulitis.Turk J Gastroenterol 2005,16:228-31.
12. Akhrass R, Yaffe MB, Fischer C, Ponsky J, Shuck JM. Small-bowel diverticulosis: perceptions and reality. J Am Coll Surg. 1997;184:383–388.
13. Longo WE, Vernava AM 3rd. Clinical implications of jejunoileal diverticular disease. Dis Colon Rectum. 1992;35:381–388.
14. Gotian A, Katz S. Jejunal diverticulitis with localized perforation and intramesenteric abscess. Am J Gastroenterol. 1998;93:1173–1175.
15. Alvarez OA, Mejia A, Ostrower VS, Lee M. Jejunal diverticulitis manifesting with abdominal wall abscess. Am J Gastroenterol. 1995;90:2060–2062.
16. Herrington JL Jr. Perforation of acuired diverticula of the jejunum and ileum. Analysis of reported cases. Surgery. 1962;51:426–433.
17. Hibbeln JF, Gorodetsky AA, Wilbur AC. Perforated jejunal diverticulum: CT diagnosis. Abdom Imaging. 1995;20:29–30.
18. Goldberg HI, Gore RM, Margulis AR, Moss AA, Baker EL. Computed tomography in the evaluation of Crohn disease. AJR Am J Roentgenol. 1983;140:277–282.
19. Kerber GW, Greenberg M, Rubin JM. Computed tomography evaluation of local and extraintestinal complications of Crohn's disease. Gastrointest Radiol. 1984;9:143–148.
20. Lieberman JM, Haaga JR. Computed tomography of diverticulitis. J Comput Assist Tomogr. 1983;7:431–433.
21. Cross MJ, Snyder SK. Laparoscopic-directed small bowel resection for jejunal diverticulitis with perforation. J Laparoendosc Surg. 1993;3:47–49.
22. Novak JS, Tobias J, Barkin JS. Nonsurgical management of acute jejunal diverticulitis: a review. Am J Gastroenterol. 1997;92:1929–1931.
23. Steenvoorde P, Schaardenburgh P, Viersma JH. Enterolith ileus as a complication of jejunal diverticulosis: two case reports and a review of the literature. Dig Surg. 2003;20:57–60.
24. Disorder caused by a variety of abnormalities of smooth muscle or myenteric plexus. Gastroenterology. 1983;85:538–547.
25. Hayee B, Khan HN, Al-Mishlab T, McPartlin JF. A case of enterolith small bowel obstruction and jejunal diverticulosis. World J Gastroenterol. 2003;9:883–884.