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CONGENITAL PERITONEAL ENCAPSULATION PRESENTED WITH SMALL BOWEL OBSTRUCTION- A RARE CASE REPORT

Medical Education

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ABSTRACT

Peritoneal encapsulation is an exceedingly rare cause of small bowel obstruction characterised by congenital development of an accessory peritoneal layer partially or entirely encapsulating the small bowel. The majority of the cases remain asymptomatic and are diagnosed accidentally during autopsy or surgery [1] and a very few symptomatic presents as an acute or sub acute small bowel obstruction [2,3,4]. It is one of the rare case of peritoneal encapsulation presented as an acute small bowel obstruction.

KEYWORDS

peritoneal encapsulation, small bowel obstruction

INTRODUCTION

Congenital peritoneal encapsulation (CPE) is a very rare congenital malformation of gastrointestinal tract. This condition was first described by Cleland in 1868 as a 'secondary sac bounded by omentum and mesocolon and communicating with general sac by means of small aperture'[5]. Since this time it has been described in 45 cases worldwide[6].This develops due to an abnormal return of bowel loops back into the abdominal cavity after physiological herniation around 12th week of gestation[7]. During normal fetal development, the yolk's sac coat stays in the umbilical pedicle, while in PE, the coat migrates to the intestine, causing the formation of an accessory peritoneal membrane. Most patients are asymptomatic and found incidentally[8].Few present with recurrent episodes of colicky abdominal pain or with features of acute intestinal obstruction. Two clinical signs have been described in PE presenting with acute intestinal obstruction. The first sign is asymmetric distension of the abdomen. The second is the consistency of the abdominal wall, the flat area being firm due to the fibrous capsule and the distended area soft due to thin walled distended small bowel.

This case report entails a very rare case of intestinal obstruction due to peritoneal encapsulation.

CASE REPORT

A 32 year male presented with generalised abdominal pain since 6 days, abdominal distention 2 days, vomiting and obstipation 1 day with no history of fever, weight loss, comorbidities or operative intervention. On per abdominal examination he has generalised tenderness and guarding over abdomen. Laboratory investigation showed normal parameters. Standing abdominal x-ray was suggesting of multiple air fluid levels. Ultrasonography was suggestive of multiple content loaded dilated bowel loops with reduced peristalsis, max diameter of 3 cm possibility of sub-acute to acute intestinal obstruction likely. The CECT was suggestive of a sac like cluster of small bowel loops and its mesentery of approx. 220*127*80mm on left side with twisting of duodenum and small bowel loops with maximum dilatation of 32mm with collapsed colon with mild free fluid in the sac p/o left paraduodenal hernia with small bowel obstruction likely.

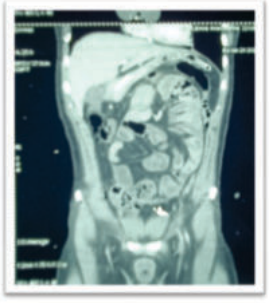

Fig 1: CECT Suggestive of left paraduodenal hernia

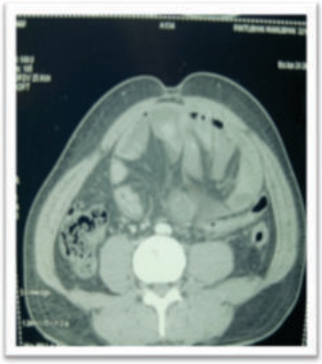

Fig: 1 CECT Suggestive Of Left Paraduodenal Hernia

Patient was taken for diagnostic laparoscopy. A 10 mm infraumbilical port was inserted and directly entered into large thick white structure. The surgery was converted to laparotomy. A thick white peritoneal covering was found encapsulating the small bowel loops on left side. The sac was adherent to anterior abdominal wall with flimsy adhesion, adhesiolysis was done. The sac was opened. Meticulous adhesiolysis of bowel loops with sac was done and the sac was excised and bowel freed. No herniation was found in left paraduodenal space. In histopathology examination resected peritoneal sac was showing fibrous stromal tissue with focal necrosis ,marked congestion and focal chronic non specific inflammation .Patient was discharged on POD 7th. Patient has been under weekly follow up for 1 month then and had remained asymptomatic.

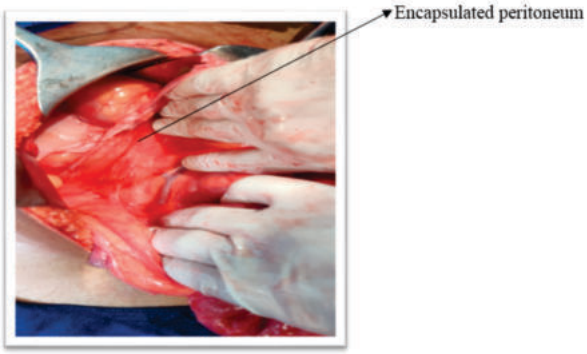

Fig.2: Small Bowel Loops In Encapsulated Peritoneum

DISCUSSION

The term peritoneal encapsulation (PE) is often used interchangeably with abdominal cocoon syndrome and sclerosing encapsulating peritonitis. The entity which is congenital is congenital peritoneum

encapsulation. In acquired encapsulating bowel diseases there is fibrotic peritoneal encapsulation , the one that is idiopathic is diagnosed as Abdominal cocoon and other one is associated with secondary to known causes such as peritoneal dialysis, abdominal surgery, peritoneal shunt,SLE,malignancy. There are many features at laparotomy which distinguish peritoneal encapsulation from abdominal cocoon syndrome and secondary sclerosing encapsulating peritonitis include the ability to separate the membranous layer easily from the underlying loops of bowel[6]. The extent of the membrane is also typical, covering all or part of the small bowel loops from the ligament of Treitz to the ileo-cecal region and lying between the meso-colon and the parietal peritoneum inferiorly. The bowel loops within the capsule are also noted to lie freely without adherence to each other. The patient's history of present illness is typical of this condition.

Treatment of CPE can be conservative, medical or surgical. Conservative can be done in cases which are asymptomatic and diagnosed incidentally on routine imaging. Medical management generally involves the resuscitation, stabilisation and treatment of the unstable patient with CPE. This is likely due to acute small bowel obstruction and the potential complications associated with this, including perforation, ischemia, necrosis and haemorrhage. A majority of patients that were hospitalised with CPE receive nasogastric decompression, intravenous fluid therapy, and intravenous antibiotic and intravenous proton pump inhibitors.

In Surgical management most patients will undergo diagnostic laparotomy to confirm the diagnosis.Surgical management consists in peritonectomy and adhesiolysis. Very few cases found in the literature, in which laparoscopic surgery was carried on to successfully treating the CPE [8].Prognosis following prompt surgical treatment is excellent, with a majority of patient. CPE has a high survival rate after operation and a very low recurrence rate. [9]

CONCLUSION

Peritoneal encapsulation is a rare condition. The most cases asymptomatic. Clinical features present in approximately 10% of cases and undetectable on plain imaging [6]. Ultimately, most patients undergo diagnostic laparotomy and excision of the accessory peritoneal layer, which results in an excellent prognosis. It is yet unclear what causes CPE, and further work is required to elucidate this as it may provide insights in better identifying patients at risk, and treating them accordingly

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