



Perforated Mesenteric Cyst with Sepsis and Neurological Complication in a 9 Month Old Child

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Abstract

Mesenteric cyst is presented as lump abdomen or detected incidentally in ultrasonography for other reason or when it becomes symptomatic due to complications. Spontaneous infection or rupture of the mesenteric cyst and disseminated infections are very rare complications in children. Expedient diagnosis and surgical excision of the cyst are imperative for fruitful outcome. We report a case of a perforated mesenteric cyst with sepsis and intracerebral haemorrhage in a 9 month child who was managed successfully in our institute.

Keywords

Mesenteric Cyst; Infection; Ruptured; Marsupialisation; Sepsis; Intracerebral Hemorrhage

Introduction

Mesenteric cyst (MC) is rare benign tumor, occurring more in pediatric population (1 per 20,000) than adult (1 per 140,000) and more in male than female [1]. They become symptomatic only in 25% of cases mainly due to mass effects or complications (infection/ perforation/ rupture). Successful management of complicated cyst depends largely on making a prompt diagnosis and treatment. Complete cyst excision either by open or laparoscopic techniques or partial excision of the cyst with marsupialisation of residual cyst cavity is the

recommended treatment [2]. We present a case of 9-month old child with an infected and ruptured MC who underwent partial excision of the cyst and marsupialisation of the remaining part along with review of recent literature.

Case Report

A 9 month old male baby presented with fever and abdominal distention. He had a history of bowel obstruction for 3 days and passing scanty urine for 1 day. On clinical examination we found pulse-134/min, respiratory rate -46/min, blood pressure -74/54 mm

Case Report

of Hg (<50th percentile), temp-38.9° Celsius with cold clammy extremities. His abdomen was hugely distended, tense and tender in addition to rigidity and rebound tenderness. Intestinal peristaltic sound was absent and rectum was empty. Straight X ray abdomen showed opaque right half of the abdomen and intestine was concentrating on left side. A provisional diagnosis of peritonitis with shock was made.

The baby was resuscitated in pediatric intensive care unit (PICU) in the form of nasogastric tube suction and infusion of normal saline bolus (20ml/ kg each 2 boluses) in addition to intravenous antibiotics and infusion of Dopamine (10mcg/kg/min). Simultaneously Hb%, TC, DC, Platelet, serum electrolytes, ABG and blood culture were performed. Ultrasonography (USG) of whole abdomen showed huge multiseptate cystic lesion which was extending from epigastrium to pelvis and compressing the pancreas and displacing gut loops to other site. Contrast enhance computed tomography (CECT) showed large peripherally enhancing abdomino pelvic cystic lesion with internal septations (**Fig-1**).



Fig-1: Intraoperative picture and contrast enhanced computed tomography abdomen in a 9 month old male child showing perforated mesenteric cyst localized at pelvis and abdomen extending up to undersurface of liver.

We resuscitated the baby and prepared him for exploratory laparotomy.

On exploration we found an infected and perforated MC arising from retroperitoneum in-between stomach and transverse colon and part of the cyst traversing beyond transverse mesocolon. We could not excise the cyst completely even after resection of a part of the transverse colon. Marsupialisation was done for the remaining portion

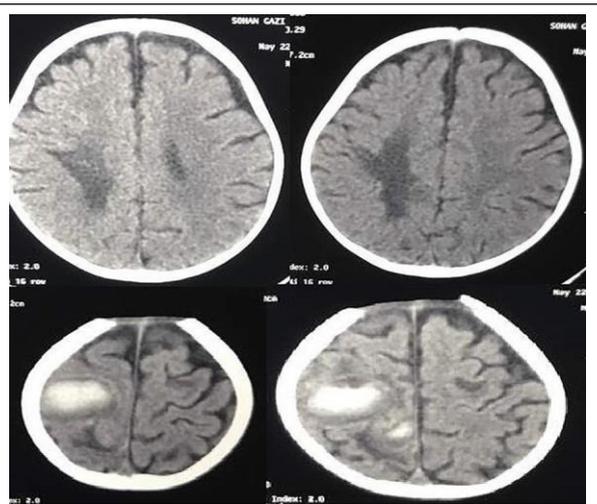


Fig-2: Computed tomography of brain in a postoperative case of perforated mesenteric cyst suggested acute intracerebral hemorrhage in the right parietal region without midline shifting.

between aorta and IVC. After peritoneal lavage with warm normal saline, a double barrel right transverse colostomy was fashioned. The baby was shifted to PICU for postoperative care. On 2nd postoperative day (POD), the child developed focal convulsion involving left side of face, left hand and left leg. CSF study was normal. Non-contrast CT of brain suggested acute intracerebral bleed in right parietal region without midline shifting (**Fig-2**). Anticonvulsant medications were added. Though, post-operative period was stormy but the patient was ultimately survived and discharged on 10th POD. The right transverse colostomy was reversed after 2 month of primary operation. Now the patient is doing well in 6 month follow up. Histopathological report of excised specimen showed fibrous tissue infiltrated with lymphocytes, plasma cells, neutrophils and eosinophils. Areas of necrosis were evident at places.

Case Report

Sample from the peritoneum showed fibrous tissue, adipocytes and lymphoid follicle formation. The features were consistent with the diagnosis of ruptured infected mesenteric cyst.

Discussion

The first case of MC was reported in the literature by Benevieni in 1507. It can occur in the mesentery of gastrointestinal tract from duodenum to rectum with or without retroperitoneal extension. MC has a lining endothelium or mesothelium which sometimes destroyed by the pressure effect of cyst fluid and or infection [3]. The precise etiopathogenesis of MC is still unclear. Gross proposed that insufficient communication between lymphatics channels leads to benign proliferation of ectopic lymphatics [4].

Most of the MC (75%) are asymptomatic and incidentally detected on imaging for other reason or during surgery. Symptomatic cases have nonspecific presentations like; abdominal pain, distention, nausea vomiting, diarrhea, constipation, loss of weight and bowel/bladder obstruction [5]. Moreover, few cases (10%) may come to emergency with an acute life-threatening conditions because of acute intestinal obstruction, volvulus, intracystic hemorrhage, infection and rupture [6, 7, 8]. Our patient presented with features of peritonitis and shock. Spontaneous perforation is very rare but reported in literature [9]. Rupture of a giant cyst due to trauma is also reported [10]. A small cyst may even complicated by torsion and produce acute abdominal condition [11]. Perioperative venous thrombosis and pulmonary thromboembolism may be a sequelae of infected and or ruptured cyst [12]. In our case, the patient developed neurological symptoms due to intracerebral hemorrhage in the right parietal lobe. Fatal intracerebral hemorrhage is potentially caused by sepsis-associated encephalopathy or disseminated intravascular coagulation due to sepsis [13, 14].

Early diagnosis can be made by USG screening. MC appears in USG as a smooth, thin walled cyst, internal septations, and fluid content with sedimentations (if infected) [15]. CECT is required for detailed delineation and differentiation from pseudocyst or duplication cyst [16]. Complete excision of the cyst

with or without bowel resection is the treatment of choice for MC. Sometimes, even after bowel resection, complete excision of the cyst may not be possible in approximately 10% of cases because of involvement of major vascular/vital structures [17]. In such situation, marsupialisation of the non-resectable portion of the cyst wall is a suitable option.

Conclusion

MC is a rare, benign intra-abdominal lesion but, should be considered in the differential diagnosis of any intra-abdominal lesion even it has no specific symptoms. The knowledge of this rare entity, early detection and prompt surgical management helps to avoid potentially life-threatening condition. Moreover, early diagnosis with modern investigation and laparoscopic excision offers best outcome of these entity.

Conflicts of Interest

None

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Case Report

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