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DUPLICATION CAECAL CYST: A RARE PAEDIATRIC CASE REPORT

Pathology

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ABSTRACT

Introduction: Duplication cysts of the alimentary tract are very rare congenital anomalies but interesting clinical entities. These are still seen in ileum, but very rare in caecum as caecal duplication cyst. Duplication cyst are difficult to diagnose preoperatively because of clinical presentation of acute abdomen mimicking commonly occurring conditions like intussusception and appendicitis among paediatric age group. It is usually an intra-operative finding confirmed on histopathological examination. **Case Report:** This study presents a case of five years old child presented with pain abdomen, vomiting and fever for fifteen days. On ultrasonography impression favouring hydatid cyst / enteric cyst was made. Patient underwent laparotomy and histopathological examination confirmed duplication caecal cyst. **Conclusion:** Duplication cysts are to be considered in the differential diagnosis in neonates and children who present with acute pain and palpable abdominal mass and Histopathological examination is the best confirmative method of diagnosis. Resection is the treatment of choice with an excellent outcome

KEYWORDS

Duplication cyst, caecal, intussusception, Histopathological examination

INTRODUCTION

In the ancient times and also most part of human history, congenital anomalies were perceived as omens, portents or punishments of supernatural origin. By the dawn of the nineteenth century, a foundation had been established for the study of abnormal development(1) and as remarked by Gray "gastrointestinal tract is a fertile field for congenital anomalies of great interest for pathologist and surgeons".(2)Among the congenital anomalies of GIT the most common site is ileum. Caecal and rectal duplications are extremely rare.(3) Caecal duplication cyst is an uncommon congenital anomaly which usually gives signs in the first year of life. Its symptoms vary according to the size, type and location of the cyst. These can be in cystic and tubular form.(4)The most common symptoms are nausea, vomiting, abdominal pain, distension and palpable mass. Additionally, most duplication cyst that cause perforation, intussusception, intestinal obstruction and volvulus are colonic (5) Pathological evaluation of the enteric cysts is the mainstay of diagnosis. On microscopic examination presence of normal colonic mucosa in the intervening wall between caecum and caecal cyst confirms diagnosis of caecal duplication cyst. Good sectioning of the cyst wall with the attached bowel helps in ruling out the malignant changes.

Case Report

A 5 years old baby boy was admitted due to severe vomiting, abdominal distension and fever for last fifteenth days. His physical examination revealed tenderness in the abdomen and decrease in bowel sounds. Haematological investigation showed neutrophilic leukocytosis. On the abdominal x-ray in standing position, air-fluid levels were present in the small bowel loops in the middle part of the abdomen. Ultrasound showed dense cystic lesion in ileocaecal region giving impression of hydatid cyst. CT scan showed a large intrabdominal thick walled enteric cyst. Surgery was performed and intra-operative findings were suggestive of caecal duplication. Gross examination revealed a formalin fixed tubular structure measuring 9.6x6.8cm, the lumen of which was communicating with caecum. The thickness of cyst was 0.6 cm.[Figure 1].

Figure 1- Gross picture of duplication cyst.

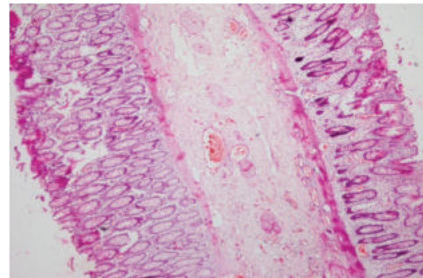

Figure 2 Intervening wall between caecum and caecal cyst showing normal colonic mucosa on both sides.(H&E, X100)

On Microscopic examination revealed an intervening wall between caecum and caecal cyst showing normal colonic mucosa on both sides. Confirmation of diagnosis was done on histopathological examination revealing grossly and morphologically features those of caecal duplication cyst.

DISCUSSION

Duplication of alimentary tract reported first by Calder in 1733 were given various names like giant diverticula, enterogenous cysts, ideal or jejunal duplex, giant thoracic cyst, duplication, reduplication and unusual meckels diverticula. In 1973, William E-Ladd used the term 'duplication of alimentary canal.' A meta-analysis was carried out by Heiss encompassing 580 patients, demonstrated that 20% of such lesions occur in the chest whereas 80% occur in the abdomen.(3)

Although the aetiology of duplication cyst is not fully known, many theories have been proposed. The most accepted theories are persistence of foetal intestinal diverticulum, defect in the recanalization of the primitive intestine, partial mating and notochord separation.(6)

Pulgandla et al. studied 73 patient of duplication cyst and out of which only one had caecal duplication cyst and prevalence of rest of duplication cysts were 31.5% ileum, 30.2% ileocecal valve, 9.6% duodenum, 8.2% stomach and 8.2% jejunum.(7)

Duplication cysts of GIT can be asymptomatic depending on the location, type and size, as well as cause an acute abdomen. Independent of their localization, duplication have three common characteristics, first they are hollow structure, secondly contain GIT mucosa and finally there walls are common with normal adjacent intestinal wall.(8) Symptomatically caecal duplication cysts present as vomiting, abdominal pain and palpable abdominal mass. They can also

lead to acute abdominal manifestations such as intussusception, perforation, obstruction and volvulus. Hence, they mimic these acute abdominal manifestations. Duplication cysts leading to acute abdomen are mostly colonic.(9) In our case, severe vomiting , abdominal distension and fever was observed as a result of advanced obstruction due to caecal duplication cyst.

The most common imaging modalities to diagnose duplication cysts are ultrasonography whereas CT and magnetic resonance imaging (MRI) are less often used. But nowadays, diagnostic laparoscopy is widely used. Ultrasonography shows characteristic echogenic inner mucosal layer and hyperechoic outer muscular layer (called "pseudo kidney" appearance on longitudinal view or "doughnut" appearance on transverse view).(2)CT scan revealed large intrabdominal thick walled cyst giving impression of Hydatid cyst/Enteric cyst.

Histopathological examination of the cysts provides the definitive diagnosis and is mainly stay for confirmation. Gross examination shows presence of mucosa on both the sides of intervening wall of cyst and microscopy confirming an intervening wall between caecum and caecal cyst containing normal colonic mucosa on both sides. Fine sectioning of the cyst wall with the attached bowel helps in required to rule out the malignant changes, if present.

Various surgical procedures have been employed to deal with such lesions. Most commonly used is the partial colectomy with end to end anastomosis. Other techniques such as enucleation, marsupialisation, or evacuation of cyst can also be used.(10)

CONCLUSION

Duplication cyst of caecum can present in diverse ways and can be mimic many more common acute abdomen conditions of neonates and paediatric age group. Hence it should be considered one of the of the differential diagnosis in neonates and children who present with acute pain and palpable abdominal ma Whereas the ultrasound is the best preoperative diagnostic tool, a high index of suspicion and thorough histopathological examination is the best confirmative method of diagnosis.

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