Intestinal Duplication Cyst

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Introduction

Alimentary tract duplications, a group of rare malformations, vary greatly in appearance, size, location and symptoms. Duplications of ileum appear as noncommunicating spherical cysts. They are mistaken for mesenteric or omental cysts because of their location but are clarified by identification of mucosa rather than endothelial lining [1].

Case Report

A 53 days old male infant presented with vomiting and abdominal distension of 5 days duration. The vomiting was bilious and associated with progressive abdominal distension. The child had not passed stool. Antenatal and perinatal period was uneventful and infant was exclusively breast fed. Clinically the infant had moderate dehydration and visible distended bowel loops. On palpation a firm cystic mass was felt in right lumbar region, bowel sounds were exaggerated, external genitalia and hernial sites were normal.

Abdominal radiograph revealed soft tissue density lesion in right lumbar region deviating bowel loops to the left side (Fig 1). Ultrasonography revealed a cystic mass in right lumbar region. Abdominal CT revealed a well defined round uniloculated cystic lesion in the Right lumbar region 67x52x60mm in size suggestive of intestinal duplication cyst with a grossly distended stomach (Fig 2). There was no malformation of the vertebral column or genitourinary tract.

The neonate was taken up for exploratory laparotomy through supraumbilical transverse incision. The laparotomy revealed 7"x6"x5" size intestinal duplication cyst about 18" from the duodenojejunal flexure. The proximal bowel was grossly distended and distal loop collapsed. Resection and anastomosis of jejunum containing the duplication cyst was done. Postoperatively infant was managed with antibiotics, intravenous fluids and analgesics. On the 6th postoperative day infant passed flatus, by 8th postoperative day was breast fed and was discharged on 14th postoperative day. Gross examination of excised specimen revealed a (Fig 3), small nodular cystic mass 7cm diameter, attached to intestine with straw coloured mucoid content. Section from cyst wall shows a flattened epithelium and at places low cuboidal epithelial

wall containing fibrous tissue and ecstatic congested blood vessels.

Discussion

Duplication of the intestinal tract are rare anomalies consisting of well formed tubular or spherical structures firmly attached to the intestine on the mesenteric side of the lumen. Lined with intestinal mucosa they share a common wall and mesenteric blood supply with the adjacent intestine but usually not communicate with the gut lumen. Potter reported 2 cases in more than 9000 foetal and neonatal autopsies [1].

Fig. 1 : Plain radiograph abdomen : showing soft tissue density lesion right lumbar region deviating bowel loops to the left side

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Fig. 2 : Contrast enhanced CT scan abdomen : showing a round cystic lesion (average attenuation 10 HU) in right lumbar region with grossly distended stomach

The duplication can be classified into localized duplication, duplication associated with spinal cord and vertebral malformation and duplication of the colon.

Localized duplications are common in the ileum and jejunum [2]. Theories explain duplication as a defect in recanalisation of the intestinal lumen after the solid stage of embryological development. The split notochord theory proposes neural tube traction mechanism resulting in intestinal duplication along with vertebral and spinal cord anomalies (hemivertebrae, anterior spina bifida, band connection between lesion and cervical or thoracic spine) [1,2].

The symptoms depend on the size, location and mucosal lining of the cyst. Patient may present with abdominal pain, vomiting, palpable mass or acute gastrointestinal haemorrhage. Intestinal duplication in thorax may present with respiratory distress. Due to nonspecificity, a preoperative diagnosis based on radiography is unlikely. Upper GI study and barium enema demonstrate filling defect or rarely a

Fig. 3 : Pathological specimen : A specimen of intestine, mesentery with small nodular cystic mass of 7 cm diameter

communication between the cyst and normal bowel [3]. The ultrasound and CT Scan are useful in establishing diagnosis and may be used to evaluate synchronous lesion once a single duplication has been identified [1]. Duplication of cyst manifest as smooth, rounded, fluid filled cysts or tubular structure with thin slightly enhancing wall on CT Scan. MRI scan shows intracystic fluid with heterogenous signal density on T1 weighted image and homogenous high signal intensity on T2 weighted image [4].

Treatment of small cystic or short tubular duplication involves segmental resection along with adjacent intestine. A long tubular duplication cannot be excised as it will lead to short bowel syndrome. In these cases mucosal stripping through a series of multiple incisions is recommended [5].

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