Case Report Duplication Of Gastrointestinal Tract

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Abstract

A 6 Months old male child presented to the Orotta Pediatrics Hospital with recurrent chest infections and respiratory distress since birth. He was treated accordingly at different admissions but with marginal improvement. Investigations revealed the presence of a cystic mass in the right posterior mediastinum. The mass was resected through a thoraco-abdominal approach. Histopathology revealed it to be enteric foregut duplication.

INTRODUCTION

Duplications of the alimentary tract are rare congenital malformations that may be found anywhere along the entire gastrointestinal tract. They may vary in presentation, size, location, and symptoms. They are spherical (75%), or tubular (25%) structures (1). Their importance lies in the fact that they readily mimic other surgical disease processes & may result in significant morbidity if left untreated.

75% of duplications are abdominal, 20% thoracic, & 5% combined. The commonest mode of presentation in thoracic/ thoraco-abdominal duplications is respiratory distress because of airway compression due to an enlarging mass (2). A correct preoperative diagnosis is seldom possible as symptoms are so varied and the entity rare. A high index of suspicion is required for diagnosis (3).

We report a case of intra-thoracic foregut duplication & discuss the problems encountered in its diagnosis and management.

CASE REPORT

A 6 months old male infant presented with recurrent chest infections for 3 months and had frequent admissions for treatment. With a presumptive diagnosis of bronchopneumonia, with respiratory distress and failure to thrive, different antibiotics have been used to treat his chest infections. On examinations was a sick looking infant in moderate respiratory distress, respiratory rate 60/m, apical heart rate 120/m, weight 5.4kg, oxygen saturation 84%, remarkable chest retractions, and decreased air entry on the right Chest. Hemoglobin was 10 gm%. Biochemical tests were within normal limits. Chest X-ray showed multiple cystic cavitary lesions on the right lower chest with left mediastinal shift. Barium meal revealed a defect on the right hemi-diaphragm with gastric herniation & lung compression (figure1).

A provisional diagnosis of right diaphragmatic hernia with lung hypoplasia was made and patient was subjected for laparatomy. Exploration disclosed an intact diaphragm, and normal anatomical location of the stomach and liver with signs of jejunal duplication. A right thoracotomy then revealed a large spherical mass in the right chest cavity with collapsed lung. There was relative fixity of the mass to the esophagus and posterior mediastinum. Careful mobilization showed a tubular hollow viscus with a proximal attachment to the esophagus and distal communication with the duodenum (Fig 2).

An intra-operative diagnosis of gastrointestinal duplication was entertained and complete resection of the duplicated segment was effected from the chest. Histopathology proved the diagnosis of enteric duplication (Fig 3).

A tragic event occurred intra-operatively when the child suffered cardiac arrest and was successfully reversed by cardiopulmonary resuscitation. He had an eventful postoperative course with hypoxia and seizure disorder despite stable hemodynamic state. Brain damage persisted and all modalities of treatment were terminated upon confirmation of brain death.

DISCUSSION

The incidence of GID is not precisely known: 1 in 4500 autopsies had duplications in one study (4). 80% present in the first 2 years of life. The commonest site is the Ileum (50%), followed by esophagus (15%). Combined thoraco-abdominal occur in less than 2% of the cases. Heterotopic gastric mucosa exists in 30% of duplications resulting in bleeding, ulceration and perforations (5). The characteristic features described are attachment to the alimentary tract, well developed coat of smooth muscle, and inner mucosal lining. Several theories have been proposed for the development but the exact etiology has not yet been established. Among the theories proposed are the split notochord, embryonic diverticula, external compression, epithelial recanalization, and vascular accidents (6).

Many duplications are diagnosed incidentally, most patients present with a combination of pain and/or obstructive symptoms. Thoracic duplications present with respiratory distress which can be life-threatening. However in most cases definite diagnosis is not made before surgery (2).

Thoracic duplications are often apparent on routine chest radiographs. They have a characteristic enhancing ring that can be revealed by computerized tomography. Contrast studies are helpful in demonstrating mass effect and displacement of normal alignment. MRI and endoscopy can delineate precise localization and associated abnormalities (7).

In general, excision is the preferred treatment whenever possible, but segmental resection, mucosal

stripping, marsupulisation, and varied drainage procedures are acceptable alternatives (1).

SUMMARY

This child presented initially with features of bronchopneumonia, and respiratory distress. Failure to respond to medical therapy prompted further considerations and the diagnosis of diaphragmatic hernia was suggested based on contrast studies. The intra-operative finding however was quiet astonishing.

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This case highlights the mysterious presentation of gut duplication and the problems associated in diagnosis and management.

Figure 1

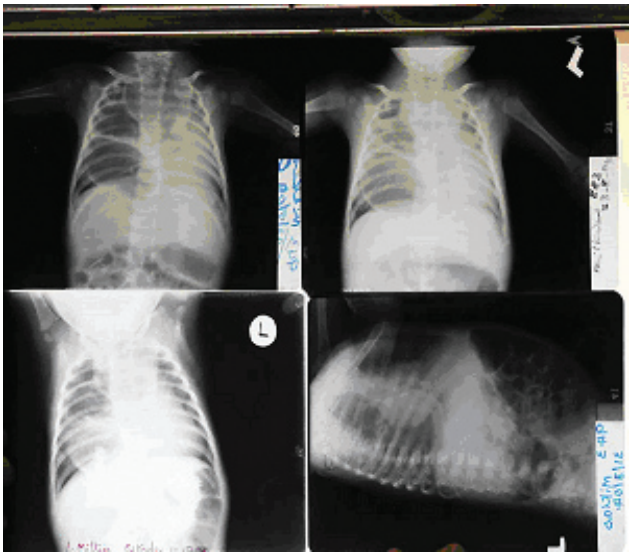


Figure 2

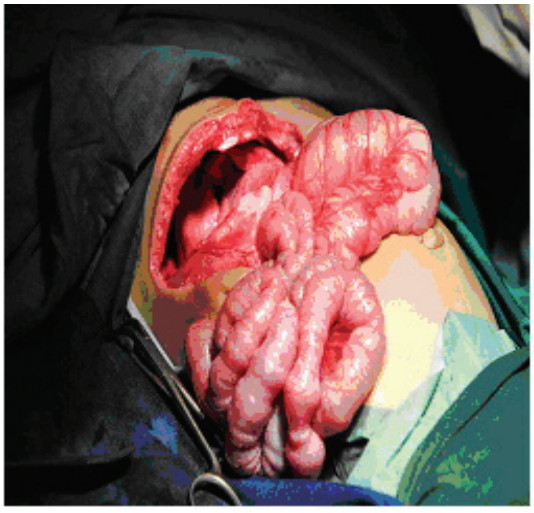


Figure 3

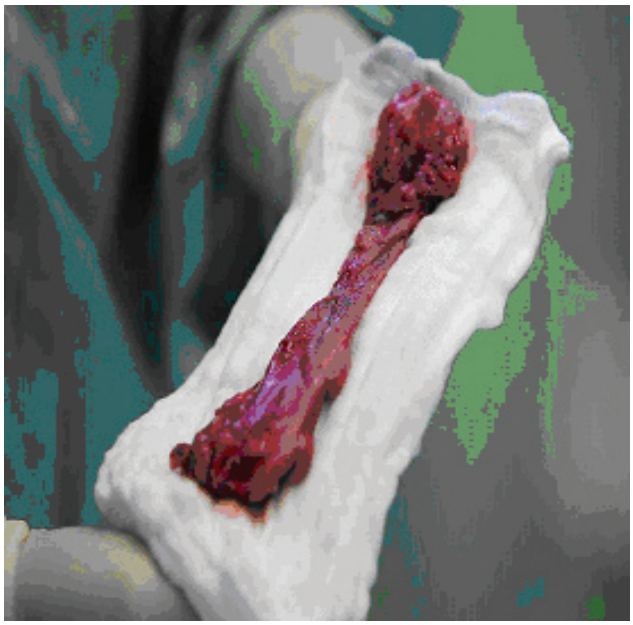
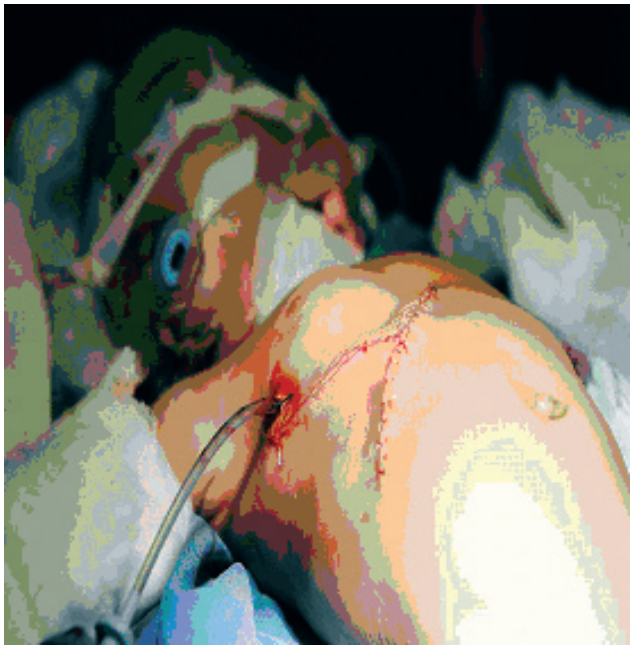


Figure 4



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