

APPLE PEEL JEJUNAL ATRESIA IN A NEONATE: A RARE CAUSE OF INTESTINAL OBSTRUCTION

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ABSTRACT

A preterm baby was born with antenatal diagnosis of upper gut obstruction. Postnatal abdominal x-ray showed triple gas shadows and ultrasound scan showed few dilated bowel loops. Laparotomy revealed apple peel deformity type of jejuno ileal atresia. Tapering duodeno-jejunoplasty with end to side anastomosis and transgastric feeding jejunostomy was carried out. Gradually feeds were introduced. Apple peel jejunal atresia classified as type iii-b jejunoileal atresia, is a rare malformation with a high incidence of mortality and morbidity. We are reporting a case of apple peel jejunal atresia in a preterm baby with survival.

Keywords: Jejunal atresia; Apple peel atresia; Christmas tree deformity; Preterm

1. INTRODUCTION

Intestinal atresia is the 3rd most common cause of neonatal intestinal obstruction. In the 3rd trimester of gestation, vascular accidents cause ischemia or necrosis of the bowel and its mesentery resulting in atresia. Apple peel variant of jejunal atresia is very uncommon with a reported high incidence of mortality, even though overall survival of intestinal atresia has improved to about 90%^{1,2}. We are reporting a case of apple peel jejunal atresia in a preterm boy with brief review of the literature.

2. CASE

A preterm baby boy of 34 weeks gestation was born vaginally. There was history of polyhydramnios and the antenatal ultrasonography finding was suggestive of upper gut obstruction. Baby weighed 1.9kg and was active and pink. Abdomen was soft without any distension. Abdominal x-ray few hours later showed three prominent gas shadows in upper abdomen with gasless distal abdomen (Fig.1). Blood investigations were normal. Post-natal ultrasonography of abdomen showed few dilated bowel loops and solid organs were normal. With the diagnosis of jejunal atresia, laparotomy was carried out under general anaesthesia. At laparotomy, baby was found to have jejunal atresia almost at the duodeno-jejunal flexure with apple peel deformity (type iii-b) (Fig.2). Tapering duodeno-jejunoplasty with end to side

anastomosis and transgastric feeding jejunostomy was carried out. Baby received cefotaxime, gentamicin and metronidazole. Baby developed hyperbilirubinemia post-operatively which was treated successfully with phototherapy. Feeding jejunostomy tube came out accidentally on 2nd post-operative day. The baby received packed cell and fresh frozen plasma transfusions post-operatively. Nasogastric feeding was initiated on the 5th post-operative day. Seven days later, switched over to direct breast feeding. Baby recovered well and the total duration of hospital stay was 20 days.

3. DISCUSSION

The type of jejunal atresia with agenesis of dorsal mesentery classified as type iii-b atresia consists of a duodenal or high jejunal atresia associated with absence of small bowel mesentery and pre-arterial arcades of the superior mesenteric artery. It has been variously described as the 'apple peel', 'Christmas tree' or 'maypole' deformity. The resulting appearance is of distal bowel coming straight of the caecum and twisted around a marginal artery³. Out of all causes of intestinal atresias, the most common cause which results the apple peel type of intestinal atresia is an in-utero vascular accident occurring probably after the 11th week of gestation.⁴ This anomaly has high incidence of prematurity (70%) and mortality (54%) besides high incidence of malrotation (54%) & multiple atresias (15%)¹.

Treatment of this malformation is plication or tapering enteroplasty with end to side anastomosis as was done in this case. Though initial enterostomy with delayed closure has been reported in few cases with good results, it has shown no added advantage over primary anastomosis^{5,6,7}. Rather it leads to increased incidence of complications & longer hospital stay and needed total parenteral nutrition (TPN) in all cases as compared to primary anastomosis^{6,7}. The mortality of apple peel atresia remains high though it has come down greatly in most of the reported series in the last two decades^{5,7,8,9}. The improved survival in this malformation is due to early diagnosis by antenatal ultrasonography, appropriate surgery, better neonatal intensive care facility with multidisciplinary involvement and nutritional support. Children with apple peel atresia suffer serious morbidity like short bowel syndrome, sepsis and TPN related complications during the post-operative course. Late morbidity is said to be low. They have a good chance of having normal bowel function with normal growth and development^{8,10}.

In summary apple peel deformity is a rare type of jejuno-ileal atresia, appropriate surgery and supportive care improves the outcome.

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Fig.1 plain x-ray abdomen shows 'triple bubble' sign.



Fig.2 Operative photograph showing the 'apple peel' deformity

