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Case Report

Successful management of Gastroschisis baby at Tripura medical college and Dr. BRAM teaching hospital: a rare case report

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ABSTRACT

Gastroschisis is a congenital defect of the anterior abdominal wall in which the intestines and other abdominal organs, protrude from the abdomen through a small hole. In recent years rates of Gastroschisis have been increasing. Most of cases it is an isolated defect or associated with other anomalies. Ultrasonography can detect it within 14 weeks after physiological herniation. Gastroschisis and omphalocele are two defect that closely resemble each other. In this case, we discuss a newborn baby with gastroschisis being successfully managed and was discharged in healthy condition 21days later.

Keywords: Gastroschisis, Congenital defect, Anterior abdominal wall

INTRODUCTION

Abnormal development of the abdominal cavity can lead to congenital defects such as gastroschisis and omphalocele. Gastroschisis means “cleft belly” in the Ancient Greek language and was first defined by Calder in 16th century in the medical literature. The type and size of defect can be determined with prenatal ultrasound. Other measurements, such as the lung/thorax transverse ratio and observed/predicted total lung volume (O/E TLV) on fetal MRI, can also be determined to estimate the amount of pulmonary hypoplasia associated with large defects, allowing for appropriate prenatal counselling. Gastroschisis is a rare congenital anterior abdominal wall defect, which involves herniation of the small bowel with no membranous sac covering it.[1] It is usually present just to the right of a normal insertion of the umbilical cord into the body wall. It is seen in approximately 1 in 4000 live births, and is more common in mothers under 20 years of age. It is usually diagnosed during serial prenatal ultrasonography. There is an increased risk of intra uterine growth retardation (IUGR), fetal death, and premature delivery.[2] Treatment is by reduction of the bowel and closure of the defect.[1]

CASE REPORT

A 12 hours old newborn baby was referred from rural hospital to Tripura Medical college and Dr. BRAM teaching hospital with the chief complaint of herniation of whole of gut loops just after delivery. The baby was admitted in SNCU of Tripura medical college and Dr. BRAM teaching hospital. After initial resuscitation and stabilisation, the baby was sent for pediatric surgery consultation and was evaluated and diagnosed as a case of gastroschisis with sepsis. The prognosis of such cases depends mainly on the mode of transport of the baby to a centre with pediatric surgery facilities and also on the prompt execution of treatment plan. After correcting dehydration and after initial 3 doses of injectable antibiotics, the baby was taken for emergency operation. Intra operatively, the bowel loops were washed thoroughly with normal saline.

Figure 1: Pre-operative picture showing almost whole of the abdominal contents outside the abdominal cavity (gastroschisis) uncovered.

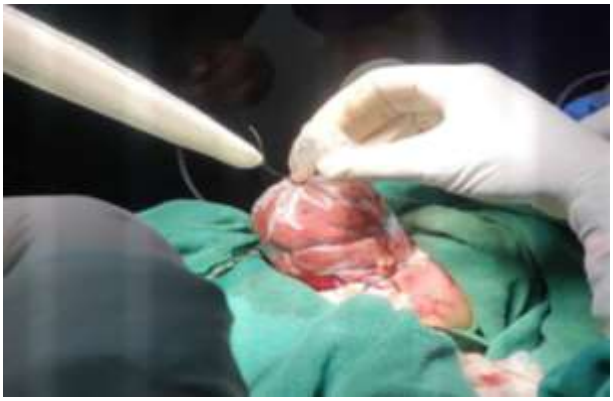

Figure 2: Intra-operative picture showing SILO procedure.

Figure 3: Gradual tightening of bogota bag and gradual reduction of contents in the abdominal cavity.

The bowel loops were identified, isolated and traced till rectum to rule out any associated intestinal atresia. Since there was gross viscero-abdominal disproportion so single step closure of abdominal wall was abandoned and SILO was performed using urobag as bogota bag to cover the exposed bowel loops. Post-operatively gradual tightening of bogota bag was done and the bowel loops got reduced to occupy abdominal cavity by 2 weeks. The abdominal defect was closed after that, by component separation technique. The baby was doing well and was discharged successfully after 1week. Post -operative follow up at 2 years shows almost normal abdominal wall with scarring on the operative site.

Figure 4: Picture showing the baby after component separation technique was performed.

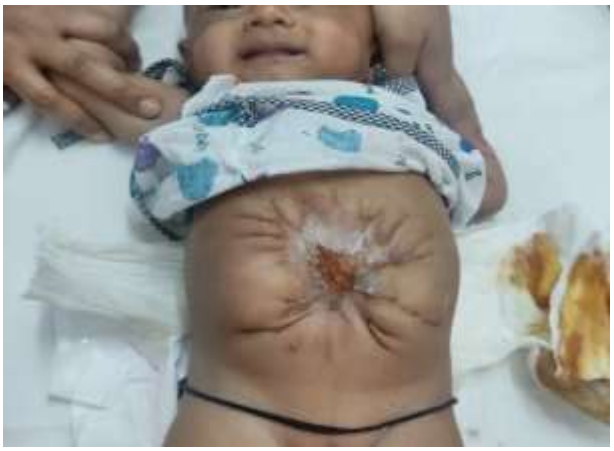

Figure 5: Picture showing the baby after 1 year follow up.

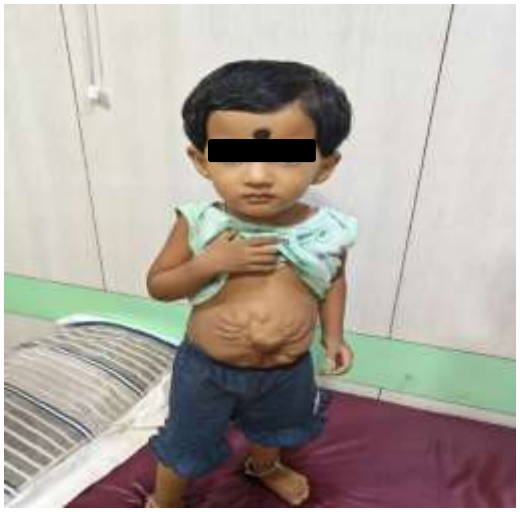

Figure 6: Picture of the baby after 2 years follow up.

DISCUSSION

Gastroschisis, also known as "laparoschisis", is en countered in one of 10000 newborns. The incidence does not vary concerning race or gender. However, it is indicated that being a mother in a very young age rises the risk of gastroschisis. Another aspect regarding the disease is that for mother to be a smoker. It is shown that smoking increases the risk of encountering anteri or abdominal wall defect by 2.1 times. Werler et al reported taking pseudoephedrine increases the risk of gastroschisis by 3 times, while salicylate and acetaminophen by 11 times.[8] A gastroschisis diagnosis can be achieved in the prenatal stage by means of an ultrasonography, which has high sensitivity and specificity for its detection. Detecting the disease is possible since week 12 with rates of up to 90%, depending on the quality of the equipment used, the institution were the examination is performed and the experience of the staff. Gastroschisis is the most common major abdominal wall defect. It is usually a small defect in the anterior abdominal wall typically located to the right of the umbilical ring and resulting in the herniation of the abdominal contents, without a surrounding membrane, into the amniotic cavity.[3] Exact cause of gastroschisis is uncertain, but various causes have been proposed including ischemic insult to the developing body wall. The right paraumbilical area is an area at risk because it is supplied by the right umbilical vein and right omphalomesenteric artery until they involute. If this ordered development and involution is disturbed in degree or timing, then a body wall defect could result from the resulting body wall ischemia.[2,3] An alternative hypothesis that may account for some cases of gastroschisis is that the defect results from an early rupture of a hernia of the umbilical cord.[3] In Gastroschisis the bowel is usually thickened, matted, oedematous and covered with a fibrinous peel.[3] Gastroschisis has a very strong association with young maternal age, with most of these mothers being age of 20 years or younger.[4,5] Oligohydramnios is also common in gastroschisis, being present up to 25% of cases. The cause is unknown and it is usually of moderate severity and associated with IUGR, fetal distress, and birth asphyxia.[2] Gastroschisis can be differentiated from omphalocele as it is herniation of abdominal viscera through an enlarged umbilical ring.[4] The origin of defect is failure of the bowel to return to the body cavity from its physiological herniation during 6th week to 10th week. The viscera are covered by amnion.[2,6] Gastroschisis can be differentiated from umbilical hernia. The intestines return to the abdominal cavity during the 10th week but the mass again herniate through an imperfectly closed umbilicus, thus forming umbilical hernia.[2,1] Gastroschisis is often diagnosed during prenatal ultrasound done for routine obstetric evaluation. AFP is also usually elevated in abdominal wall defects. Prenatal ultrasound could potentially identify the overwhelming majority of abdominal wall defects and accurately distinguish omphalocele from gastroschisis. The outcome of patients who have gastroschisis depends largely on the condition of the vulnerable bowel.[6,7]

CONCLUSION

Intensive critical care resuscitation and monitoring are imperative to the survival of infants with giant gastroschisis and total liver herniation. Advanced ventilator techniques and monitoring of renal function are important for survival of these infants after birth, while traction-based abdominal wall growth can allow closure of the abdomen. However, extensive prenatal counselling and discussions about the postnatal course, complications, and risk of death are essential as survival, while possible, is well below that of other gastroschisis patients. Improved understanding of gastroschisis, its early diagnosis by prenatal ultrasound, safe delivery of the foetus with a ventral wall defect, advanced surgical techniques for its correction and intensive care management of neonates reduces the morbidity and mortality.

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