

GASTRIC PERFORATION IN PRETERM NEONATE – AN INFREQUENT ENTITY**BalKrishnaTripathi¹ and Sisodiya R.S²**¹Era Medical College, Lucknow UP, India²Department of Pediatric Surgery, MAMC and Associated LNH, New Delhi -110002, India**ARTICLE INFO****Article History:**Received 10th April, 2016Received in revised form 29th May, 2016Accepted 15th June, 2016Published online 28th July, 2016**ABSTRACT**

Gastric perforation among neonates is a rare but frequently fatal condition of uncertain etiology. These children present with acute abdomen and rapid clinical deterioration. Prompt diagnosis and early intervention reduce mortality. Here we are presenting a case of successfully managed gastric perforation in preterm neonate

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INTRODUCTION

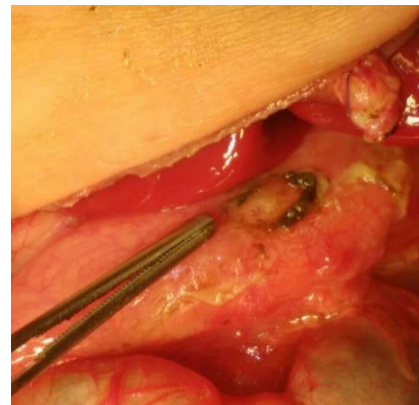
Neonatal gastric perforation is an infrequent and life threatening surgical emergency, it often occurs without any precipitating event, after which patients deteriorate rapidly.^[1] The high mortality rate can be attributed to vulnerability of the neonatal period, but the process evolves so rapidly that prompt diagnosis is necessary if improved survival rates are to be achieved.^[2] Many theories have been proposed for the pathogenesis of gastric perforation, but the aetiology is still unknown. Here, we present a cases of neonatal gastric perforation.

Case report

A 3-day-old pre term baby, weighing 1800 g, male child was admitted with history of abdominal distention. Examination revealed a lethargic new-born with marked abdominal distention. Bowel sounds were absent. Abdominal X-ray revealed huge free intraperitoneal air [Figure 1]. Provisional diagnosis of perforation peritonitis was made.

**Figure 1** showing huge pneumoperitoneum

After adequate resuscitation and stabilisation patient underwent laparotomy through right upper transverse incision, on exploration, there was single 8mm x 9 mm gastric perforation seen on anterior wall of stomach near greater curvature [Figure 2]. Primary repair with Omentum patch was done and abdomen was closed. Postoperative period was uneventful and baby was discharged on 8th postoperative day. Histopathological examination of the margin of perforation area revealed nonspecific inflammation.

**Figure 2** Gastric perforation**DISCUSSION**

Gastric perforation in the newborn infant was first described by Siebold in 1825.^[3] The first successful surgical repair was reported by Leger *et al* in 1950.^[4] There are three causes that have been proposed for stomach perforation: traumatic, ischaemic, and spontaneous. Trauma^[5] by vigorous nasogastric or orogastric tube placement have been implicated as most common cause of perforation. Positive pressure ventilation may cause Traumatic gastric perforation.^[6] It is difficult to explain the process that lead to ischemic perforation because these are related with conditions of severe

physiological stress, such as extreme prematurity, sepsis and neonatal asphyxia. Ischaemic gastric perforations have been found to occur in conjunction with necrotising enterocolitis. Gastric stress ulcers through process of Transmural necrosis can cause gastric perforation in critically ill infants.^[5, 6]

Healthy infants may have spontaneous perforation of stomach, usually within the first week of life, particularly in between the first 2 and 7 days of life.^[7] Congenital defects in the muscular wall of the stomach have been found to be causative factor for spontaneous gastric perforation.^[8]

Anatomic defects of the gastric muscular wall have been suggested to potentiate perforation of the stomach among neonates, especially in prematurity. The circular muscle layer of the newborn stomach normally contains several gaps, most prominently in the fundus, near the greater curvature. These gaps are more common in premature infants.^[9] Under normal circumstances, such gaps may have little clinical significance, but they are potential weak points in the stomach wall that might be susceptible to rupture if intragastric pressure increases

Surgical repair of most perforation consists of debridement and closure of stomach with use of omentum for its rich vascularity. Postoperative vigorous supportive therapy combined with the use of broad spectrum antibiotics is of paramount importance. In very sick infants, external peritoneal drainage may be required to buy time to stabilised patient for short interval, followed by surgical intervention once child condition permit. The mortality of infants with gastric perforation has been reported to be higher among premature and LBW; 62% and 55% respectively that can be because of associated morbidity in these neonate.^[1]

CONCLUSION

Prompt diagnosis, vigorous preoperative and post-operative therapy with timely surgical intervention can reduce mortality in these children.

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