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IP Journal of Paediatrics and Nursing Science

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Case Report

Spontaneous gastric perforation in a 3 year old male child – A case report

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ARTICLE INFO

Article history:
Received 25-09-2021
Accepted 08-10-2021
Available online 19-10-2021

Keywords:
Gastric perforation
H Pylori
Helicobacter pylori
Neonatal age
Paediatric age
Pneumoperitoneum
Spontaneous perforation

ABSTRACT

Background: spontaneous gastric perforation in paediatric patients beyond the neonatal age is seldom to seen by paediatric surgeon. Therefore we are sharing this case with enlisting the previously reported similar cases in English literature.
Case Report: a three year old male child presented with abdominal distension and hypovolemic shock. Free gas under diaphragm was explained the perforation and exploration confirm the gastric perforation.
Conclusion: spontaneous gastric perforation is extremely rare in paediatric age group beyond the neonatal age group, but incidence probability is always there. So, each laparotomy needed exploration of stomach also.

1. Introduction

Spontaneous gastric perforation in paediatric age is extremely uncommon clinical finding. Most of the reported spontaneous gastric perforation found in neonatal age group.[1,2] Most of the articles concerning to spontaneous idiopathic gastric rupture in pre-school children were reported in japan and china population in their journals. It showed that the incidence of spontaneous idiopathic gastric rupture higher in japan and china.[1,3,4] Early diagnosis and treatment is mandatory because delayed management would be fatal for children.[1,5] Haewon Kwak et al. (2016) tabulate beautifully all the possible reported causes of gastric perforation in children beyond the neonatal period. The possible mechanisms of gastric perforation are vascular injury, inflammatory cause, mechanical injury, foreign body ingestion, and others.[6]

2. Case Report

A three years old male child admitted in paediatric surgery casualty with complaint of severe abdominal distension, cold periphery and feeble pulse. He had history of black color stool and pain abdomen since two-three months. On examination he was in shock with thready pulse, and pallor. Abdomen was severely distended. Tachycardia and tachypnea was there. Periphery was cold and clammy. Radial pulse was feeble and thready. He was admitted and resuscitation and optimization was done. Blood transfusion was done because he was anaemic. Simultaneously he was evaluated for etiopathology. X-ray abdomen showed free gas under both dome of diaphragm.

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https://doi.org/10.18231/j.ijpns.2021.024

After optimization exploratory laparotomy was done. On exploration there was 500 ml contaminated fluid and yellow flakes present in peritoneal cavity. Whole small and large bowel was examined after drainage of contaminated fluid, but perforation could not found. Then stomach was explored and a perforation 0.5x0.5 cm size at anterior wall of antral part of stomach. We repair the perforation and abdominal drain was placed. Post-op recovery was smooth and uneventful. On Post-operative day one serum gastrin level and Helicobacter pylori antibody titer was get done. Serum gastrin level was normal but antibody for Helicobacter pylori was positive. So, treatment of line was given concerning to Helicobacter pylori. Blood in stool, pain abdomen, antibody test positivity favors the Zollinger-Ellison syndrome except normal serum gastrin level. Oral feed started after five days. Abdominal drain out-put was minimal and removed after six days. Surgical wound was healthy. Patient was discharge on post-operative day ten after stitch removel. Follow-up of patient was done for six months and remain uneventful and cheerful for parents.

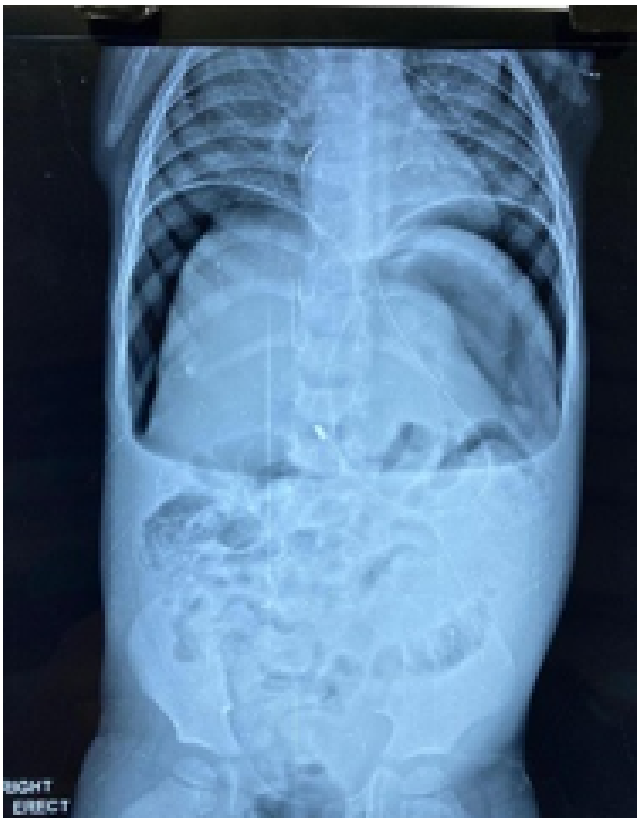

Fig. 1: X-ray abdomen showed free gas under both dome of diaphragm.

3. Discussion

Gastric perforation is more common in low birth weight neonates and neonates with birth asphyxia.[2,4,7] First

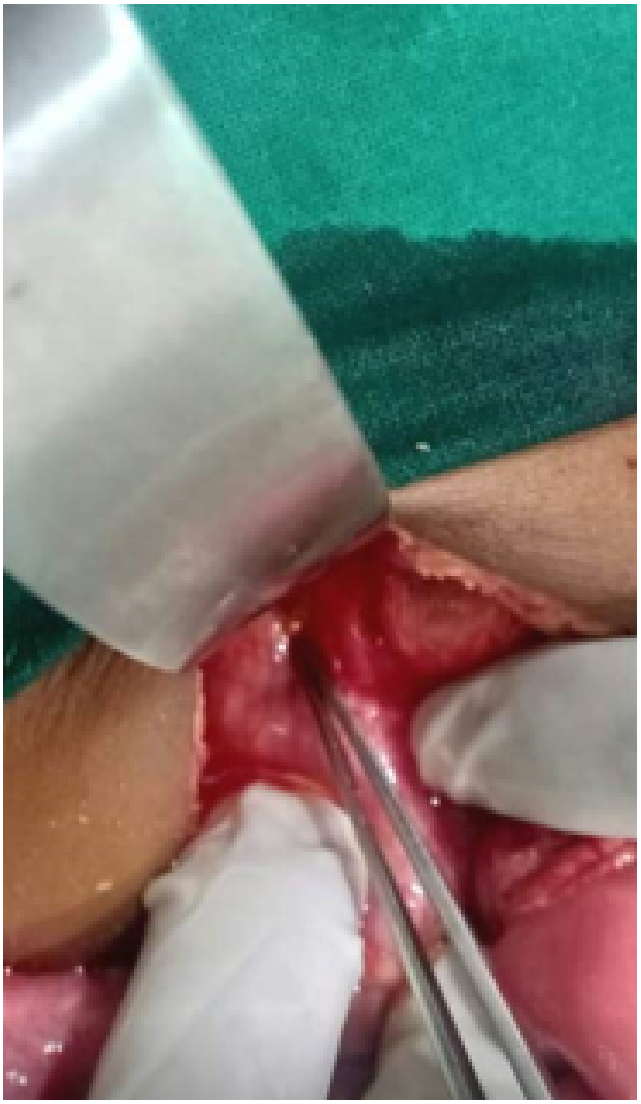

Fig. 2: Stomach perforation, size 0.5x0.5 cm size at antral part of stomach.

neonatal gastric perforation was reported by Siebold in 1825.[8] Typical findings of gastric perforation are abdominal distention, emphysema subcutaneous level, features of shock.[9] Our patients also present with shock and severe abdominal distention. Causes of gastric perforation in paediatric age beyond the neonatal age are (a) peptic ulcer –reason by stress ulcer, Zollinger-Ellison syndrome, infection, tumors like Adenocarcinoma, Burkitt lymphoma, and Lymphomatoid granulomatosis.[10–12] (b) Mechanical injury – reason by forceful feeding tube insertion, endoscopic injury, blunt trauma abdomen[13,14] (c) Foreign body ingestion – like battery, toothpick[15,16]. (d) Vascular injury – reason by gastric volvulus, incarcerated internal hernia.[17,18] (e) Anorexia nervosa, Idiopathic.[18]

Paediatric gastric perforation beyond neonatal age have fatal out come and as high as up to 30% mortality rate.

Spontaneous Perforation of greater curvature have higher mortality rate. Paediatric critical illness score (PCIS) help to evaluate the gravity of illness in paediatric patients.[19] PCIS calculated before surgery, it includes patient's age and ten physiological indices. These indices are heart rate, breath rate, systolic blood pressure, oxygen partial pressure and pH of arterial blood, serum sodium and potassium, creatinine or urea nitrogen, hemoglobin and Glasgow coma scale.[20]

A study done by Adachi Y et al. in preschool children with gastric perforation and concluded that spontaneous gastric perforation common in female child involving the posterior wall of greater curvature.[4] In our case perforation was found at anterior wall of stomach in male child. Better choice of spontaneous Gastric perforation is simple gastric repair than sleeve gastrectomy. Because sleeve gastrectomy may leads to feeding problem. We also did simple repair of gastric perforation.

4. Conclusion

Spontaneous gastric perforation in paediatric age beyond the neonatal age group is a rare entity. Very few cases were reported till now in English literature. We learn a lesson that Stomach should also be explored in all case of pneumoperitoneum in paediatric patients, because gastric perforation might be possible.

5. Conflict of Interest

The authors declare that there are no conflicts of interest in this paper.

6. Source of Funding

None.

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Cite this article: Singh AP, Barolia DK, Bathia HV, Parmar VH, Mehta BA, Mehta S. Spontaneous gastric perforation in a 3 year old male child – A case report. *IP J Paediatr Nurs Sci* 2021;4(3):115-117.