



CASE SERIES OF NEONATAL GASTRIC PERFORATION IN OUR RURAL TERTIARY HOSPITAL

Dr. Neha Ullalkar	Junior resident , Department of General Surgery, SDUAHER.
Dr. V. R Aravind	Assistant Professor, Department of General Surgery, SDUAHER.
Dr. P. N. Sreeramulu	Professor , Department of General Surgery, SDUAHER.
Dr. K Krishna Prasad	Professor, Department of General Surgery, SDUAHER.
Dr. C.V Shashirekha	Professor And HOD, Department of General Surgery, SDUAHER.
Dr. Sudha Reddy V. R	Professor And HOD, Department of Pediatrics, SDUAHER.

ABSTRACT

Background (Introduction): Neonatal gastric perforation is a rare and catastrophic condition with high mortality. Various factors and theories have been proposed as a possible cause but the etiology still remains obscure. Gastric perforations are often large and associated with necrosis of a significant portion of the stomach wall. Early identification and treatment are essential and may improve the outcome. It is, therefore, imperative to highlight the need for increased awareness of NGP to optimize outcome through urgent surgical intervention in a timely manner. We hereby describe five cases of NGP, and their management with prompt surgical intervention.

KEYWORDS :

Lacunae In Knowledge

Although predominantly seen in preterm and low birth weight neonates, neonatal gastric perforation can occur in healthy term infants as seen in our series.

Early diagnosis of neonatal gastric perforation is often difficult since the presentation and symptoms are non-specific and can mimic sepsis, respiratory distress, poor feeding, NEC, intestinal obstruction, and pneumoperitoneum without gastrointestinal perforation.

Neonatal gastric perforation is a serious and life-threatening condition, hence prompt and urgent surgical exploration is crucial. The time between symptoms and surgery is also a prognostic factor for survival.

OBJECTIVES:

To Report Case Series Of Neonatal Gastric Perforation In Our Rural Tertiary Hospital

MATERIALS & METHODS

a. Type of study: Retrospective Observational Case Series Study

b. Duration of Study: 02 years (Jan 2021-Jan 2023)

c. Mode of selection of subjects: Retrospective Observational case series study conducted in Dept of General Surgery in collaboration with Dept of Paediatrics at R L Jalappa Hospital and Research centre.

Inclusion criteria:

- Both In-born and Out-borne neonates.
- Both term and preterm neonates.

Exclusion Criteria

- Neonates with any congenital gastro-intestinal (GIT) anomalies.

d. Equipment / procedure and other material to be used

Since this is a retrospective study, anonymity of the patient will

be maintained through the study. Socio- demographic details like age, gender, place, and occupation etc will be retrieved from medical records department (MRD). History and examination findings will be retrieved as per the profile. Based on clinical examination findings and erect X-ray abdomen, only neonates with gastric perforation without any congenital GIT anomalies will be included in this study. Ultrasound abdomen report will be the next investigation recorded, which gives any congenital GIT anomalies like intestinal atresia. Other relevant investigations like blood & urine culture etc which are done will also be recorded. Type of Surgery and its related complications will be recorded. Histopathological reports will also be included in the study. All the above modalities will be used to analyse the treatment protocol and outcome of the patient selected in this study. As gastric perforation is rare, it will be held as a case series.

Analysis & Statistical Methods

Statistical methodology / techniques to be employed for evaluating results

Data is entered into Microsoft Excel data sheet and analysed using SPSS 22 version software.

Graphical Representation of data

MS Excel and MS Word were used to obtain various types of graphs such as bar diagram, pie diagram.

Statistical software

MS Excel, SPSS version 22 (IBM SPSS Statistics, Somers NY, USA) was used to analyse data.

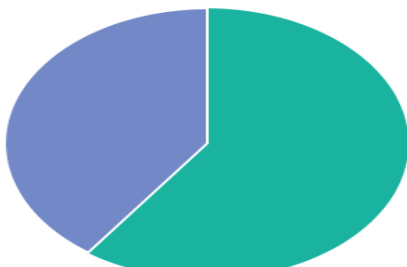
RESULTS:

A) Biased on Clinical Presentation and investigations-

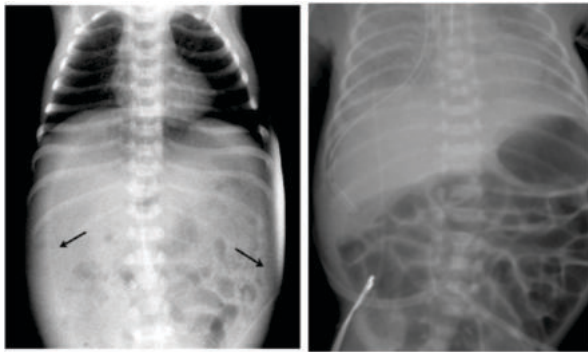
Sl no	Age/Sex	Clinical Presentation	Investigations
1.	Term LSCS/8days/M	Abdominal distension	TC 23000 X-ray= Football sign & RT outside stomach
2.	Preterm (32weeks)ND/6days/M	Abdominal distension	TC 19000 X-ray= Gas under diaphragm

3.	Term ND/1day/M	Abdominal distension	TC 21300 X-ray= Football sign
4.	Preterm (34weeks)/LSCS/4 days/F	Abdominal distension	TC 17700 X-ray= RT outside stomach
5.	Term ND/2days/M	Abdominal distension	TC 19800 X-ray= gas under diaphragm

AGE



■ <7DAYS ■ >7DAYS

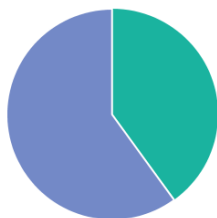


Images Of Pneumoperitoneum In Xray Abdomen

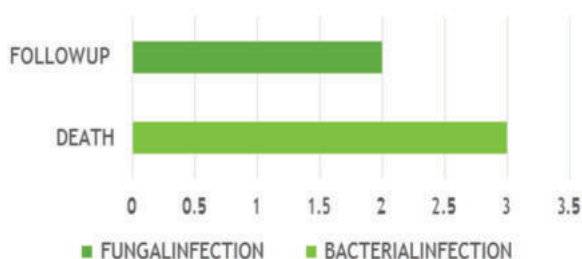
B) Biased On Site Of Perforation, Post Operative condition:

Sl no	OT findings/Site of perforation	Post op	Remarks
1.	greater curvature	wound infection +; On follow up	HPE- fungal hyphae +
2.	lesser curvature	Expired (sepsis)	Blood c/s- Klebsiella HPE- necrosed gastric mucosa
3.	greater curvature	Expired (sepsis)	Blood c/s- E.coli Pus c/s- sterile
4.	greater curvature	Expired (sepsis)	Blood c/s- E.coli
5.	lesser curvature	On follow up;	Peritoneal fluid- fungal hyphae+

SITE OF PERFORATION



■ LESSER CURVATURE ■ GREATER CURVATURE



DISCUSSION:

Gastric perforation is rare in newborns born at term and represents 10-16% of neonatal gastrointestinal perforation. The usual age of onset is between two and seven days, and there is a predilection for black and male sex. Several risk factors are associated with the condition: prematurity, low birth weight, aggressive ventilation, distal obstruction. Sudden gross distension of abdomen with minimal NG aspirates, x-ray showing massive pneumoperitoneum & RT outside stomach.⁴

The clinical manifestation of neonatal gastric perforation includes abdominal distention, feeding intolerance, respiratory distress, poor activity, gastrointestinal bleeding, abdominal erythema, and hemodynamic changes as shock. Two patients had fungal hyphae growth, after appropriate treatment and management, both the patients have survived and were discharged.⁵

CONCLUSION:

Early diagnosis, hemodynamic monitoring, and appropriate management were achieved in our 2 cases, which may have contributed to the favorable outcomes. Gastric perforation has high mortality, Sepsis being leading cause of death. Early diagnosis & intervention yields good results. Fungal etiology to be considered.^{6,7}

REFERENCES IN VANCOUVER STYLE:

- Lin CM, Lee HC, Kao HA, et al. Neonatal gastric perforation: Report of 15 cases and review of the literature. *Pediatr Neonatol* 2008Jun;49(3):65-70.
- Kara CS, İlçe Z, Celayir S, Sarimurat N, Erdogan E, Yeker D. Neonatal gastric perforation: Review of 23 years' experience. *Surg Today* 2004;34(3):243-5.
- Yang CY, Lien R, Fu RH, et al. Prognostic factors and concomitant anomalies in neonatal gastric perforation. *J Pediatr Surg* 2015Aug;50(8):1278-82.
- Grosfeld JL, Molinari F, Chaet M, et al. Gastrointestinal perforation and peritonitis in infants and children: experience with 179 cases over ten years. *Surgery* 1996 Oct;120(4):650-5; discussion 655-6.
- Leone RJ Jr, Krasna IH. 'Spontaneous' neonatal gastric perforation: Is it really spontaneous? *J Pediatr Surg* 2000Jul;35(7):1066-9.
- Herbut PA. Congenital defect in musculature of stomach with rupture in newborn infant. *Arch Pathol* 1943;36(91).
- Lin CM, Lee HC, Kao HA, et al. Neonatal gastric perforation: Report of 15 cases and review of the literature. *Pediatr Neonatol* 2008Jun;49(3):65-70.
- Kara CS, İlçe Z, Celayir S, Sarimurat N, Erdogan E, Yeker D. Neonatal gastric perforation: Review of 23 years' experience. *Surg Today* 2004;34(3):243-5.
- Yang CY, Lien R, Fu RH, et al. Prognostic factors and concomitant anomalies in neonatal gastric perforation. *J Pediatr Surg* 2015Aug;50(8):1278-82.
- Grosfeld JL, Molinari F, Chaet M, et al. Gastrointestinal perforation and peritonitis in infants and children: experience with 179 cases over ten years. *Surgery* 1996 Oct;120(4):650-5; discussion 655-6.