INTRAOPERATIVE AND POSTOPERATIVE MANAGEMENT OF DUODENAL PERFORATIONS IN CHILDREN: A DESCRIPTIVE CASE SERIES

Dr. Sara Muhammad Amin (PGR II) & Prof. Naima Zamir
National Institute of Child Health Karachi, Pakistan

Introduction:

Duodenal injuries are uncommon surgical emergencies that carry high morbidity and mortality and can be due to traumatic or non traumatic causes[1-3].

Objective:

To determine the importance of etiology, timing of presentation, complication and management of duodenal perforation.

Methodology:

Design: A descriptive case series of 10 patients
Duration: January 2022 – 2024
Variables:
Age: Paediatric patients up to 12 years
Timing of Presentation:
Early: < 48 hours
Delayed: > 48 hours
Etiology: Traumatic vs non-traumatic
Intraoperative findings
Procedure:
Primary repair with or without T-tube/nasoduodenal tube
Postoperative: Complication, management, and outcome
Analysis: Descriptive statistics using SPSS version 21.0
Mean and Standard Deviation.

Results

Total patients: 10 (5 Traumatic & 5 Non Traumatic)
Gender: 9 males, 1 female
Mean age of traumatic patients: 9.6 ± 2.06 years
Mean age of non-traumatic patients: 10.8 ± 1.47 years
Presentation:
Early: 6 patients
Delayed : 4 patients
All patients underwent primary repair-four without tube; one with T-tube; five with nasoduodenal tube.
Complications:
Duodenal repair leak (40%)
Wound infection (10%)
Managed non-operatively with nutrition, fluid and electrolyte balance, and sepsis control

Data of Non-Traumatic Perforation:

Operative findings	Operative Procedure	Complication	Hospital Stay	Postoperative management
Early				
D2, Grade II, single, 0.5×0.5 cm,	Primary repair with drain placement	None	8 days	Standard Care
Delayed				
D1, Grade II, single, 2×2 cm	Repair with placement of nasoduodenal tube	Duodenal repair leak	23 days	Nutrition, Fluid and electrolyte balance, Sepsis control
D1, Grade III, single, 2×2 cm	Primary repair with drain placement	Wound infection	11 days	Wound management
D2, Grade II, single, 1.5×1.5 cm	Primary repair with drain placement	Enterocutaneous fistula	42 days	Nutrition, Fluid and electrolyte balance, Sepsis control
D2, Grade II, single, 2×2 cm	Repair with nasoduodenal tube placement	Duodenal repair leak	40 days	Nutrition, Fluid and electrolyte balance, Sepsis control

Data of Traumatic Perforation:

Operative findings	Operative Procedure	Complication	Hospital Stay	Postoperative management
Early				
D3, Grade III, single, 3×3 cm	Repair of perforation over T-tube	Enterocutaneous fistula	58 days	Nutrition, Fluid and electrolyte balance, Sepsis control
Delayed				
D2, Grade II, single, 1.5×1.5 cm	Repair with placement of nasoduodenal tube	None	8 days	Standard Care
D2, Grade II, single, 2×2 cm	Repair with placement nasoduodenal tube	None	10 days	Standard Care
D2, Grade II, single, 0.5×0.5 cm	Primary repair with drain placement	None	6 days	Standard Care
D2, Grade II, single, 1.5×1.5 cm	Repair with placement nasoduodenal tube	None	8 days	Standard Care

Conclusion:

- Delayed presentation of a diseased duodenum carries a higher risk of repair leakage in non-traumatic patients.
- A higher grade of injury correlates with a higher chance of repair leakage in traumatic patients.
- A controlled fistula technique was used in higher-grade duodenal injuries.
- Timely recognition and structured intraoperative repair, combined with standardized postoperative care, reduce complications and improve overall outcomes in duodenal injury[1-3].

Reference:

1. Ratan SK, Kulsreshtha R, Kulsreshtha V, et al. J Indian Assoc Pediatr Surg. 2016;21(1):26–30.
2. Chirdan LB, Ameh EA, Nmadu PT 2015;31(10):953–958.
3. Mouafo Tambo FF, Atangana R, Tchana-Sato V, et al. Afr J Paediatr Surg. 2020;17(1):19–23.