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Case Report

Non-Obstructive Acute Gastric Dilatation Secondary to Neonatal Septicaemia; A Diagnostic Quandary

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Abstract

Acute gastric dilatation (AGD) in neonates is a rare clinical entity. It may be obstructive or non- obstructive. While obstructive AGD though uncommon, is well documented, non-obstructive AGD is extremely rare. We report a case of non-obstructive AGD associated with septicaemia and meningitis in a 10 days old neonate who was successfully managed without any surgical complications. Severe acute gastric distension if unattended, can cause sudden death. Hence, early detection and intervention are very important to prevent mortality. Very few cases of severe non obstructive AGD are reported so far in the literature and we wanted to share our experience in order to increase awareness on this preventable complication.

Keywords: *Acute Gastric Dilatation (AGD); Neonatal Septicaemia*

Abbreviations

CRP: C-Reactive Protein; PPN: Partial Parenteral Nutrition; ABG: Arterial Blood Gases

Introduction

Acute gastric dilatation (AGD) in neonates is a rare clinical entity[1]. It may be obstructive or non- obstructive [1]. Obstructive dilatation which is a surgical entity is much commoner than the non-obstructive type which is extremely rare [1]. Causes of obstructive AGD are antral stenosis, webs, or gastric atresia [1]. Usual causes of non-obstructive AGD are excessive swallowing of air in non-invasive respiratory support, improper placement of the endotracheal tube, while distal tracheoesophageal fistula, septicaemia and hypocalcaemia rarer [1]. There are very few cases of non-obstructive AGD reported in the literature. No similar cases are reported so far in Sri Lanka.

Case History

A Term non asphyxiated baby was delivered by elective caesarean section, on elderly primipara with gestational diabetes mellitus. Anomaly scan and initial septic screening were normal.

He was admitted to the special care baby unit on day 2 with fever and weight loss of 10%. Examination was unremarkable. His C-reactive protein (CRP) on day 3 was 53 mg/l thus, commenced on IV antibiotics. On day 4, due to hematochezia, he was kept nil orally and managed as probable sepsis and/or necrotizing enterocolitis. Total parenteral nutrition was commenced. Due to apparent clinical improvement on day 8, feeds were re-introduced.

On day 10 of age, he developed respiratory distress, abdominal distension and blood-stained gastric aspirate. Baby was haemodynamically stable. Upon investigation, neutrophil leucocytosis, platelets - 39,000/microliter, CRP - 218 mg/l and Enterobacter cloacae positive blood culture was noted. Arterial blood gases, serum electrolytes and Chest x-ray were normal. X-ray abdomen revealed markedly dilated stomach with absent distal bowel gas (Figure a). This was confirmed by an ultrasound scan.

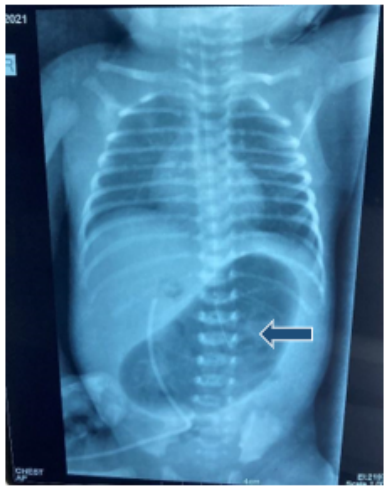

Figure a

A nasogastric tube was inserted and kept open for drainage with regular gastric aspirations. A contrast study excluded intestinal obstruction and anatomical malformations (Figure b).

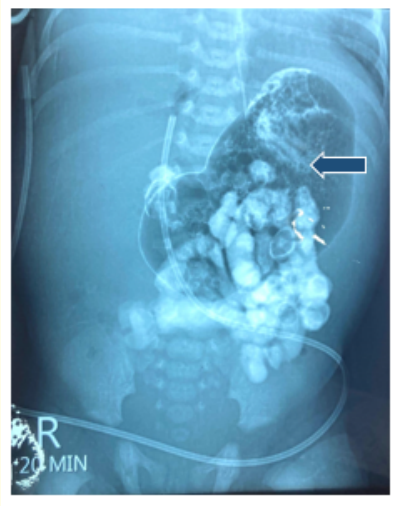

Figure b

A lumbar puncture confirmed a meningitis. The baby steadily improved over the next 3 days on treatment with sensitive antibiotics and supportive care. He was discharged after treating for meningitis.

A diagnosis of acute gastric dilatation secondary to Enterobacter cloacae septicaemia was made.

Discussion

When compare these two clinical entities; in obstructive AGD, the baby may present with projectile non bilious vomiting. Clinically, abdominal distension will be present with copious gastric drainage [1]. Xray abdomen will reveal dilated, air filled stomach with absence or presence of gas in distal bowel in complete or partial obstruction respectively [1].

Non-obstructive AGD occasionally reported in children with cerebral palsy and severe mental retardation is thought to be due to autonomic neuropathy or neuromuscular in-coordination [2]. Preterm babies on mydriatics may also develop AGD [3]. Septicaemia is a rarely reported cause of AGD which should be diagnosed by exclusion [1].

In our patient, all causes were eliminated leading us to confirm severe septicaemia as the cause of non-obstructive AGD [1,4].

Cisneros-Garcia., *et al*. in 1993, reported a similar clinical scenario in a two-day old new born with septicaemia and meningitis which revealed non-obstructive AGD at laparotomy [4].

Rajul Rastogi., *et al*. in 2009, reported a clinical situation where a preterm two-day old new born with respiratory distress and septicaemia developed non-obstructive AGD, most likely due to sepsis [1].

The mainstay of management is nasogastric/orogastric drainage of excess air and handling of the underlying condition. Respiratory distress in our patient was probably due to acute gastric distension causing diaphragmatic compression as the CXR and PaO_2 were normal.

Our patient showed remarkable recovery with early detection, early surgical opinion and appropriate management, exclusion of obstructive AGD, and treatment of septicaemia. The baby was discharged home after completion of treatment for septicaemia and meningitis.

This is the first reported case of acute gastric dilatation in a term neonate with excellent recovery, in South Asia.

Conclusion

Non-obstructive AGD has a good prognosis when the primary condition is appropriately managed[2]. Severe acute gastric distension if unattended, can cause sudden death due to gastric perforation or apnoea due to vagal stimulation. Hence, early detection and intervention are very important to prevent mortality [4,5]. Very few cases of severe non obstructive AGD are reported so far in the literature and we wanted to share our experience in order to increase awareness on this preventable complication.

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