A Case Report on Acute Abdominal Compartment Syndrome 2NRY to Acute Gastric Dilatation

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Abstract

The abdominal compartment syndrome can be diagnosed when there is increased intra-abdominal pressure with evidence of end-organ dysfunction. Gastric dilatation might be very important, so as to provoke abdominal compartment syndrome. When treatment is delayed, it results in mortality by 15%-20% in ratio.

In this case report there was a 45 years old man presented with abdominal distention of 10 hrs. He had also failure to pass feces and flatus and 2 episode of vomiting of ingested matter. On past history he had dyspeptic symptoms for the past 1 year but he had no known chronic illness. On physical examination his blood pressure was unrecordable and pulse was feeble, hypothermic and was desaturating. Chest was clear and good and comparable air entry.

Chest is clear and good and comparable air entry. On abdominal examination there was much distended board like abdomen and ballooned out rectum beyond the anal opening and difficult to insert a finger. On genitourinary examination: he is anuric and on musculoskeletal system he was well nourished man.

He was investigated with erect abdominal film which showed distended stomach but no air under the diaphragm was seen, and Hemoglobin was 12. After 3 bags of Ringer lactate was given with double IV line with in 30 min laparotomy was done. The intraoperative findings were gush of air and 100 mL of serous fluid with High pressure upon opening the abdomen, with significantly dilated stomach starting from diaphragm and reaching to the pelvis and partly volvulated anti-clockwise, there was perforation around 2.5 cm at the greater curvature posteriorly.

Then what was done was suctioning of serous and gastric content, done and gastric perforation repaired and biopsy taken then thorough peritoneal lavage done and drain left at lesser sac and abdominal skin only closed considering relook after optimization. The patient was hypotensive and was desaturating all in the intraoperative course and despite the resuscitation and inotropic management he couldn't awaken from anesthesia and died after 4 hrs of operation with the immediate cause of death Multiorgan failure secondary to acute abdominal compartment syndrome secondary to acute massive gastric dilatation.

Keywords: Acute abdominal compartment syndrome; Acute massive gastric dilatation; Multiorgan failure secondary

Introduction

Abdominal compartment syndrome is a breakdown in circulation due to the elevation of pressure in a limited anatomic region, and therefore blood rushes the tissues, making a negative effect on the functionality of the organs [1-2].

In etiopathogenesis peritonitis, perforation and acute stomach dilatation are the reasons to be attributed [3-5]. Acute Gastric Dilatation (AGD) was first described by Duplay in 1833 [6]. Acute Massive Gastric Dilatation (AMGD) which is quite rare represents the extreme form of AGD [7]. When the stomach is extremely distended occupying the abdomen from diaphragm to pelvis and from left to right, the AGD is referred to as AMGD. Dilatation is triggered by the vicious cycle of elevation in gastrin secretion due to stretched antrum and stomach secretion, which is elevated due to gastrin secretion [8-9]. In this case report the presence of dyspeptic symptom was for around 1 year, though due to socioeconomic reason the patient was not having endoscopic diagnosis and any ulcer treatment [10]. Therefor severe presentation of abdominal compartment syndrome has mortality between 71%-85% [11,12]. So early clinical diagnosis and treatment of such case is very important and as well to report it has good academic importance for future management principles [13].

Case Presentation

History

A 45 years old man presented to the emergency department with sudden onset of abdominal distention which started 10 hrs back. He had also 2 episodes of non-bilious vomiting and central aching abdominal pain. He had symptoms of epigastric dyspepsia for more than 1 year, associated with spicy feeding but was not on any type of anti-ulcer medication.

He didn't pass flatus and feces and urine after his complaints. He had no history of chronic illness like Diabetes Mellitus (DM),
Hypertension (HTN), Respiratory Virus Infection (RVI) or any psychiatric illness. We witnessed one episode of tonic colonic type of seizure involving upper and lower extremities with uprooting of the eyes, drooling of saliva.

Physical examination
- General anaesthesia: Acutely sick looking
- Blood pressure: Unrecordable
- Per rectum: Rigid, Rectal examination revealed prolapse of sigmoid and hard stool, nasogastric tube tube in situ-no output
- Head, eye, ear, nose, and throat: pink conjunctiva, non icteric sclera, nasogastric tube tube in situ-no output
- Temperature=35°C, PaO₂=75, on facemask O₂-85%-90%
- Lennox-Gastaut syndrome: no leukocyte alkaline phosphatase
- Chest: Clear and good air entry
- Abdomen-grossly distended board like abdomen, hypertympanic to percussion
- Per rectum: Protruded out rectum obliterating the anal canal, difficult to insert a finger
- Genitourinary system: Ejaculated semen around the urethral orifice, catheter in situ, and no urine output
- Multiple sensory stimulation: no skin lesion, no edema
- Central nervous system: conscious and oriented, no motor deficit

Investigation-Hg 12 mg/dL, blood group: O+, erect abdominal film—significantly dilated Stomach with single air fluid level; there is no air under the diaphragm. Resuscitation started on double IV line and laparotomy done.

Inspection Observation Finding [IOF]: There was gush of air and around 100 mL of serous fluid with pressure upon opening the abdomen, with significantly dilated stomach from the diaphragm reaching to the pelvis and partly volublated anti clockwise. There was perforation around 2.5 cm at the greater curvature posteriorly 2 cm from the pylorus but there was no content leaked to the peritoneal cavity until decompression done due to slight volvulus and was contended in the lesser sac (Figure 1). There was serosal tear on the greater curvature anteriorly and thinned out gastric wall.

Small bowels were collapsed, dusky and patchy darkening of ileum on anti-mesenteric side at 2 sites initially then progressively developed at multiple sites of ileum and jejunum. The rectum and sigmoid colon were collapsed. The other part of visceras seems okay grossly (Figure 2).

Discussion and Conclusion
Immediate laparotomy and decompression done then suctioning of serous and gastric content done and gastric perforation repaired and biopsy taken. After that to shorten the anesthesia time thorough peritoneal lavage done and drain left at lesser sac and abdomen closed with only skin considering relook after optimization. Intraoperatively his BP was 80/40, despite he is on dopamine drip at 5 ug/k/min at max drop, and 2 units of crossed matched whole blood transfused he couldn’t awake from anesthesia and died after 4 hrs of stay on table with possible cause of death. Multiorgan failure 2ry to acute abdominal compartment syndrome 2ry to acute massive gastric dilatation and Reperfusion syndrome.

Conflicts of Interest
The authors have no conflicts of interest.

References

