

Abdominal Compartment Syndrome: A Case Report

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little is known about the impact of intra-abdominal pressure (IAP) in general internal medicine, pregnant patients, and those with obesity or burns^[2]. IAH in pregnancy must take into account the precautions for aorto-caval compression and has been associated with ovarian hyper stimulation syndrome.

Three categories of ACS:

- Primary or acute abdominal compartment syndrome occurs when intra-abdominal pathology is directly and proximally responsible for the compartment syndrome
- Secondary abdominal compartment syndrome occurs when no visible intra-abdominal injury is present but injuries outside the abdomen cause fluid accumulation
- Chronic abdominal compartment syndrome occurs in the presence of cirrhosis and ascites or related disease states, often in the later stages of the disease

CASE REPORT

A 31 year old female patient was admitted under OBG III. ELECTIVE LSCS under SAB on the basis of previous LSCS. Delivered a live term female baby of weight 2.730 kg. APGAR on same day. Family history. Mother – DM on OHA and father is hypertensive patient. The patient is allergic to Rantidine and Cefazolin.

On postoperative day (POD) 2, patient developed severe breathlessness, tachypnoea, tachycardia, facial puffiness, abdominal distension and decreased urine output, hence emergency general medicine consultation was sought in

ABSTRACT

Abdominal Compartment Syndrome (ACS) is a condition caused by abnormally increased pressure within the abdomen. Fewer than 1 million cases per year (India). Symptoms include a bloated abdomen, difficulty breathing or decreased urination. Rapid management is very important to prevent death. In this case, a thirty one year-old female without a similar history in the family, is presented with this condition on the second day after delivery. This case report study has been presented for the consideration of rare ACS in pregnant patients.

Keywords: Abdominal Compartment Syndrome, pregnancy, CVP line

INTRODUCTION

Compartment syndrome describes increased pressure within a muscle compartment of the arm or leg. It is most often due to injury, such as fracture, that causes bleeding in a muscle, which then causes increased pressure in the muscle. This pressure increase causes nerve damage due to decreased blood supply. The abdominal compartment syndrome represents the path physiologic consequence of a raised intra-abdominal pressure. ACS is defined as a sustained IAP >20 mm Hg associated with organ dysfunction/failure. Various clinical conditions are associated with this syndrome and include massive intra-abdominal or retroperitoneal hemorrhage, severe gut edema or intestinal obstruction, and ascites under pressure. One should always consider the abdominal compartment syndrome when confronted with acute circulatory failure with wide systolic-diastolic pressure variation and elevated filling pressures^[1]. However, relatively

view of the same and their orders were carried out. Emergency UGS abdomen scan taken and the findings are as follows: mild to moderate ascites noted. Patient was shifted to medical icu and was monitored. Next USG abdomen showed moderate hem peritoneum, also the presence of free fluid with internal echoes in sub hepatic, perisplenic regions and in bilateral paracolic gutters as well as in pelvis. Investigation repeated showed severe anemia with fall in Hb. 3 pint PRBS transfusion was done and Hb was monitored Q6h until stable. Surgery consultation was sought and they gave an impression of abdominal compartment syndrome and hence abdominal girth and intra-abdominal pressure was monitored regularly. CVP line was inserted on POD 2. Nephrology consultation was sought for decreased urine output, they gave an impression of transient oliguria. Cardiology consultation was sought to rule out LV dysfunction. ECHO was done and was found to have stable cardiac status. Next USG abdomen : organised echoes are noted in right paracolic gutter extending to the region of umbilicus and also in perisplenic area –could represent organised clots – has reduced compared to previous scan. No free fluid in the abdomen. Gradually, patient improved symptomatically, hence shifted out to ward after removing catheter and CVP line. Patient was noted to have discoloration over the left iliac fossa and left lumbar region which was managed with ichthammol glycerine and chymoral forte. Follow up USG abdomen: hematoma in the perihepatic, perisplenic and periumbilical region shows resolution and approximately measures 390ccc at present.

Per operative findings: dense adhesions between the rectus sheath and anterior abdominal wall. Both ovaries and tubes were adherent to the posterior surface of the uterus. Bowel adhesions were present to the posterior surface of uterus.

DISCUSSION

In the second and the third trimester of pregnancy, the uterus occupies a major part of the abdominal cavity, and in the supine position breathlessness and decreased blood pressure ("supine hypotension syndrome") are often seen^[3,4]. The expansion of intra-abdominal contents in the form of fluid or tissue is the fundamental cause of increasing IAP leading to the path physiology of IAH and ACS. Pregnancy, with a growing fetus and the increases in intra-abdominal fluid and tissue, could be considered a perfect storm for the development of IAH/ACS. Due to baseline increases in IAP, all critically ill obstetrical/gynecologic patients should undergo vigilant IAP monitoring. As intraabdominal pressure rises, progressive organ failure occurs. The kidneys and lungs are the most affected^[5]. The mortality rate associated with abdominal compartment syndrome is significant, ranging between 60% and 70%^[6,7,8].

CONCLUSION

At the cellular level of this syndrome, oxygen delivery is impaired, leading to ischemia and anaerobic metabolism. Vasoactive substances such as histamine and serotonin increase endothelial permeability; further capillary leakage impairs red cell transport; and ischemia worsens. As pressure rises, abdominal compartment syndrome impairs not only visceral organs but also the cardiovascular and the pulmonary systems; it may also cause a decrease in cerebral perfusion pressure. IAP can be easily monitored by measuring bladder pressure. Cheatham et al found abdominal perfusion pressure (APP) to be a much better predictor of end-organ injury than lactate, pH, urine output, or base deficit^[9]. Therapy should include fluid resuscitation and transfusion if needed, as well as surgical consultation. A comprehensive, evidence-based approach to the management of abdominal compartment syndrome that includes early use of an open abdomen has been shown to reduce mortality^[10]. A group in Taiwan has used laparoscopic decompression successfully in blunt abdominal trauma patients who have an IAP of 25-35 cm H₂O^[11]. The

timely diagnosis and appropriate management of ACS in this patient helped her to recover completely.

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