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Abdominal Compartment Syndrome Following Sigmoidopexy for Sigmoid Volvulus – Significant Role of Flatus Tube and NG Tube: A Case Report

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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Case Report

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ABSTRACT

The detrimental effects of intraabdominal HTN and abdominal compartment syndrome affect almost every systems by altering organ perfusion [1]. ACS is life threatening and is not very uncommon in our practice [2]. There is a clinical scenario of 70 yrs male with history of absolute constipation and abdominal distention with pain in abdomen. He was attended at Govt. hospitals ER and was diagnosed as volvulus sigmoid colon and immediate laparotomy with untwist of gut and sigmodopexy done. Closure of abdomen done without any abdominal drain tube and patient was attemped for extubation but not achieving adequate %spo2 and shifted to ICU with intubated

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state. Following night of operation patient abdomen was becoming tense and diagnosed ACS and immediate Flatus tube and NG tube inserted. Both tube kept *in situ* >48 hours and patients abdomen becoming soft and normal. In this scenario NG tube and per rectal flatus tube plays significant role in managing ACS.

Keywords: Abdominal compartment syndrome; sigmoidopexy; Flatus tube; organ hypoperfusion.

1. INTRODUCTION

If abdominal cavity is treated as closed fluid compartment the pressure within it obeys Pascal's hydrostatic law – when pressure is applied to contained fluid, the forces transmitted equally in all direction [3-5]. The pressure measured at any point within the cavity at any given time can be taken to represent intraabdominal pressure in the entire abdomen [1,6-8]. Intraabdominal HTN refers to sustained or repeated pathologic elevation of IAP >12 mm hg while abdominal compartment syndrome is defined as sustained IAP over 20 mm hg [with or without abdominal perfusion pressure (APP) < 60 mm of hg.] that is associated with new organ dysfunction [1,9].

2. CASE PRESENTATION

A 70 yrs male had a history of absolute constipation for 7 days with distended abdomen and pain for 2 days with this complaints he got admitted into a Government hospitals ER and diagnosed as a case of volvulus sigmoid colon and undergo immediate laparotomy through a long midline incision at hospitals evening session time. Sigmoidopexy was done. after operation patient anaesthetic recovery was delaying and abdomen becoming distended, extubatin attemped but not achieving adequate %SP02 and then patient in intubated state shifted in ICU. Day after evening of operation patient shifted to a private hospItals ICU and found tensed tender abdomen with raised intrabdominal pressure (avg. > 24 mm of hg) which was measured by measuring intravesical pressure and diagnosed as ACS. No abdominal drain tube was in situ and DRE reveals collapsed rectum. Immediate taping of abdomen by 10 cc syringe and then screening USG of abdomen was done and excuded any intraabdominal collection (e.g blood, reactive exudative fluid). A flatus tube (32 fr) introduced carefully through per rectum, proximal to rectosigmoid area and gush of air come out (Fig. 1). Flatus tube kept *in situ* on the consequence of raised intraabdominal pressure , pt develops bilateral lungs opacity with reduce air flow into lungs and increase fio2 demand in ventilator even after moderate raise of PEEP, his renal number also raised upto 2.3 mg/dl. Intense reassurance of patient with Gradual monitoring of ventilatory setup and starting of TPN, correction of dyselectrolytaemia, good coverage of antibiotics and other logistic supports of ICU, patients intraabdominal pressure reduced and become 4-6 mm of hg and other organ systems functioning his normal with a moderate SSSIs.

Fig. 1. Flatus tube

3. DISCUSSION

Abdominal compartment syndrome has its deleterious effects because of organs hypoperfusion and damage [1]. ACS specially affects Lungs, kidneys, Gut and also may affects all organ systems [2]. ACS can be diagnose by regular measuring of intravesical pressure by special transducer through vesical catheter and can be display on monitor 4-6 hrs interval [10]. NG tube and per rectal flatus tube can help to reduction of IAP [9,10].

4. CONCLUSION

simple introduce of continuous per rectal flatus tube and NG tube can significantly reduce intraabdominal pressure in case of sigmoidopexy ,though per operative abdominal drain tube cant be ignore.

5. LEARNING POINTS

Sigmidopexy increase IAP more rather than resection surgery.

Flatus tube and NG tube has significant role in ACS [9].

ACS compromise organ perfusion and may cause SSSIs (superficial surgical site infections) by compromising capillary vasculature in abdominal wall [11].

Early prediction and aggressive ventilatory and other critical care support (eg. TPN, intense fluid management, correction of dyseletrolytaemia, Antibiotics.) with vigilence can reduce the mortality rate though financial issues and adequate, proper counseling has significant role [12].

CONSENT

As per international standard or university standard, patient(s) written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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