

Abdominal Compartment Syndrome after Surgical Repair of Type A Aortic Dissection

Abstract

Abdominal compartment syndrome is associated with severe dysfunction of intra-abdominal and intrathoracic organs. Medical therapy, with the goal of reducing intra-abdominal pressure, leads to improvement in organ perfusion.

Keywords: *Abdominal compartment syndrome, aortic dissection, postoperative care*

Case Report

A 67-year-old female underwent surgical repair for acute Stanford Type A dissection. Ascending aorta was replaced with a tube graft (Cardiopulmonary Bypass Time 233 min, Aortic Cross Clamp Time 119 min). During the 3rd postoperative day, the patient developed an acute kidney injury, as well as elevated liver transaminase, was noted. Intra-abdominal pressure (IAP) measured through urinary bladder catheter was found to be 20–23 mmHg [Figure 1]. In 2006, World Society of the Abdominal Compartment Syndrome defined this syndrome as a condition where IAP is more than 20 mmHg (with or without abdominal perfusion pressure <60 mmHg) and is accompanied by organ dysfunction.

Postoperative abdominal compartment syndrome is not unusual and can be caused due to capillary leak, ischemia-reperfusion injury, and massive fluid resuscitation.^[1,2] To exclude mesenteric ischemia and visceral malperfusion syndrome, abdominal computed tomography angiography (CTA) was performed. The CTA revealed a dissected descending abdominal aorta extending to the right common iliac artery. The celiac trunk, the superior mesenteric, and the right renal artery

arose from the true lumen. The inferior mesenteric and left renal arose from the false lumen. A severe narrowing of the origin of the celiac trunk [Figure 2-red arrow] was observed, and the true lumen was markedly compressed by the false lumen [Figure 2-black arrow].

Taking this information into account, we deduced that the vessels although stenotic were patent and that an increase in IAP may further reduce arterial flow to the abdomen. We decided to pursue conservative management comprising of early initiation of renal replacement therapy, negative fluid balance, sedation, paralysis, GI tract decompression (nasogastric and rectal tubes, enemas, and neostigmine for

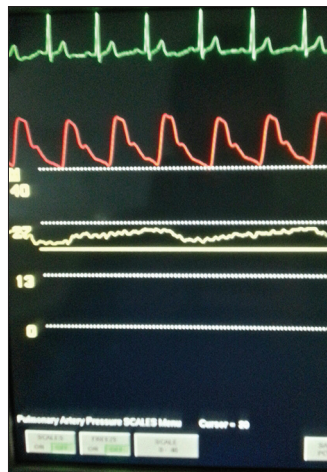


Figure 1: Intra-abdominal pressure measurement (via urinary bladder catheter)

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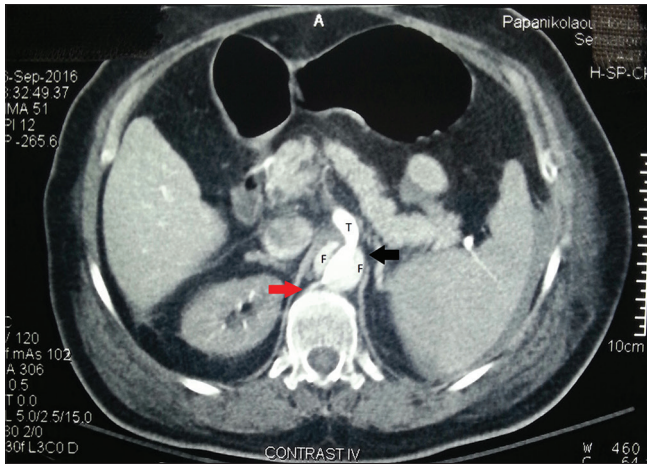


Figure 2: Celiac track. Narrowing of the origin (red arrow) true lumen-T compression by the false lumen-F (black arrow). Intestinal dilatation

bowel distension), and maintenance of higher abdominal perfusion pressure. The patient got progressively better and made a complete recovery.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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