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Case Report

Loss of domain leading to intra-operative cardiorespiratory arrest during open repair of a giant inguinoscrotal hernia and hydrocele

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ABSTRACT

We present the case of a 73-year-old man with a longstanding, giant inguinoscrotal hernia and hydrocele treated by an open approach, complicated intra-operatively by loss of domain leading to cardiorespiratory arrest. Surgery involved a midline approach by the general surgeons. Protruding viscera were mobilised, freed from adhesions, and returned to the abdominal cavity with closure of the internal ring, followed by reconstruction of the penis and scrotum by the plastic surgery and urology teams. Following abdominal closure, the patient developed severe cardiorespiratory instability attributed to large fluid shifts and increased intra-abdominal pressure due to loss of domain. The abdomen was therefore left open, and an ABThera negative pressure therapy system was employed. Two days later the abdomen was closed without tension. The remainder of the patient's post-operative recovery was unremarkable.

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Introduction

Giant inguinoscrotal hernias are uncommon in developed countries, though may present after years of neglect. Generally defined as a hernia which extends below the mid-thigh on standing, they are notoriously difficult to manage, with significant morbidity and mortality associated with corrective surgery due to a phenomenon known as loss of domain. We present the case of a 73-year-old man with a longstanding, giant inguinoscrotal hernia and hydrocele treated by an open approach, complicated intra-operatively by loss of domain leading to an abdominal compartment syndrome-like picture.

Case presentation

A 73-year-old man was admitted to A&E with acute bleeding from the scrotal skin on a background of a 4-year history of a giant inguinoscrotal hernia and hydrocele. He had no other significant past medical or surgical history. The patient lived alone and was independently self-caring. His only other complaint was urinary incontinence as a result of his penis being hidden within his enlarged scrotum.

Physical examination revealed a large, irreducible inguinoscrotal hernia and hydrocele, extending to the mid-calf. Testes were non-palpable, and penis retracted (Figure 1). Bowel sounds could be auscultated within the hernia mass. Source of bleeding was from dilated scrotal surface veins. He was mildly tachycardic, though haemodynamically stable. The patient received two units of packed red cells and a CT scan was requested. This demonstrated an extensive right-sided inguinal hernia containing normal small and large bowel loops, with no evidence of intestinal ischaemia. There was a large volume of free fluid along with an organising haematoma visualised within the right hemiscrotum. Testes were atrophic bilaterally (Figure 2a and b).

The patient's haemoglobin continued to drop—59 g/L at its lowest—despite receiving a total of 6 units of packed red cells. He underwent a gastroscopy to rule out any other sources of bleeding, which was negative for any acute findings. The need for surgery to prevent deterioration and/or perforation was re-discussed with the patient, and despite previous refusals, he agreed to go ahead with surgery.

Surgery involved a midline approach. Protruding viscera were mobilised, freed from adhesions, and returned to the abdominal cavity with closure of the internal ring. This was followed by reconstruction of the penis and scrotum using fasciocutaneous flaps by the plastic surgery and urology teams. A total of 3 kg of lymphoedematous scrotal tissue was excised (Figure 3a–c). The right testis was non-viable, and so was excised.

Intra-operatively he developed severe cardiovascular instability with atrial fibrillation (AF) with rapid ventricular response. This was attributed to large fluid shifts—a total of 12 litres of fluid drained from the scrotum, and increased intra-abdominal pressure secondary to loss of domain. He was

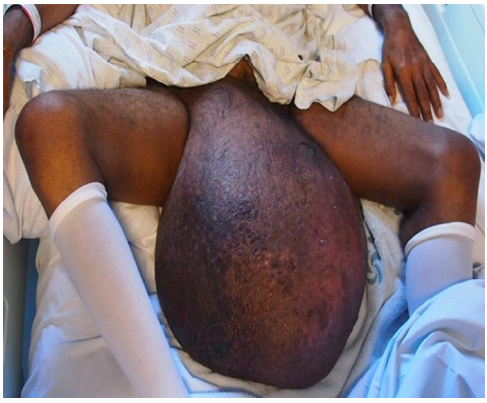

Figure 1. Clinical examination findings.