

Acute Aortic Thrombosis after Radical Cystectomy

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Abstract

The occurrence of an acute lower limbs ischemia after pelvic surgery is very rare. We report a third case in the literature of acute aortic thrombosis in the immediate postoperative radical cystectomy. This complication can be fatal due to ischemia-reperfusion or extension of the thrombus. Understanding the risk factors will prompt high-risk patients to have a vascular surgery consultation, and take precautions including intra-operative hemodynamic stability and adequate position.

Introduction

After a pelvic surgery, a variety of Neuro-vascular complications may occur [1-6]. Multiple risk factors can contribute to these events. The acute lower limbs ischemia is an uncommon condition, get it can entail severe morbidity and mortality that requires a prompt diagnosis and emergent treatment. We report a case of aortic thrombosis following a radical cystectomy. To our knowledge, this is the third case in the literature to occur post pelvic surgery.

Case Description

We report a case of a 55-year-old male with a past medical history of chronic bronchitis, tobacco use and intermittent claudication without hypertension or diabetes mellitus. He had a transurethral resection under epidural anesthesia two months ago without complication. Preoperatively, he had normal neurological and cardiac examinations including electrocardiogram. The laboratory findings showed a mild thrombopenia of 135 000/ μ L and hemoglobin of 14 g/dL without any other abnormalities. After inducing general anesthesia, an invasive arterial catheterization was performed with standard monitoring. He underwent a laparoscopic radical cystectomy with a large lymph node dissection and trans-ileal cutaneous urostomy (Bricker). The patient was properly placed in the lithotomy position and steep Trendelenburg for 5 hours and 15 minutes. The blood loss was estimated 200 mL. The fluid administration was 10 ml/kg/h. Systolic blood pressure remained above 100 mmHg (invasive pressure). Postoperatively, analgesia was started with non-steroidal anti-inflammatory drug, Acetaminophen and Nefopam. Immediately after extubation, he experienced pelvic and bilateral groin pain. Initially, we thought that this symptom was related to inadequate analgesia. So, we conducted a morphine titration. The patient was partially satisfied but with a weakness in the lower limbs, which were cold and livid. The femoral pulses were not palpable. The Doppler showed an extensive occlusion of the aorta until the femoral arteries and the patient was taken back to the operating room at the sixth postoperative hour. The abdominal exploration did not show any extrinsic compression of the iliac arteries and the aorta. The vascular



Figure 1: In the abdominal CT scan before the intervention, the aorta is identified with calcifications.

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surgeon proceeded with a Fogarty catheterization of the left and right femoral arteries. A fresh thrombus was successfully removed from the right, but revascularization of the left was incomplete. The lower extremity pulses were palpable on the right but not on the left. Four hours after, the patient was anuric and exhibited arrhythmia which we have attributed to the secondary hyperkalemia (6.2 mmol/L) with metabolic acidosis (pH 7.15) caused by ischemia-reperfusion. A prompt treatment was conducted but the evolution was fatal. The patient died of a malignant arrhythmia associated with a refractory acidosis. To understand this dramatic outcome, we analyzed the medical records. We discovered that this patient had complained of intermittent claudication of the lower limbs for a few months prior to the intervention. The abdominal CT scan (Figure 1) had revealed evidence of calcification on the level of the aorta.

Discussion

According to the medical literature, our case is the third acute lower limbs ischemia to occur in the immediate postoperative pelvic surgery [7,8]. The first one was after low anterior resection for rectal cancer [7] and the second after urologic intervention [8]. In the first case [7], the diagnosis was made on the postoperative day one because signs (weakness and sensory function diminution) were originally attributed to the patient's epidural analgesia. The blood flow was surgically restored after an axillobifemoral bypass graft, but the patient did not ambulate by reason of motor and sensory loss. In the second one [8], the diagnosis was made much sooner than in the first case, within five hours. The blood flow restoration was obtained after Thromboembolectomy. However, the patient stood but with assistance. In our observation, the diagnosis was made within six hours. The sometimes dramatic consequences such as neurologic sequelae [7] or fatal outcome as in our patient's case lead to the recommendation of a meticulous cardiovascular evaluation during the pre-anesthetic consultation and to precociously address the patients presenting signs of obliterating arteriopathy of the lower limbs to the vascular surgery consultation. Many risk factors have been suspected of leading to the aortic thrombosis such as male gender, cancer, chronic renal insufficiency, diabetes, smoking, hypercoagulopathy, hypertension, peripheral artery disease, coronaropathy and radiation therapy. Furthermore, aortic thrombosis can be associated with hypovolemia or prolonged intra-operative hypotension, prolonged lithotomy and Trendelenburg position, the length of the surgical procedure and arterial injuries caused by retractors and lymph node dissection [7-14]. As in our case, it is especially the association of the coeliosurgery, hemodynamic consequences, the steep Trendelenburg position and non-optimal arterial pressure level which contributes to this complication. Considering the hemodynamic repercussion that coeliosurgery can generate, it would be more suitable to adopt a conventional technique with high-risk patients of aortic occlusion. It would also be prudent to palpate the peripheral pulses of the lower extremities after placement, during and at the end of the intervention; without ignoring the other symptoms of acute ischemia (Pulselessness, Pain, Pallor, paresthesia and paralysis) [8,15].

In conclusion, at this kind of patient, firstly a preliminary evaluation of the Arteriopathy is primordial (nature, degree, repercussion), secondly the anesthetist must take precautions including adequate position, avoid intra-operative hypotension and look out for acute ischemia signs.

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