Aortic abdominal dissection after retroperitoneal laparoscopic paraaortic lymphadenectomy

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1. Introduction

Paraaortic lymphadenectomy is a surgical procedure commonly used in gynecologic oncology to assess paraaortic lymphatic involvement. Minimally invasive surgery is the preferred approach to perform this surgical staging (Cibula et al., 2018; Uccella et al., 2016; Lu et al., 2016). Nevertheless, intraoperative and postoperative morbidity has been described in around 8% of these procedures (Leblanc et al., 2016). The most frequent intraoperative complications are vascular injuries, occurring up to 5% of cases. Vascular injuries can be severe complications which can even require conversion to laparotomy when major vessels are involved (Leblanc et al., 2016; Petinicholas et al., 2017). Ureteral injuries and bowel obstruction are infrequent complications that have also been reported in paraaortic lymphadenectomy (Leblanc et al., 2016). Median and long-term complications associated to aortic staging are mainly lymphoceles and lower limb lymphedema, which can occur in approximately 20% and 5% of patients, respectively (Petinicholas et al., 2017; Frost et al., 2017).

Up to our knowledge there are no cases of acute aortic dissection after laparoscopic paraaortic lymphadenectomy described in the literature. We report the first case of acute aortic abdominal dissection, as a rare complication after retroperitoneal laparoscopic paraaortic lymphadenectomy.

2. Case report

We present the case of a 65-year-old woman with a body mass index of 18.1 kg/m², and previous history of hyperlipidemia and hypertension treated with Spironolactone and Altizide (25 mg/15 mg per day). She underwent a bilateral adnexectomy and hysterectomy by an infraumbilical laparotomy outside our hospital for suspicion of uterine carcinosarcoma in preoperative magnetic resonance imaging (Fig. 1). She was referred to our comprehensive cancer center after diagnosis of endometrial carcinosarcoma with a myometrial invasion over 50% in the surgical specimen. After discussion at the tumor board, a laparoscopic surgical staging was recommended.

Retroperitoneal laparoscopic pelvic and paraaortic lymphadenectomies were performed. The operative time was 160 min and the blood loss was 20 ml. There were no complications during the surgical procedure. At the end of the surgery, we noted a slightly blue coloration of the aorta that was interpreted as an hematoma of the adventitia (Fig. 2). In the recovery room, the patient presented a compromise of dorsiflexion of the right foot as well as a sensory loss of the dorsal surface of the right foot. Further investigations showed a thrombus in the SMA which led to an isolated femoral ischemia.
the foot. Our first diagnosis was an intraoperative compression of the right external popliteal nerve due to a malposition during surgery. A few hours after the surgery, these symptoms disappeared, and the patient was discharged from hospital at day 1 after surgery. Seven days later, the patient went to the emergency department for stabbing abdominal and bilateral groin pain.

At her admission, blood pressure was 133/80 mmHg, body temperature was 36.7°C, heart rate was 106 beats/min, respiratory rate was 22 breaths/min, and oxygen saturation was 98% on room air. At clinical examination, she was alert and oriented, without acute distress. Neurologic examination was normal. Bilateral femoral, popliteal, posterior tibial and dorsalis pedis pulses were preserved. There were no abnormalities in electrocardiogram. Laboratory results were unremarkable unless for an increased C-reactive protein of 128.7 mg/l, a decreased hemoglobin of 8.7 g/dl and alteration on hepatic function (aspartate aminotransferase 79 UI/l and alanine aminotransferase 400 UI/l, gamma-glutamyl transferase 529 UI/l, lactate dehydrogenase 80% of the patients presenting this condition (Gawinecka et al., 2017). Long-term hypertension, old age, arteriosclerosis, dyslipidemia, and potential iatrogenic procedures such as cardiac catheterization or aortic cross-clamping during surgery, have been identified as risk factors for aortic dissection (Elsayed et al., 2017). Our patient had a long-term hypertension treated with dual antihypertensive therapy. Hypertension is the most important risk factor for aortic dissection, present in about 80% of the patients presenting this condition (Gawinecka et al., 2017). Moreover, as noted in Fig. 2, the patient had atheromatous aortic plaques. Arteriosclerosis is known to be more common in patients with type B dissection, which was the case of our patient (Gawinecka et al., 2017). We hypothesize that the presence of multiple risk factors in our patient -age, hypertension and arteriosclerosis- added to a direct insult to the aorta such as paraaortic lymphadenectomy could have led to traumatize aortic intima and cause an aortic dissection.

Retrospective evaluation of this case suggests that the aortic dissection probably occurred during the surgery, which could explain the slightly blue coloration of the aorta at the end of the surgery. The immediate postoperative symptoms of the right foot could probably be explained by a transient ischemia. An immediate postoperative
contrast-enhanced computed tomography could have permitted an earlier diagnosis. Fortunately, our patient presented an uncomplicated type B aortic dissection, which could be managed with elective surgery. In uncomplicated aortic dissections, it is recommended to perform the surgical repair during the subacute phase, as it has been demonstrated that those performed in the acute phase have a higher complication rate. Furthermore, aortic plasticity, or capacity of favorable remodeling, seems to be preserved through subacute phase (Alfson and Ham, 2017).

In conclusion, even if severe complications of paraaortic laparoscopic staging are rare, they can be life-threatening for the patients. Aortic dissection has to be considered as a potential complication after paraaortic lymphadenectomy. It should be part of the differential diagnoses in patients with high-risk factors presenting intense abdominal and groin pain after retroperitoneal laparoscopic paraaortic lymphadenectomy, and a contrast-enhanced computed tomography with an arterial acquisition has to be performed in case of suspicion. Failure to diagnose an acute dissection and delay of specific treatment could lead to a fatal patient outcome. Consequently, this kind of procedures should be performed at referral centers.

Fig. 3. Pre and post-operative CT findings.
Patient consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

Disclosure

The authors have no financial disclosures.

Contribution

Martina Aida Angeles: Conceptualization, data curation, methodology, writing-original draft.

Olivier Meyrignac: Conceptualization, data curation, methodology, imaging processing, writing-original draft.

Carlos Martín-Gómez: Conceptualization, data curation, methodology, writing-original draft.

Amel Daboussi: Conceptualization, project administration, methodology writing - review.

Jean Segal: Conceptualization, data curation, methodology, writing-original draft.

Mathilde Del: Conceptualization, data curation, methodology, writing-original draft.

Gwénaël Ferron: Conceptualization, project administration, methodology writing - review.

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