

Iatrogenic Iliac Artery Injury

Vascular [complications](#), which we rarely encounter during lumbosacral stabilization surgeries, can be life-threatening if they are not treated quickly. These arterial injuries occur during [screw insertion](#). The presentation with the [common iliac artery](#) injury during the decortication process in [transverse processes](#) with 'Pedicle awl' will be the first case in the literature as far as Koban et al. know.

Iatrogenic vascular laceration is a rare but well-known complication of posterior lumbar disc surgery (PLUDS).

In a study, the incidence of iatrogenic major vascular injuries in [lumbar discectomy](#) was 1 in 1249 operations (0.08%) ¹⁾

Literature review

Akhaddar et al. performed a review of the literature to evaluate the management of this life-threatening complication. A total of 54 papers containing 100 cases of vascular laceration following PLUDS between 1969 and 2018 were analyzed with their representative case with a left common iliac artery (CIA) laceration during a posterior approach for a far lateral L4-L5 disc herniation. There were 54 females and 35 males (12 cases with unreported gender) with ages ranging from 20 to 72 years. The most commonly involved spinal level was L4-L5 (n = 67). The duration from the causative surgery to the symptom of the vascular injury ranged from 0 to 50 h (mean, 7.3 h). Only 47.3% of patients underwent postoperative imaging and the most commonly injured vessel was the CIA (n = 49). Vascular repair, open surgery, and/or an endovascular procedure was performed in 95 patients. The most frequent complications were [deep venous thrombosis](#) in the leg and pulmonary emboli, where a complete recovery was seen in 75.3% of patients. The [mortality](#) rate was 18.8%. In hemodynamically unstable cases, an emergent exploratory [laparotomy](#) was life-saving even without vascular imaging, although angiography with/without endovascular intervention may be used in stable patients ²⁾.

Sealing of common iliac artery or abdominal aortic lesions as a complication of lumbar-disc surgery with a stent graft is effective and is suggested as an excellent alternative to open surgery for iatrogenic great-vessel injuries, particularly in critical conditions ³⁾

Case reports

Bojarski et al. presented the case of a 57-year-old patient who received surgery for critical degenerative lumbar spinal stenosis on the L4-L5 level. The diagnosis was based on strong right sciatica and [neurogenic claudication](#). A bilateral laminotomy from the right and a [microdiscectomy](#) were performed. During surgery, no bleeding from the intervertebral space was observed and [blood pressure](#) was low but stable from the beginning. After surgery, the patient was in good general and neurological condition, without preoperative right-sided [sciatica](#). Within a few hours after the operation, the circulatory and respiratory systems were stable with normal saturation and the patient did not report shortness of breath. Paleness of the skin and mucous membranes was observed. Follow-up morphology tests performed at 6 and 10.5 hours after surgery showed a decrease in the

level of erythrocytes. The patient had palpable tenderness in the left hypochondriac region. Suspicion of bleeding into the abdominal cavity from arteries or iliac veins was stated. Immediately, an angio-computed tomography (CT) of the abdominal cavity was performed, which confirmed the presence of a hematoma in the peritoneal space and a pseudoaneurysm of the left iliac artery. The patient was urgently transported to the Vascular Surgery Clinic, where a Y-type covered stent was implanted percutaneously into both iliac arteries. After the procedure, there were symptoms of ischaemia in the left lower extremity and intermittent claudication. A Doppler study showed signs of narrowing at the stent level on the left side. The patient was reoperated after a CT check-up and a second stent was implanted into the left iliac artery, which allowed vasodilation and true flow in the artery.

Suggest that both the neurosurgeon and anaesthesiologist should have been aware of the possibility of such a rare but life-threatening complication as iliac vessel damage during lumbar discectomy surgery. A quick diagnosis and implementation of a proper procedure reduces the high mortality rate caused by this complication. In cases of a sudden unjustified drop in blood pressure during lumbar discectomy, an immediate laparotomy should be performed to find and repair the site of laceration of a vessel. In patients who are stable hemodynamically, performing an angio-CT function of the abdominal cavity is suggested and the damaged artery should be treated with a covered stent ⁴⁾.

LUMBOSACRAL DECOMPRESSION AND STABILIZATION SURGERY WAS PERFORMED IN A 57-YEAR-OLD PATIENT WITH L1-S1 [Spinal stenosis](#) and [scoliosis](#). After the stabilization process was completed; while decorticating the transverse processes with 'pedicle awl', the tool fell to the [paravertebral](#) region and then active arterial hemorrhage was observed on the surgical site. [Hemostasis](#) was achieved in the surgical field, but a rapid progressive drop was observed in the patient's blood pressure. The surgery was quickly terminated and the patient was turned to the supine position. Vascular surgeons opened the abdomen with midline laparotomy and approximately 2600 cc hematoma was evacuated from the retroperitoneum. The 5 mm defect in the left common iliac artery was repaired by primary suturing. The patient had no problem in postoperative follow-up and was discharged on the 10th postoperative day.

In these complications that we rarely encounter in lumbosacral stabilization surgeries, perioperative findings should be evaluated well, and rapid intervention should be made in cases where vascular injury is considered. One must remember that every tool used during surgery can be dangerous even in an experienced hand ⁵⁾.

A 31 year old woman was admitted to the neurosurgery department with L5 right-sided sciatica and an associated radiculopathy, and paraesthesia of the first toe of the right foot. She had previously undergone surgical correction of a L4 - L5 lumbar disc herniation, as well as a left oophorectomy and chemotherapy for ovarian neoplasia. A right L5 hemilaminectomy associated with right L5 - S1 foraminotomy and L5 - S1 discectomy was performed with the patient in the ventral position. The procedure was carried out without any apparent complications. In the first three post-operative days the patient complained persistently of orthostatic hypotension and a drop in haemoglobin was observed. Computed tomography angiography revealed what appeared to be a complete transection of the right common iliac artery and vein, with active haemorrhage, and a large pseudoaneurysm. Immediate surgery was carried out with reconstruction consisting of a 9 mm Dacron graft interposed in the right common iliac artery, as well as ligation of the right common iliac vein, which was not amenable to repair. The post-operative period was uneventful. The patient was discharged on day 13 with normal lower limb pulses and mild oedema of the right lower limb, controlled with elastic

compression stockings.

Iatrogenic injuries of the large abdominal vessels during spinal surgery is rare but serious. Close patient surveillance and remaining vigilant for these life threatening vascular lesions are crucial in the peri-operative period of spinal surgery ⁶⁾.

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