Management of Proximal Iliac Artery Injury during Lumbar Discectomy with Stent Graft

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Iatrogenic vascular injuries during lumbar disc surgery may occur rarely but they are serious complications, which can be fatal without appropriate management. Prompt diagnosis and management of these complications are imperative to prevent a desperate outcome. A 72-year-old female with proximal left common iliac artery iatrogenic injury during lumbar discectomy was successfully treated by percutaneous deployment of a stent graft in an emergency setting. Postprocedural angiogram demonstrated complete exclusion of the iliac artery laceration. The patient became hemodynamically stable. Two weeks later she complained of vascular claudication. Follow-up angiography revealed decreased arterial flow in the opposite common iliac artery. An additional kissing stent was inserted into the right common iliac artery and the symptoms of vascular claudication disappeared. Endovascular stenting offers a safe and effective method for the treatment of an iatrogenic arterial laceration, particularly in a critical condition. But, the contralateral iliac arterial flow should be kept intact in case of proximal iliac artery injury. Otherwise, additional treatments may be needed.

Key Words: Vascular injury · Discectomy · Lumbar disc surgery · Stent.
Major vessels, which are in proximity to the vertebral column, are at risk of intraoperative injury because of their location. The injuries predominantly associated with upper lumbar surgery are those to the aorta and inferior vena cava. However, iliac vessel injuries are more common in lower lumbar surgery.

Traditionally, vascular injury complicating lumbar discectomy was treated by direct surgical repair of the damaged vessels. Although the current surgical outcomes are considered good, surgical repair of traumatic or postoperative vascular injury may result in considerable blood loss and more complications.

Endovascular technique is an alternative method of treating vascular injury following lumbar discectomy. Endovascular techniques that introduce stent graft to exclude AVF or leakage following lumbar discectomy have shown an increase in technical success rates and reduction in complication rates. The advantages of endovascular techniques in patients are the absence of a lower abdominal incision, minimal blood loss and a reduction in the depth and length of anesthesia, permitting shorter hospitalization compared with conventional surgery. However,
proper facilities and an assortment of stent graft and other materials must be available. In our case, profuse bleeding occurred from the disc space at the end of operation. Fortunately, an angiographic evaluation and proper treatment of the iliac artery injury could be carried out in the emergency setting. The defect was apparently located on the proximal left common iliac artery. The intention was to seal the artery injury using a stent graft. But, another problem was the proximity between the injury site and aortic bifurcation. The possibility of luminal compromise of the contralateral common iliac due to the proximal end of the stent graft was a matter of concern. A careful employment of the stent graft at the proximal left common iliac artery was done, and not only complete sealing of the leakage but also good flow in the bilateral common iliac arteries were revealed.

Many authors advocate protection of the contralateral common iliac artery during stent placement in the proximal common iliac artery. Spinosa et al. strongly recommended that, if a stent is placed at the origin of a common iliac artery, a stent should also be placed in the contralateral common iliac artery, even if it is normal. It is proposed that these “kissing stents” will prevent compromise of the contralateral iliac artery. On the other hand, Smith et al. reported that contralateral protection during stent placement in a proximal common iliac artery was not mandatory.

Although an immediate postoperative angiography demonstrated good flow in the bilateral common iliac arteries, delayed stenosis of the contralateral iliac artery occurred in our case. Thrombosis around the proximal end of the stent graft was assumed to be the cause of the delayed contralateral iliac artery stenosis.

**CONCLUSION**

In conclusion, we report a case of iatrogenic proximal iliac artery injury successfully treated by endovascular stents.

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