ELSEVIER

Case Report

Lumbar Arterial Bleeding Treated with Endovascular Aneurysm Repair: A Report of 4 Patients

Jun Kawachi,[1] Naoko Isogai,[1] Rai Shimoyama,[1] Katsunori Miyake,[1] Ryuta Fukai,[1] Hiroyuki Kashiwagi,[1] Takaaki Murata,[1] Tomoki Nishida,[1] Hidehiko Nakano,[2] and Hidemitsu Ogino,[1] Kamakura, Kanagawa, Japan

Background: Lumbar arterial bleeding is a severe condition. Surgical exploration is not indicated because of its rich collateral flow. Transarterial embolization (TAE) is reportedly effective, but there have been cases of failure. It may be a time-consuming procedure for patients with multiple bleeding sources or those with poor vital signs. In this case series, we used endovascular aneurysm repair (EVAR) instead of TAE.
Method: In this case series, we described 4 male patients (2 with traumatic injury, 1 with iatrogenic injury, and 1 with drug-induced hypocoagulability) with lumbar arterial bleeding. The reasons we chose EVAR are because 2 patients had poor vital signs, one patient was a technically difficult case for selective cannulation, and one patient had accompanying aortic dissection.
Result: In all patients, EVAR was performed successfully, and hemostasis was obtained although one patient died of pneumonia on postoperative day 23.
Conclusions: EVAR is an effective alternative for lumbar arterial bleeding although TAE is a first choice of treatment.

Retroperitoneal bleeding is a life-threatening condition caused by aortic aneurysm rupture, common iliac aneurysm rupture, bleeding from the kidney or adrenal gland, and lumbar artery bleeding.[1] Trauma is a major cause of lumbar arterial bleeding, but other causes include iatrogenic injury and rupture of a lumbar arterial aneurysm.[2,3] Transarterial embolization (TAE) is reportedly effective for treating lumbar arterial bleeding,[4,5] but there have been cases of failure. In addition, TAE may be inadequate for patients with multiple arterial injuries or poor vital sign because it takes a long time to complete TAE. In recent years, endovascular aneurysm repair (EVAR) has become more common for treating aortic aneurysm. In this report, we describe 4 patients with lumbar arterial bleeding successfully treated with EVAR, which was able to be performed quickly.

CASE REPORTS

The patient or next of kin provided permission to publish the features of these cases, and the identities of the patients have been protected.

Case 1

A 77-year-old man fell down and bruised his back. He was admitted to another hospital and diagnosed as having

Conflict of interest: No conflicts of interest declared.
This research did not receive any specific grant from funding agencies in the ''public, commercial, or not-for-profit sectors.''

[1]Department of Surgery, Shonan Kamakura General Hospital, Kamakura, Kanagawa, Japan.
[2]Department of Emergency, Shonan Kamakura General Hospital, Kamakura, Kanagawa, Japan.
Correspondence to: Jun Kawachi, Department of Surgery, Shonan Kamakura General Hospital, 1370-1,Okamoto, Kamakura, Kanagawa, Japan; E-mail: jkawachi@d7.dion.ne.jp

Ann Vasc Surg 2018; ■: 1.e1–1.e5
https://doi.org/10.1016/j.avsg.2017.12.018

Manuscript received: September 17, 2017; manuscript accepted: December 21, 2017; published online: ■ ■ ■

Fig. 1. Case 1 angiography: extravasation almost disappeared after EVAR (*arrow*).

fractures of the left transverse process of the lumbar spine from the first to fifth vertebrae and a left retroperitoneal hematoma. On the next day, he was transferred to our hospital because of unstable vital signs. His medical history included hypertension and cerebral infarction. He had been taking warfarin, amlodipine, and olmesartan medoxomil. On arrival, his blood pressure was 65/44 mm Hg with a heart rate of 111 beats/min. He had a distended abdomen with mild tenderness and a knocking pain in his left back. Laboratory test results showed a hemoglobin level of 6.7 mg/dL (reference range, 11.0–15.6 mg/dL) and platelet count of $8.3 \times 10^4/\mu L$ (reference range, $12.4–13.5 \times 10^4/\mu L$), and the prothrombin time-international normalized ratio (INR) was prolonged (3.23). The contrast-enhanced computed tomography (CT) scan showed extravasation in the area of the retroperitoneal hematoma. The emergent angiogram showed extravasation from the third left lumbar artery. We attempted to perform TAE. Although the guidewire went into the lumbar artery, the microcatheter could not pass through the orifice. Therefore, EVAR was performed, and the extravasation almost disappeared by using 3 aortic extenders (23 × 33-mm Gore® Extender®; WL Gore & Assoc.) (Fig. 1). We observed the complete disappearance of extravasation on the contrast-enhanced CT scan 2 days later (Fig. 2). He was transferred to another hospital on postoperative day 45 for rehabilitation.

Case 2

A 65-year-old man was found unconscious lying down in his yard; subsequently, he was transported to our hospital. On arrival, his blood pressure was 83/54 mm Hg, and heart rate was 61 beats/min. He had tenderness in his left back. No anemia or other abnormalities were indicated by the blood test results. The contrast-enhanced CT scan showed a right retroperitoneal hematoma with extravasation of contrast media and abdominal aortic dissection. He was also diagnosed as having fractures of the right transverse process (L1–L4), left transverse process (L3 and L4), lumbar spine (L3, burst fracture), right distal clavicle, right scapula, and left multiple ribs, as well as an acute subdural hematoma and right hemothorax. The emergent angiogram showed infrarenal aortic dissection and extravasation from the right second lumbar artery. Owing to aortic dissection, we chose to perform EVAR (MT231214 + PXC21200J; Gore Excluder) instead of TAE. After the procedure, the dissection and extravasation disappeared (Figs. 3 and 4). He was discharged on postoperative day 65 with home visiting care because of aphasia and disuse atrophy.

Case 3

A 62-year-old man was referred for surgery because of vital signs indicating shock after percutaneous coronary intervention. He had chronic renal failure and started hemodialysis because of deterioration of his transplanted kidney. He was taking prasugrel hydrochloride, aspirin, and carvedilol. His blood pressure was 70/46 mm Hg with a heart rate of 105 beats/min. He had mild tenderness in his left abdomen. The contrast-enhanced CT scan showed a retroperitoneal hematoma on his right side with extravasation of contrast media. Emergent angiography was performed. The aortogram showed extravasation from the left first lumbar artery. Selective cannulation was attempted, but his blood pressure decreased to 50 mm Hg. We changed the procedure from TAE to EVAR (iliac leg extender, PLC161000 J; Gore Excluder). The first to fourth lumbar arteries were covered, and extravasation disappeared. The patient was discharged on postoperative day 9 without any complications.