2023　The report of two cases of iliac artery perforation during EVT

(introduction)

The iliac artery perforation during the endovascular therapy is a rare complication.

But, once it will occur, the result can be catastrophic. We would like to report our two cases of iliac artery perforation in which we managed to bail out, and share them with everyone.

(Case 1)　64 y/o male　left external iliac artery occlusion

We started our procedure by cross over approach bia contralateral common femoral artery. We inserted guiding catheter and manipulated the guide-wire with Corsair PV. Unfortunately, the first wire had advanced to undesirable direction. We performed the re-wiring with second wire by the guidance of IVUS. The IVUS revealed that the first wire was outside of the vessel. We caused the vessel perforation with extravasation. We performed the hemostasis by the balloon tamponade with the OTW-balloon(Sterling OTW(5.0mm*20mm)). While doing the hemostasis, we continued manipulating the wire(Astato 9-12) toward the distal true lumen. Finally, we managed to lead the wire into the distal true lumen.After 25 minutes balloon tamponade, we check the angiogram, which showed the extravasation had disappeared.

(Case 2)　59 y/o　male　right common iliac artery occlusion

This patient had the past medical history of Aortic dissection(stanford B) which caused　Dissecting aneurysm of the aorta.

We started our procedure by ipsilateral retrograde approach bia ipsilateral common femoral artery. We inserted guiding catheter and manipulated the guide-wire with Corsair PV, but it advanced to the subintimal space and reentered into the true lumen of the terminal aorta far from the bifurcation. We tried to do the rewiring into the true lumen by the guidance of the IVUS. Finally, we managed to do it, and then performed pre-dilatation, and deployed the balloon expandable stent. The angiogram showed the pooling of contrast media out of the stent. We waited and saw for 15minites, but it was almost unchanged. So, we finished our procedures.

A few hours after the patient came back to his room, he complained of severe back and abdominal pain. We performed the contrast CT, which revealed the enlargement of subintimal space from abdominal aorta to iliac artery with the extravasation to peritoneal cavity. So, we decided to perform the EVAR emergently in order to rescue him. At first, we thought that the bleeding had occurred at his common iliac artery, but we could not succeed the hemostasis by balloon tamponade at this site. So, we decided to perform the EVAR. We managed to complete the hemostasis. Finally, we succeeded to rescue him.

(discussion)

The Iliac artery rupture and perforation is a rare complication of EVT. It is reported that the incidence of vessel rupture of iliac lesion was 0.8%.(Iliac artery rupture during balloon dilatation: Ann Vasc Surg. 2003;17:306-314). Treatment of it includes aggressive reversal of anticoagulants, balloon tamponade of the vessel, and use of covered stents. Surgery may be necessary if hemorrhage cannot be controlled with these measures.

In the case 1, the lesion had the heavy calcification, which caused the guidewire perforation. The successful re-wiring into true lumen by the guidance of IVUS and the plaque sealing by balloon tamponade lead to successful hemostasis.

In the case 2, the connection of subintima at terminal aorta which made by our initial procedure caused the leakage of blood into his dissecting aneurysma and the later vessel rupture and so, we needed to perform the stent graft deployment in order to acquire complete hemostasis.

(conclusion)

We experienced two cases of iliac artery perforation during EVT, and succeeded to bail out it. We would like to report our two cases, and share them with you.