

Popliteal Artery Bleeding Pseudoaneurysm

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BACKGROUND

A 55 year old male presented to the Emergency Department with pain and swelling of his right knee. He had a relevant history of seroma drainage in the area of the right medial knee, status post bypass graft with muscle flap overtop, with a recent Prevena VAC removal from the area. By laboratory testing, there were no signs of infection. On a physical exam, he had a small amount of bleeding from the old incision site. He had been seeing the wound clinic on a weekly basis and had a home health nurse for care of right lower extremity cellulitis. A soft tissue ultrasound was ordered in the area of the patient's symptoms, which found a collection that was suspicious for pseudoaneurysm. A selective arteriogram of the right lower extremity was emergently performed as a minimally invasive approach to control the bleeding from the pseudoaneurysm. A Viabahn stent was placed into the bypass graft, which successfully treated the lesion.



Figure 1

IMAGING

Ultrasound of the distal right medial knee demonstrated arterial waveform with turbulent, bidirectional flow shown on Doppler suggestive of pseudoaneurysm (Figure 1), with a neck that measured approximately 1.9 cm.

Arteriogram of the right lower extremity showed bleeding from a pseudoaneurysm distal to the anastomosis or at the anastomosis of a previously placed bypass graft (Figure 2). A 6 x 100 Viabahn stent followed by a 7 x 55 Viabahn stent was deployed into the bypass graft and then gently angioplastied. Post treatment, bleeding from the pseudoaneurysm had ceased (Figure 3).

DISCUSSION

Popliteal artery aneurysms are the most common peripheral arterial aneurysm. These can be categorized as either true aneurysms or "false" aneurysms, which are also known as "pseudoaneurysms." True aneurysms of the popliteal artery lumen are usually associated with degenerative changes and are by far the more common type of popliteal aneurysm. Pseudoaneurysms typically result from iatrogenic causes such as direct catheterization or surgery, infection, or trauma. The primary morbidity associated with popliteal aneurysms is acute thrombosis.

Treatment involves percutaneous puncture or a small cutdown of either the Superficial Femoral Artery or Common Femoral Artery. Anatomic considerations for endovascular repair with a stent-graft includes at least two centimeters of normal caliber proximal and distal segment to act as "landing zones" for the graft. Lack of significant vessel tortuosity is also preferred. Grafts are more likely to fail in patients who frequently induce flexion of their knee joint, such as gardeners and roofers, and those who do not or cannot adhere to antiplatelet therapy following the procedure. The graft chosen may include devices such as a Viabahn endoprosthesis, which is made of polytetrafluoroethylene (PTFE) with a nitinol exoskeleton.



Figure 2

Figure 3

REFERENCES

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