

# Management of traumatic profunda femoris laceration using fibered coil embolization

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**Patient History:** A 19-year-old male presented to the emergency department with massive hemorrhage from an upper thigh laceration sustained while cutting car tires with a box cutter. The patient had no significant past medical history and was otherwise healthy with normal coagulation.

**Presentation and Diagnosis:** Initial examination revealed active bleeding from the thigh laceration that was temporarily controlled with direct manual compression. However, proximal control proved challenging, making deep wound assessment difficult. Due to the wound's location and severity, there was initial concern for possible superficial femoral artery (SFA) involvement. A CT angiogram (CTA) was performed for precise vascular mapping, which revealed active contrast extravasation from a muscular branch of the profunda femoris artery with no involvement of the SFA (Fig. 1).

**Procedure Description:** Given the CTA findings confirming a profunda branch vessel injury, an endovascular embolization approach was selected. The procedure was performed using a contralateral approach to optimize access to the target vessel. Initial angiography confirmed active extravasation from a muscular branch of the profunda femoris artery. A microcatheter was carefully advanced to the site of injury, positioning it as close as possible to the laceration site. The vessel appeared to be an end vessel, with no visualization of the distal segment beyond the injury point (Fig. 2). Five Nester® 2 x 2 fibered pushable microcoils were delivered via saline injection at the site of injury to achieve immediate, complete hemostasis. Post-embolization angiography demonstrated successful occlusion with no residual extravasation (Fig. 3).

**Outcome and Follow-up:** The procedure achieved immediate technical success with complete cessation of bleeding. The patient was followed up in clinic one month post-procedure, showing excellent recovery with no complications. There was no evidence of pseudoaneurysm formation or other vascular sequelae at the treated site.

**Physician Comments:** The treating physician's approach was guided by both anatomical considerations and patient-specific factors. "This gentleman is young, with a normal coagulation cascade, so a couple of small fibered coils should effectively stop the bleeding in this region." In addition to the fibered coils, gelfoam was considered as an alternative. "You could also use gelfoam if it was difficult to achieve a distal position within that small muscular branch."

The physician stressed the importance of precise distal positioning. "If we only use coils proximally, collateralization could lead to bleeding from the other side of the lacerated artery." The success of the chosen approach was confirmed at the time of treatment and during follow-up, "We achieved good hemostasis," and at a one month clinic visit, "There was no evidence of a pseudoaneurysm or any other issues with the treated area. The patient did very well."



Figure 1



Figure 2



Figure 3



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