Tips And Tricks For Recognizing And Treating Acute Popliteal Artery Injuries (Lacerations And Occlusions) After Orthopedic Knee Surgery: They Are Often Missed

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- Arterial vascular injury after total knee arthroplasty (TKA) is rare, its rate of occurrence varies from 0.1% to 0.8%.
- The spectrum of sequelae ranges from wound complications to infection, limb loss, and amputation.
- Legal suits have been reported in as many as 30% of cases.
- The incidence of amputation is reported to be as high as 64%.
- Even at high volume centers, approximately half of patients who sustain a vascular injury during TKA are not identified on the day of surgery.

- The range of pathology includes intra-operative hemorrhage, thrombosis, pseudo-aneurysm and arteriovenous fistula.
- Post-TKA arterial occlusion can be caused by thrombosis, fascial obstruction, plaque embolization, or direct trauma to the vessel.
- When revascularization is undertaken in the postoperative setting, additional complications may be encountered including postischemic reperfusion injury necessitating prophylactic fasciotomies.

Case Presentation

- A 58-year-old female presented with past medical history of hypertension, COPD underwent successful right total knee arthroplasty (TKA) in June 2014.

- She developed acute numbness in the right lower extremity despite documented normal pedal pulses, as well as blisters in the right anterior and posterior leg.

- No financial disclosures.
6 weeks post TKA

Initial Diagnostic Angiogram via Radial Approach

Right LE Angiogram

Right LE Angiogram

Retrograde Pedal access

- Balloon angioplasty of the right posterior tibial artery was performed from the groin access using a Charger 5.0 mm x 60 mm balloon followed by a Charger 6.0 mm x 60 mm
Post PTA of Popliteal Artery

- Vascular ultrasound 2 hours after the procedure showed reclosure of the right Popliteal Artery.
- Patient underwent successful right above-knee popliteal to right posterior tibial artery bypass graft using non-reversed translocated saphenous vein graft.
- Patient underwent excisional debridement to tendon level and application of Integra skin graft substitute 2 months after the Venous Bypass.

Skin Perfusion 2 weeks post intervention

Prevention

- More careful surgical technique may be the most effective preventative mechanism.
- Ongoing awareness is therefore essential for early diagnosis and management of this rare but serious complication.
- Identifying an at-risk patient,
- History of dissection, prior peripheral artery reconstruction, absent or poor pulses, history of recent or chronic smoking are some factors that place a patient at risk and warrant further investigation, including possible prophylactic vascular consultation.
- Despite the limited evidence, the consensus remains that patients who are at risk for arterial complications should be considered for TKA without the use of a tourniquet given the potential limb and infective arteriography risk. A similar recommendation has been made for patients with non-palpable pedal pulses or with known peripheral vascular disease.
• Thank You