Management of Popliteal Arterial Injury

Charlie Cheng, MD
Michael Silva, MD

Vascular Surgery & Endovascular Therapy
Department of Surgery

utmb Health
• Retrospective analysis of the National Trauma Data Bank (NTDB)
  - Incidence of isolated popliteal injury < 0.2%
  - 82% male, mean age of 33 yrs
  - 61% blunt, 39% penetrating

Considerable risk of limb loss has been recognized:

- DeBakey in 1946 described an amputation rate of 73% with popliteal ligation in WWII

- Limb loss rates improved to 32% in the Korean conflict, and the Vietnam War

• Similar dismal outcomes in civilian population
  ▪ Simple arterial ligation, amputation rate of 70%

• Improved results
  ▪ Increasing use of arterial repair, vein grafting, and fasciotomy
  ▪ Modern era, amputation rate of 6 to 28%

- Iatrogenic trauma
  - Elective knee intervention
- Penetrating trauma
  - Gun shots, stabbing
- Blunt trauma
  - Knee dislocation
• **Diagnosis**
  - Ongoing pulse examination
  - Ankle Brachial Index (<0.9)
  - Angiography
    - “all” vs selective
• Open Surgical Repair
   Debridement of non-viable tissue
   Tension free end-to-end anastomosis
   Interposition vein graft
   Interposition superficial femoral arterial graft
     Use proximal SFA for repair
     Replacement of SFA with PTFE graft
• Popliteal Arterial Injury from Knee replacement
• Gun Shot Wound
• Questions?