Anterior Approach Total Ankle Arthroplasty: Superficial Structures at Risk

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Our disclosures are in the Final AOFAS Mobile App. I have a potential conflict with this presentation due to:
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Premise

- Total Ankle Replacements (TAR) require attention to detail
- Meticulous soft tissue manipulation
- Precise bone cuts
- Accurate implantation
Premise

• Defining TAR learning curve around potential pitfalls
• Complications can occur intra-op and post-op
  – Anterior Wound Rate is low
  – Nerve injury not well documented
Rationale

- Anatomic Variation exists of Superficial Peroneal Nerve (SPN)

- Determine the relationship of SPN to standard TAR Approach
Methodology

- 10 BK Fresh Cadavers
- Standard Anterior Approach
- Fluoroscopy used to identify Joint line
- SPN Dissected
- Branch & Bifurcation measurements made
Results

- Medial Dorsal Cutaneous Nerve at **highest** risk
- **80%**: Crossing branch 35 mm (mean) from joint line distally
- **20%**: Crossing branch btwn. TA and EHL at joint line
Literature Review

• Reported Nerve Related Injuries during TAR

  2-3% Rate

• Few case reports document anterior nerve injury specifically
Conclusion

• Branches of SPN may require transection
• 20% at the Joint Line
• 80% up to 35 mm Beyond Joint Line
Clinical Relevance

- Highest risk for anterior nerve injury is to medial dorsal cutaneous branch of SPN
- Risk is elevated when dissection is carried > 35 mm distal to the joint line
- Counsel patients on the risk of sensory change over MDCN dermatome
References