

Fibula Nerve Neuroplasty and Osteoplasty for Limb Length Discrepancy: A Case Report

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Disclosure

I have no financial disclosure or conflicts of interest with the material presented in this presentation.

Background

- Soft tissue injury is often prioritized before boney injury in order to salvage the extremity.
- This can cause a delay in treatment of boney or ligament injuries

Background

- Modern techniques allow salvage and reconstruction of catastrophic limb injuries
- However, well- functioning lower extremity prostheses have good functional outcomes, when compared to prostheses.
- The Lower Extremity Assessment Project (LEAP) study showed that social factors were more closely associated with outcome vs. treatment strategy.

Case Report

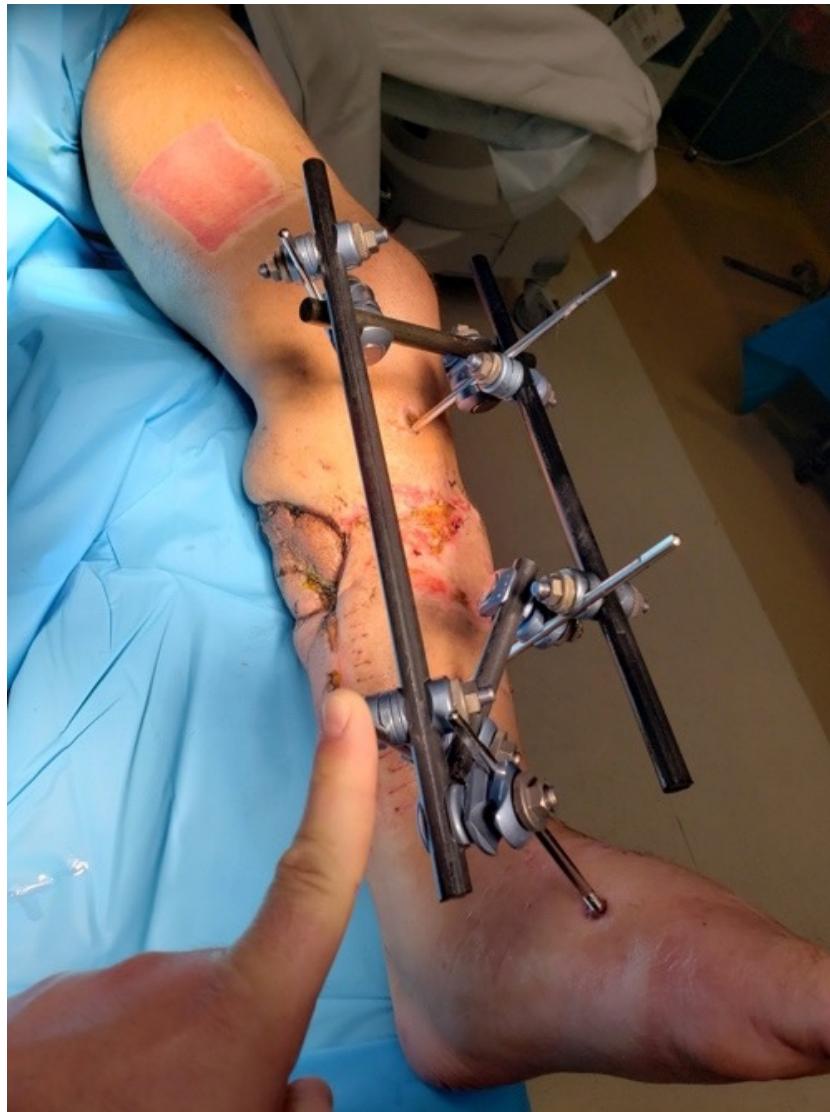
Patient History

- 22 y/o Male
- Helmeted MCC vs. ambulance
- Mangled left leg extremity with an open proximal tibia fracture, soft tissue damage with approximately 150cm of intact skin anterolaterally.
- No palpable or dopperable detected dorsalis pedis and posterior tibial pulse



Case Report

- I&D, fasciotomy of the left lateral compartment, and placement of uniplanar external fixator.
- Amputation recommend but referred to our practice for limb salvage.
- Patient underwent gradual shortening of approximately 17cm to allow for soft tissue coverage.



Case Report

- Returned 1.5 years later
 - Neurogenic pain
 - Burning, tingling, electric
 - X-Ray negative
 - Foot drop

Case Report

- Returned a few months later
 - Increased pain over fibula
 - Foot drop persisted, despite adhering to the brace
- BKA vs Excision of fibula

Case Report

- Reported back a few months later
 - Needed shoe lift for LLD
 - Still considering amputation vs. excision vs. limb lengthening



Case Report

- First underwent excision of the fibula and neuroplasty of the fibula nerve.
 - Fibula nerve placed more favorably anteriorly
 - Fibula was dissected out and excised
 - Made WBAT and ROM as tolerated

Case Report

- Returned four months later
 - Removal of hardware
 - Osteoplasty of the tibia/fibula
 - Placement of PRECICE nail
 - Touch-down weightbearing and ROM as tolerated

Case Report

- Seen two weeks post-operatively
 - External remote control (ERC) adjustment device provided, and training was performed to do adjustments at home
- Follow-up biweekly with x-rays
- Discontinued ERC at four months post-op
- Six months post-op the left tibia was 5mm shorter than contralateral side
 - Consistent with pre-operative plan

Discussion

- Proximal tibiofibular joint dislocations are a rare finding and are often reported with impact collisions. They can present with lateral leg pain and a foot drop.
- Peroneal nerve entrapment syndrome is a common neuropathy of the lower extremity associated with foot drop and pain. Treatment is typically required to help alleviate symptoms and can include decompression or proximal fibular excision.
- LLD has multiple etiologies, including bone loss from open fractures.
- Osteoplasty with a PRECICE nail has been shown to be a valid option to achieve limb lengthening treatment for patients with length discrepancy.

Discussion

- Overall, the patient benefited significantly from a proximal peroneal nerve excision and a PRECICE nail and has returned to all daily activities.



References

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