

## A Case Report Of Traumatic Anterior Ankle Soft Tissue and Bone Loss That Was Salvaged With Fusion and Free Flap

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### INTRODUCTION:

A traumatic ankle injury with severe soft tissue loss can cause a significant loss of function and even amputation<sup>1</sup>. We report a case that was salvaged with hindfoot and midfoot fusion, and a free flap from the anterolateral thigh that was performed with plastic surgery team.

### REPORT:

A 19 years old motorcyclist was involved in a motor vehicle accident that caused the left anterior ankle and midfoot degloving injury with total segmental loss of the anterior compartment soft tissue, complete tear of medial and lateral ankle ligament complex, dislocated talus, and bone loss of the talar head, navicular bone and cuneiforms, as shown in Figure 1. Initial management of debridement and external fixation stabilisation were performed, in which the anterior tibial artery (ATA) stump was ligated. Secondary wound healing with skin-to-bone scar tissue developed subsequently.

The salvage operation was planned with two options of soft tissue reconstruction as the priority. The first option was to utilise the ligated ATA stump as the donor pedicle for a free flap from the contralateral anterolateral thigh (ALT). The second option was a rotational reversed sural flap, should the ATA pedicle not suitable. Hence, the fusion was done via anterior ankle and midfoot, and sinus tarsi approaches while preserving the peroneal artery for sural flap and ATA. Intra-operative management started with scar excision, ATA and ALT flap pedicle exploration. Then, joints were prepared and a tricortical iliac crest autograft was harvested to build the foot medial column. Lastly, the ALT free flap was implanted. Healing process was satisfactory and patient was able to weight bear after five months, as shown in Figure 2.

This complex reconstruction provided a robust soft tissue coverage and allowed midfoot bony reconstruction access. The severed ATA was a good option as the donor pedicle, and the donor site of ALT was primarily closed, which reduced donor morbidity.



**Figure 1:** Initial injury photo and radiograph



**Figure 2:** Five months post-operative photo and radiograph.

### CONCLUSION:

This salvage case of complex trauma of the foot and ankle required multiple reconstruction plans with soft tissue as the priority that resulted in a stable and 'shoeable' foot.

### REFERENCES:

1. Godoy-Santos AL, Schepers T; Soft Tissue Foot & Ankle Group. Soft-Tissue Injury To The Foot And Ankle: Literature Review And Staged Management Protocol. *Acta Ortop Bras.* 2019;27(4):223-229.