

# Orthoplastic metatarsal reconstruction using a chimeric vascularized bone graft in a heavy smoker: A case report

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## INTRODUCTION

Large scale bony defects caused by trauma, tumors, infection or congenital anomalies are challenging regarding reconstruction. Free vascularized fibular bone grafts (FVFGs) are a well-established treatment option especially for craniofacial reconstruction. However, FVFGs can be a useful tool in interdisciplinary extremity reconstruction.

In the present case a FVFG chimeric flap was applied to reconstruct the medial column of the midfoot following osteosynthesis-associated infection after arthrodesis.

It is a special clinical scenario, as the patient is a low-compliant heavy smoker. However, alternative treatment was a lower limb amputation.

## METHOD

A 63yo underwent arthrodesis of the lower ankle joint due to osteonecrosis. After 6 months osteosynthesis-associated infection was detected resulting in implant removal and subsequent large bone defect.

The flap was harvested from the ipsilateral leg including a single-perforator based skin island to cover the column fusion plate (Artrex) and a 3.7cm fibula graft to restore the medial foot. Vascular anastomosis to the dorsalis pedis artery and great saphenous vein - using an additional vein graft - was performed.



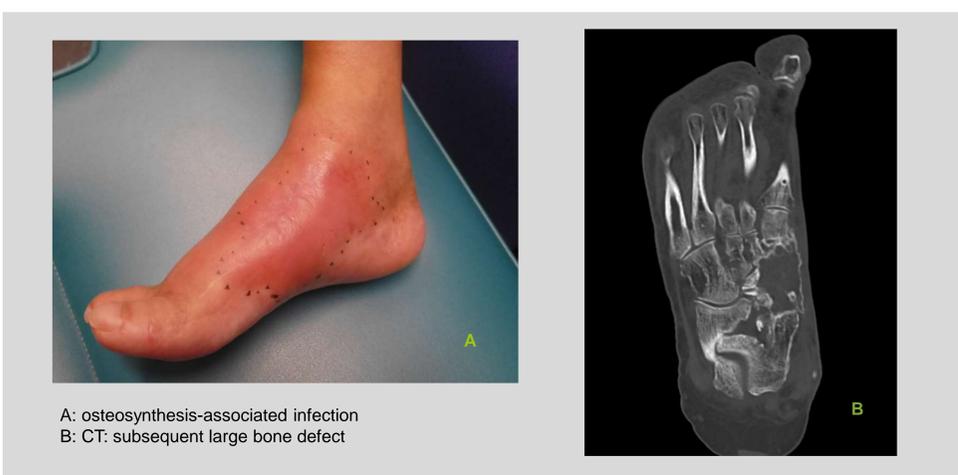
Six month following surgery the patient was able to walk painless without walking aid with active flexion/extension of 40-0-10°.



## CONCLUSION

Due to the fact that FVFGs provide proper blood supply, they are effective even in cases where poor vascularity is present at the recipient site, e.g. after infection or radiation.

In this case the patient was heavily smoking, had osteoporosis and did not follow strict partial weight-bearing immediately postoperatively. Despite difficult conditions, the patient was pain-free, the transplant healed well and she circumvented amputation. Particularly in these border cases, interdisciplinary collaboration and good information to the patient about possible complications in a repeating manner is indispensable prior surgery.



After 6 weeks of systemic and local antibiotic therapy, bone samples were aseptic and we planned to reconstruct the medial midfoot by means of a FVFG.

