Surgical Reconstruction Of Open Medial Malleolus Fracture

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INTRODUCTION:

Although it is rare, a severe open ankle injury with medial malleolus bone loss can lead to recurrent ankle instability. We present a case of traumatic medial malleolus bone loss which is successfully treated with medial malleolus reconstruction using bicortical iliac crest graft and free radial forearm flap for soft tissue coverage.

CASE REPORT:

Mr M, a 17-year-old gentleman was involved in a motor-vehicle accident and sustained open medial malleolus fracture of the right ankle with bone loss. He underwent wound debridement to remove all the devitalized tissue and foreign bodies and two Kirschner wires were inserted to hold the remaining part of the medial malleolus with cross ankle external fixation to stabilize the ankle joint.

A combined procedure between orthopaedic and plastic surgery was carried out five days later for the definitive management. A right bicortical iliac bone graft was harvested to reconstruct the bone defect. An antiglide plate was used to fix the iliac bone graft to the medial malleolus. For soft tissue coverage, a left free radial forearm flap was used. A follow-up review at 3 months showed a stable ankle and satisfactory bone healing and soft tissue contour over the medial malleolus.

Figure A shows the bone loss over the right medial malleolus. Two Kirschner wires are used to hold the remaining bone of medial malleolus.

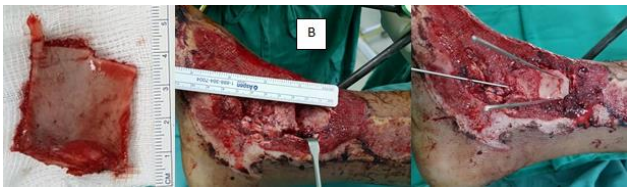

Figure B shows the bone loss over the medial malleolus which is replaced with a tricortical iliac bone graft.

Figure C shows the plain radiographs of the right ankle after reconstruction of the medial malleolus.

Figure D shows the well-healed wound and normal range of movement of the right ankle.

DISCUSSIONS:

A severe ankle injury, when associated with bone and soft tissue loss, requires a good surgical treatment plan. An initial debridement, followed by skeletal reconstruction and stabilization as well as soft tissue cover are essential to achieve an optimal outcome.

CONCLUSION:

A good surgical plan involving both orthopaedic and plastic surgeons is essential to ensure a good functional outcome in treating traumatic medial malleolus bone loss.

REFERENCES:

1. M Nithyananth et al. Reconstruction of traumatic medial malleolus loss: A case report. Foot and Ankle Surgery 2010;16:e37-e39.