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A Case Report: Chronic Deltoid Ligament Reconstruction Using A Synthetic Graft

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INTRODUCTION:

Chronic deltoid ligament insufficiency leads to medial ankle instability, pain, and degeneration. Direct repair is often unfeasible, making reconstruction with a synthetic graft a viable option for restoring stability. There is no single best treatment for deltoid ligament reconstruction in the literature, as techniques vary based on surgeon preference, with most reports being case studies rather than standardized guidelines.This case report describes a successful deltoid ligament reconstruction using a synthetic graft.

REPORT:

A 40-year-old male with a history of an MVA sustained an open distal tibia and fibula fracture, treated with fixation. A missed deltoid ligament injury led to chronic medial ankle pain and instability. Examination revealed medial tenderness, a positive talar tilt test (>10° valgus), and increased medial clear space on stress radiographs.

Operative treatment start with medial approach was used to identify the posterior tibial tendon, FHL, and FDL. A tibial tunnel was drilled under II guidance. Further tunnels were created in talus, sustentaculum tali and navicular bone. A suspension endobutton used to secure the Artelon graft at tibia, biotenodesis screws (5mm) at talus and sustentaculum tali. A triangle configuration of the fiber tape was used to replicate the spring ligament. (Figure 1)

The patient was immobilized for two weeks, progressed to full weight-bearing by six weeks, and returned to normal activities within six months.

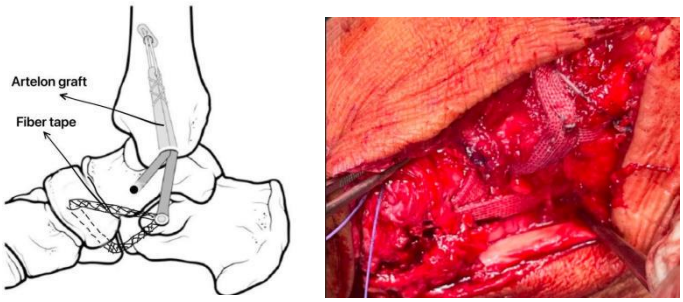

Figure 1: Intraop picture showing technique as in diagram.

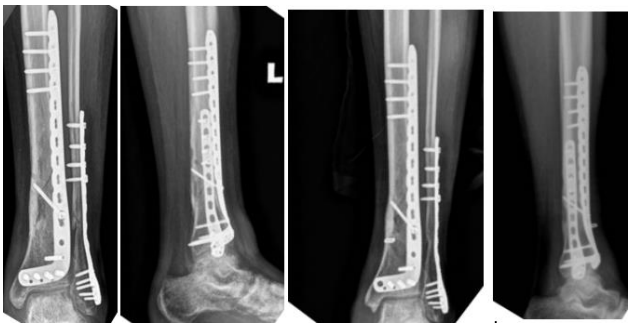

Figure 2: pre and post operative radiograph

CONCLUSION:

Synthetic graft reconstruction provides strong mechanical support, rapid recovery, and good long-term outcomes for chronic deltoid ligament insufficiency. Further studies are needed to compare its durability with biological options.

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