

Chronic Symptomatic Ankle Avulsion Fracture

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Introduction/Purpose: Persistent pain and instability following inversion or eversion injuries of the ankle is not rare. Besides injury of lateral or medial ligaments, avulsion fracture of lateral or medial malleolus could be found in some cases. The avulsion fracture may result in nonunion and/or ligamentous laxity which could lead to chronic ankle pain. The purpose of this study was to evaluate the intraoperative findings and long-term outcomes of patients of symptomatic ankle avulsion fracture.

Methods: 23 patients of ankle avulsion fracture along with chronic ankle pain and instability were studied. Tenderness and swollen at lateral and/or medial gutter were found and radiographic images were taken for the diagnosis. After at least 6 months of unsuccessful non-operative treatment, all patients underwent surgery of osseous fragments excision and anatomic ankle ligaments reconstruction. AOFAS-AH and VAS Score were given to assess the outcomes of surgery.

Results: There were 21 males and 9 females among the patients. The average age of the patients was 24.6 years (range, 18-45 years) at the time of injury and 27.3 years (range, 18-46) at the time of surgery, indicating a mean delay in diagnosis and/or treatment of 2.7 years. At a mean follow-up of 2.6 years (range, 1 to 5.2 years), the average AOFAS-AH Score increased from 72.5 to 93.2 out of 100 ($P<0.05$), the average VAS score decreased from 6.2 to 1.2 ($P<0.05$).

Conclusion: For those patients of ankle avulsion fracture presenting with chronic ankle pain and instability, surgical excision of the bony fragment combined with reconstruction of ankle ligaments were effective in eliminating pain, restoring ankle stability, and helping return to the pre-injury functional level.



Fig. A) Lateral ankle avulsion fracture. B) Bone fragment was taken out and ligament reconstruction was performed. C) Medial ankle avulsion fracture. D) External rotation test showed widened medial gutter. E) Widened medial gutter was restored after medial ligament reconstruction.

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