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Surgical Intervention of Medial And Lateral Malleolus Fracture : A Case Report

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I. Introduction

For unstable ankle fractures that involve the medial malleolus, operative treatment is generally recommended (1–3). Multiple techniques, including bioabsorbable implants (4) have been used for fixation of the medial malleolus; however, the most common technique as recommended by the Association for the Study of Internal Fixation (AO-ASIF) group uses two 4-mm partially threaded cancellous lag screws placed perpendicular to the fracture line (5). Collinge et al (6) showed that stainless steel cancellous screws had up to 24% less pullout force, significantly less torsional and bending strength than a 3.5-mm bicortical screw. There is little evidence reported in the literature on bicortical fixation of medial malleolar fractures (7,8). The AO-ASIF group recommends tension-band wiring for small avulsion type fractures of the medial malleolus that are unacceptable for screw fixation as well as for osteoporotic bone. Tension band wiring is based on the principle of conversion of distractive forces into compressive forces at the fracture site (Pauwell), advantages being rigid fixation and early ambulation in relation to other methods of internal fixation. Further, Lateral malleolus is the key structure to anatomic reduction and restoration of integrity of lateral malleolus established stability of ankle joint (9). Lateral malleolus can be fixed by Rush nail, long screw and semitubular plate. In this backdrop, the present case report elicits Potts facture with medial malleolus with tension band wiring and lateral malleolus with tubular plating.

II. Case Report

75 years female was reported history of fall complaining pain and swelling of the ankle joint x-ray shows bimalleolar fracture with displacement. On day 1 the patient was given posterior slab and pain killer injection was given. Further, elevation of leg and complete hemogram was done. On day 2 physical faintness was taken and after complete investigation and medical fitness the patient was taken for surgery on day 3.

Surgical Intervention

For Medial malleolus medial approach complete haemostasis was achieved. Two K- wire was placed parallel to hold the fracture site, one 4.5mm screw was placed at right angle to the fracture site in medial to lateral direction. Then figure of 8wire was placed across the K-wire and the screws were tightened so as to hold the fracture, and after complete twisting of the steel wire the screw were tightened to get the final compression at the fracture site. On lateral side 1/3 tubular plate was applied and screw fixation was done. On day 4 the patient were administered with antibiotics and on day 5 the patient was discharged and follow up was carried out in outpatient department. Thus, first lateral malleolus was fixed and then the medial malleolus.

Follow up

On recall visit Pott's facture tension band wiring for Medial malleolus and 1/3 tubular plate on lateral malleolus gives good results.

III. Discussion

Prompt operative treatment of displaced ankle fractures decreases morbidity and improves functional outcome (10-12). The treatment of malleolar fractures with accurate open reduction and stable internal fixation using AO method and principles was found to give a high percentage of excellent and good results.. In the present case study, both medial and lateral malleolar fractures were treated surgically by Open reduction and internal fixation in accordance with AO principles. Understanding the mechanism of injury is essential for good reduction and internal fixation. The bend of the lateral malleolus should be reproduced when the plate is being used and also the fibular length has to be maintained for lateral stability of the ankle. Anatomical reduction is essential in all intra articular fractures more so for a weight bearing joint like ankle. Open reduction and internal fixation will ensure high standard of reduction besides eliminating the chances of loss of reduction since the operative results were satisfactory in the present case. The outcome of the present case reprt confirm as have those of other series that Open reduction and Internal fixation is the treatment of choice for medial and lateral medial malleolar fractures.

IV. Discussion

In this scenario, the tension band wring for facture Medial malleolus and 1/3 tubular plating for fibula gives good results.

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