Mini Dual Incision with Percutaneous Plating for Displaced Intra-Articular Calcaneal Fractures
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Summary: The extensile lateral calcaneal approach as described in the literature has a relative high incidence of wound complications and sural nerve injury. The Authors retrospectively reviewed 24 patients who have been treated surgically for displaced intra-articular calcaneal fractures using a new operative approach for fixation of these fractures.

Purpose: The goal was to detail a surgical approach that would lessen the risk of wound and sural nerve complications, but still allow direct visualization of calcaneal repair. Studies have suggested that in patients treated operatively, anatomic reduction of the intra-articular surface corresponded to a better clinical results.

Methods: The surgical approach involves two mini incisions. The first incision is centered over the sinus tarsi. The incision is approximately 3 centimeters and extended distally only in cases of severe anterior calcaneal fracture displacement into the calcaneal-cuboid joint. The second incision is curvilinear over the lateral calcaneal posterior inferior heel and is approximately 3 centimeters. This study retrospectively reviews a novel approach to operative fixation of displaced calcaneal fractures. The authors review included the rate of wound complications, sural nerve injury, and length of surgical time.

Results: Out of 24 patients with dual incision approach and percutaneous plating 5 superficial wound healing and 2 minor sural nerve irritations were found. All 5 wounds healed within 1 month of development. None required wound care consultation or supervised care. One of two sural nerve irritations was resolved at 6 month follow-up. Fracture patterns included Sanders types 2,3 and 4. The average age of the Patient was 48.2 years old. There were 18 males and 6 females. Five of the 24 patients were greater than 60 years of age. Nine of 24 patients had actively been smoking at least ½ PPD tobacco usage. The length of surgery (LOS) averaged 67 minutes.

Conclusion: The mini dual incision lateral exposure of the heel offers surgeons another option for repair of complex calcaneal fractures. This technique showed minimal post-operative complications. The senior author initially chose high risk and elderly patients for this technique. Upon seeing minimal complications and maintaining similar overall success the author expanded the technique and presently has for the most part replaced the extensile lateral approach.

Additional benefits include better visualization for fixation of anterior calcaneal fractures and posterior facet. Also, later hardware removal and joint debridement is much more feasible. If subtalar fusion is required the sinus tarsi incision is easily incorporated without the concerns of re-opening the extensile lateral approach. The authors also feel this approach offers a much simpler learning curve and entails far less fluoroscopic exposure than percutaneous techniques described in the literature.