

Minimally Invasive Sinus Tarsi Approach for Calcaneal Fractures

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INTRODUCTION:

The treatment of displaced intra-articular calcaneum fractures remain a challenge and its operative management are associated with high rates of wound complications. The aim of this case series is to evaluate clinical and radiological outcomes of displaced intra-articular calcaneal fractures managed surgically with sinus tarsi approach as well as to report complications encountered. This study was conducted at 2 foot and ankle units in Malaysia.

MATERIALS & METHODS:

A consecutive series of 15 intra-articular fractures in 14 patients with displaced fractures were managed surgically at both these centres. Demographic data were collected for all patients and radiographic evaluations included measurements of Bohler and Gissane angles. Fractures were classified using Sanders's classification and clinical evaluations were limited to wound healing complications, deep infections, sural nerve injuries and peroneal tendinitis. A sinus tarsi approach was undertaken for all patients and were followed up to at least 9 months post operatively.

RESULTS:

Fifteen intra-articular calcaneum fractures in 14 patients with a mean age of 47 years underwent fracture fixation with the sinus tarsi approach. Our series comprised of 27% Sanders Type 2 and 73% Type 3. Bohler's angle measured pre-operatively averaged 2.5° across all 15 fractures and the average post-operative Bohler's angle was 25° . The angle of Gissane measured pre-operatively averaged 100.9° and the average post-operative angle was 120° . There were no cases of wound related complications such as superficial or deep infection, however one patient developed a sural nerve injury which resolved at 6 months.

DISCUSSION:

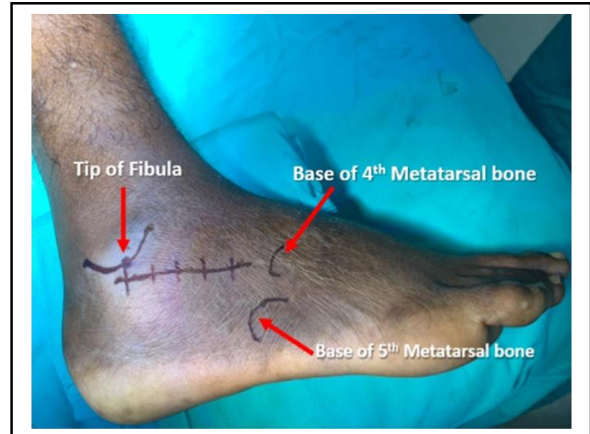


Figure 1. Photograph of skin incision for sinus tarsi approach

The minimally invasive sinus tarsi approach is a limited approach using a small incision that avoids compromising the already damaged soft tissue coverage over the lateral aspect of the foot. It reduces one of the most common and feared complications associated with managing these fractures operatively; being wound infection. Similarly in our series, we had no cases of wound infection which is comparable to other reported infection rates of the sinus tarsi approach where wound related complication rates are between 0% and 15.4%.

CONCLUSION:

Minimally invasive sinus tarsi approach is safe and useful for operative treatment of calcaneal fractures with a low complication rate.

REFERENCES:

1. Schepers T. The sinus tarsi approach in displaced intra-articular calcaneal fractures: a systematic review. *Int Orthop.* 2011 May;35(5):697-703.