

Humanitarian Scholar – Nepal

### Use of Kirschner Wires and Sutures for Anchorage of Partial Avulsion of the Heel Pad

*Devendra S. Bhat, MS; Tul Bahadur Pun, MS; Dawa Lama, MS; Abhishek Jirel, MS*

*United Mission Hospital Tansen, Palpal, Tansen, Nepal*

**Purpose:** Injuries of the heel pad are uncommon but difficult to repair and have poor outcomes. In the situation where partially avulsed heel pads are viable with intact sensation, simple suture after debridement may not be enough. Wound breakdown, infection, and flap necrosis are frequent. Accordingly, we used multiple Kirschner wires (K-wires) to fix the heel pad to calcanium and minimal skin sutures for anchorage of partially avulsed heel pads following proper debridement.

**Methods:** We reviewed cases of partial avulsion of heel pad anchorage treated in our hospital over a period of 4.5 years (April 2015 to October 2019). Data were taken from the hospital computer system.

**Results:** 30 patients with partial avulsion of the heel pad were found over 4.5 years. There were 14 males (46.7%) and 16 females (53.3%) ranging from age 10 to 81 years. Right-side heel pads were 20 and left-sided 10. Majority of injury mechanisms were road traffic accidents. Heel pads were fixed to calcanium with multiple K-wires and sutures applied to flap edges. The average time of injury to surgery was 12 hours. Four patients had superficial wound infection and were managed with regular saline dressing and intravenous antibiotics not needing further surgery. Two patients had migration of K-wires because of early weight-bearing against our advice. All patients were followed for an average of 18 months (range, 5-48) Clinical assessments were done by using the American Orthopaedic Foot & Ankle Society (AOFAS) hindfoot score. AOFAS hindfoot score was good to excellent in most of the patients.

**Conclusion:** Treatment of heel pad avulsion is fairly difficult, with guarded outcome. The management goal of partial heel pad avulsion injury is to preserve as much viable heel pad tissue as possible to provide sensation and stable coverage. This method of anchorage ensures stable reattachment of the viable avulsed heel pad tissue with the least amount of possible trauma to the flap. There are controversies in the use of K-wires for fixation of heel pads. In our setup, with poor access to plastic surgery facilities, our treatment method has attained good outcomes.



The FDA has stated that it is the responsibility of the physician to determine the FDA clearance status of each drug or medical device he or she wishes to use in clinical practice.