Surgical Stabilization of Calcaneal Fat Pad for Treatment of Instability

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Summary:
The authors present six cases of subcalcaneal fat pad problems: one patient with detachment of the fat pad from the inferior calcaneal tubercle caused by trauma, four patients with fat pad traumatic lesions, and the last one caused by fat pad mal formation. These patients failed to respond to clinical treatment with physiotherapy and insoles use. They underwent surgical treatment for the retensioning and reinsertion of the calcaneal fat pad on the inferior aspect of the calcaneal bone.

Introduction:
Subcalcaneal pain is a common cause for orthopedic consultations. It is the pain related to weight bearing on the rear foot. The most frequent cause of these complaints are inflammatory pathologies of the plantar fascia origin at the inferior calcaneal tuberosity, however situations that promote changes of the mechanical properties of the plantar fat pad, decreasing this weight bearing and shock absorption capacity may be related.
Systemic inflammatory pathologies always need to be remembered as diagnostic hypothesis, mainly in uncommon clinical pictures or lack of the normal evolution with clinical treatment.
Peripheral nerve compressions (abductor digiti quinti nerve and tarsal tunnel syndrome) can be associated. Finally, the substitution of normal fat pad for fibrous tissue (caused by axial trauma, mechanical overload, or pad atrophy, related to the aging process or by antiviral drugs use) is one of the principal causes of subcalcaneal pain.

Methods:
The authors present a small series (six cases) of subcalcaneal fat pad problems: one patient with detachment of the fat pad from the inferior calcaneal tubercle caused by trauma, four patients with fat pad traumatic lesions, and the last one caused by fat pad mal formation. These patients failed to respond to clinical treatment with physiotherapy and insoles use. Therefore, they underwent surgical treatment for the retensioning and reinsertion of the calcaneal fat pad on the inferior aspect of the calcaneal bone.

Results:
The related procedure was efficient to treat patients with insufficient calcaneal fat pad, and can be part of the possibilities to treat this challenging problem.

Conclusions:
This procedure is performed using a lateral plantar incision, resection of the fibrous scar tissue or bursae from beneath the calcaneous bone and proximal third of the plantar fascia, debridement of the inferior aspect of the calcaneous, insertion of a suture anchor in the inferior aspect of the calcaneous and, with stitches radially placed (similar to parachute cords), pulling the periphery of the fat pad beyond the calcaneous and anchoring it to the bone. Results of these patients were excellent, with resolution of the complaints and full return to normal daily activities after a four month rehabilitation period. They remained without symptoms throughout the last post operative reevaluation. These cases present a relatively common cause of pain at the rear foot, and authors describe a new procedure, that has not been found in the literature, which resulted in the complete resolution of their complaints, and their return to normal daily activities.