

FIBULAR SESAMOIDECTOMY: Plantar Approach Surgical Technique

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Fibular sesamoidectomy has been considered as an adjunctive part of hallux valgus repair since the time of McBride. The fibular sesamoid is removed through a dorsomedial bunion incision, or through a separate, smaller incision over the first intermetatarsal space. The fibular sesamoid in the patient with hallux abducto valgus is considered laterally deviated, or more accurately, left behind as the metatarsal head deviates medially. As the sesamoid is uncovered by the first metatarsal head, access for removal is enhanced through a dorsal approach. Removal of the fibular sesamoid, even in this plantar-lateral position of deformity, can be a challenging surgical exercise. Excision of the fibular sesamoid can generally be effected through a dorsal approach.

In the patient with a rectus and non-deformed great toe, the fibular sesamoid is directly beneath the first metatarsal head. The fibular sesamoid can become symptomatic, necessitating excision following injury, arthritic degeneration, or osteonecrosis. These conditions can occur with the great toe in a normal rectus alignment. Excision of the fibular sesamoid in the patient with a rectus great toe through a dorsal approach is virtually impossible. Access for the ligaments and soft tissues tethering the fibular sesamoid cannot easily be accessed. A similar argument can be made for a medial approach to the first metatarsophalangeal joint to excise a fibular sesamoid. Direct access can best be obtained through a plantar approach, directly over the fibular sesamoid, or just lateral to it, within the plantar interspace. Excision of the fibular sesamoid through a plantar approach will be reviewed here. A clinically illustrated format will be used to highlight the removal and repair.

ILLUSTRATIVE CASE



Figure 1. Radiograph of a patient with hallux abducto valgus and angular deformity of the great toe. The fibular sesamoid is easily accessible through a dorsal approach.



Figure 2. Rectus alignment of the great toe in a patient with a normal first metatarsophalangeal joint. The fibular sesamoid is not easily accessible through a dorsal approach.

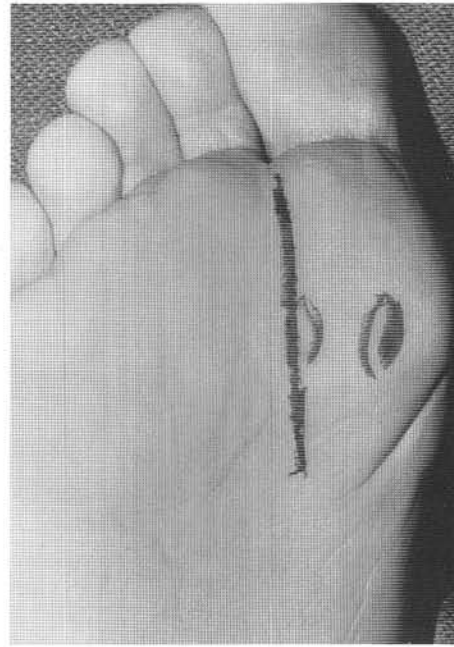


Figure 3. Planned incision for excision of the fibular sesamoid through a plantar approach. The scar will be non-weight bearing following excision of the fibular sesamoid. Note the length of the surgical wound for adequacy of exposure.

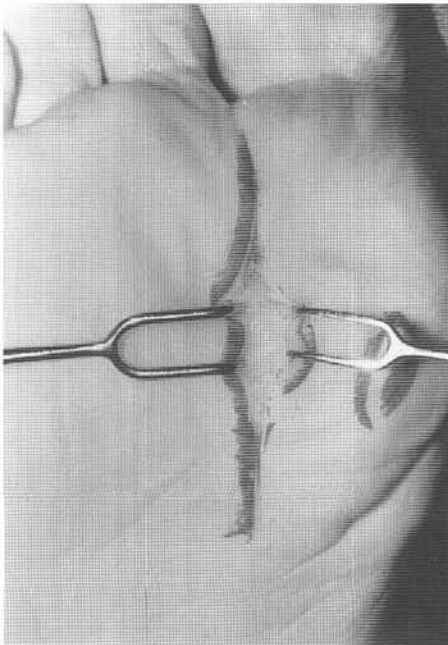


Figure 4. The incision is extended into the superficial fascia. The fibrous septa maintaining the plantar metatarsal cushion beneath the joint is encountered. The wound retracts little.

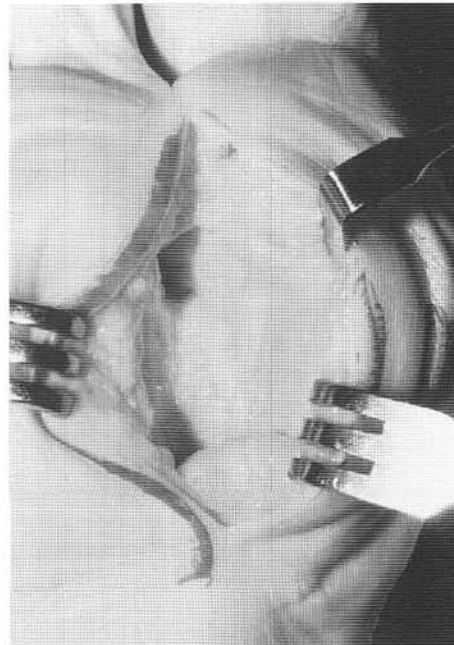


Figure 5. Dissection is continued alongside the first metatarsal cushion to expose the lateral vertical fibers. The first metatarsal plantar cushion is medial in the incision, and the fat body of the first intermetatarsal space is lateral, protecting neurovascular structures.

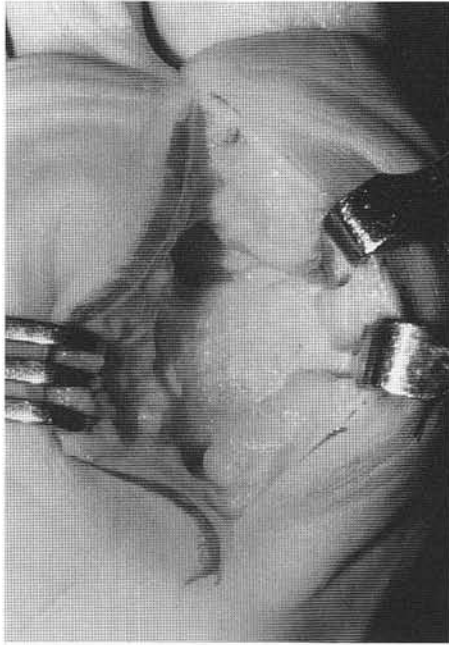


Figure 6. Vertical fibers have been released, and the plantar aspect of the fibular sesamoid is exposed. A very thin, soft tissue cover is noted over the fibular sesamoid.

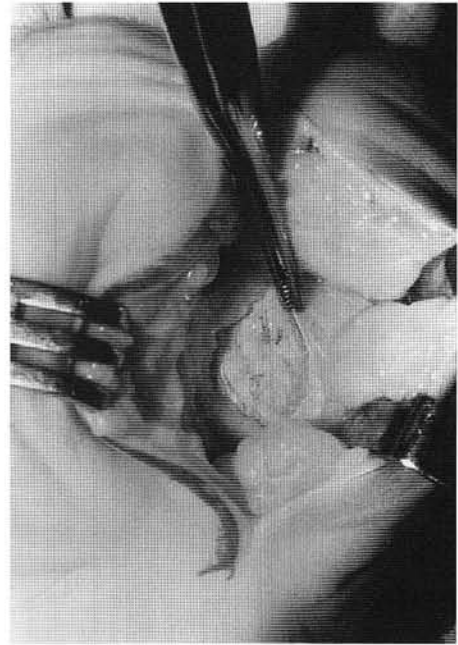


Figure 7. The margins of the fibular sesamoid are outlined and incised by sharp dissection.

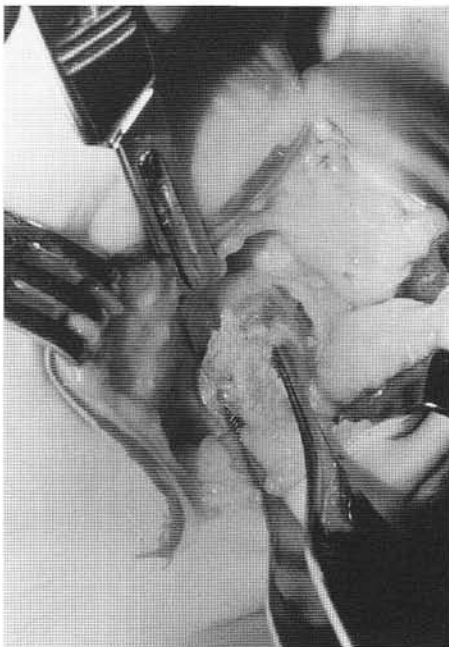


Figure 8. The capsular and soft tissue insertions into the fibular sesamoid are further released, allowing excision.

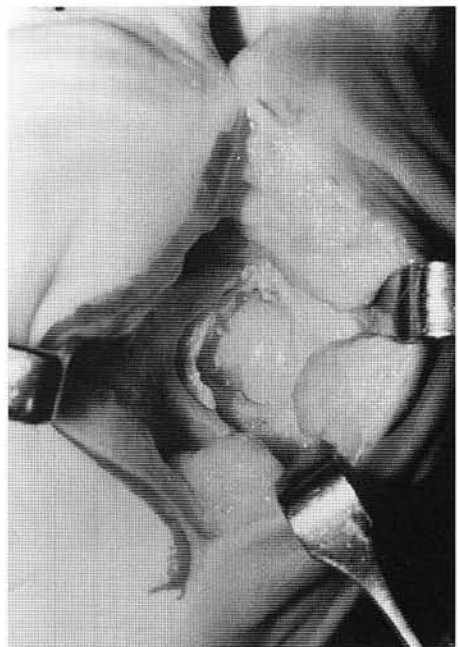


Figure 9. Void left after excision of the fibular sesamoid. The articular cartilage of the inferior first metatarsal head is readily visible.

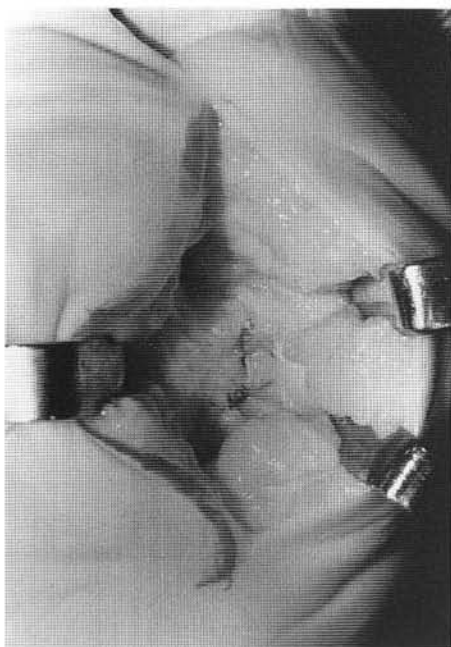


Figure 10. The margins of the plantar capsular soft tissues are brought together and repaired to provide protection to the metatarsal head.



Figure 11. Final closure of skin in layers prior to application of compression dressings.



Figure 12. Preoperative radiograph of a painful fibular sesamoid due to osteonecrosis with post-traumatic onset.

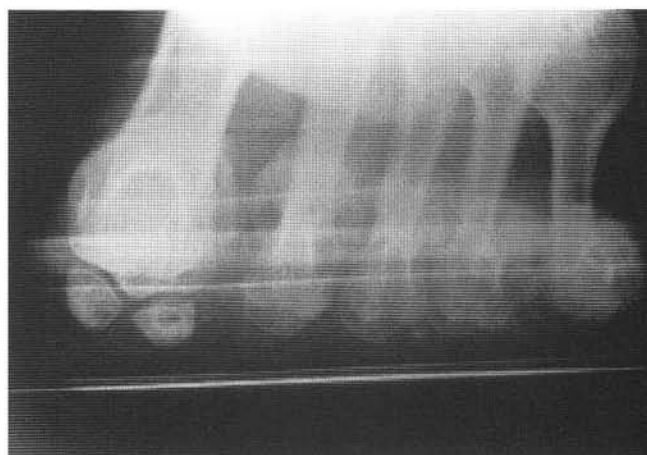


Figure 13. Preoperative axial radiograph demonstrating, more readily, the loss of bone substance.



Figure 14. Postoperative radiograph after excision of the fibular sesamoid.

CONCLUSION

Access to the fibular sesamoid through a dorsal approach in the patient with a rectus great toe is virtually impossible. The author has reviewed three cases where three incisions starting dorsally, then medially, and finally plantarly were performed to attempt to excise the fibular sesamoid. All three patients had severely limited motion in the great toe joint and continued pain following excision. Significant induration of the tissues and scarring were noted. One particular patient had reflex sympathetic dystrophy syndrome as a result of the surgical trauma.

The author has presently excised five fibular sesamoids through a plantar approach. All surgeries proceeded uneventfully. No problems with pain or scarring were noted postoperatively. Good hallux purchase and function were noted following the excision. No significant deviation of the great toe was noted to occur after removal of the fibular sesamoid.

The plantar approach is recommended for fibular sesamoidectomy in the rectus great toe. The ease of access, as well as reduction in surgical trauma, contributes to a more satisfactory postoperative recovery. A dorsal approach should be avoided due to insufficient access and exposure to adequately remove and release the fibular sesamoid in the patient with a rectus great toe.