

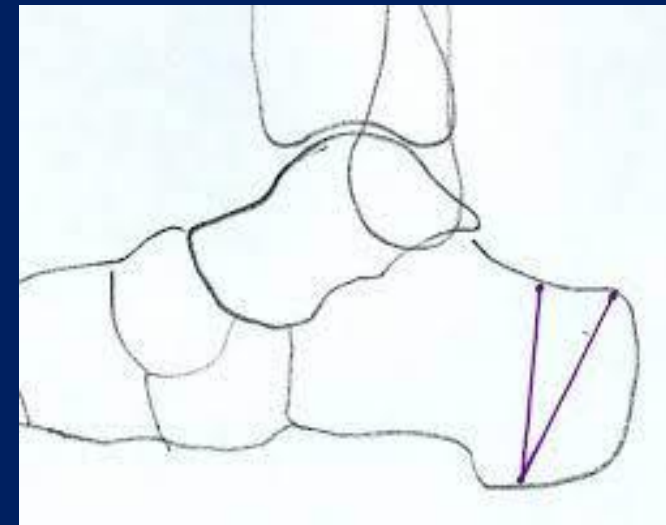
The place for the Keck and Kelly Osteotomy in Insertional Achilles Tendinopathy

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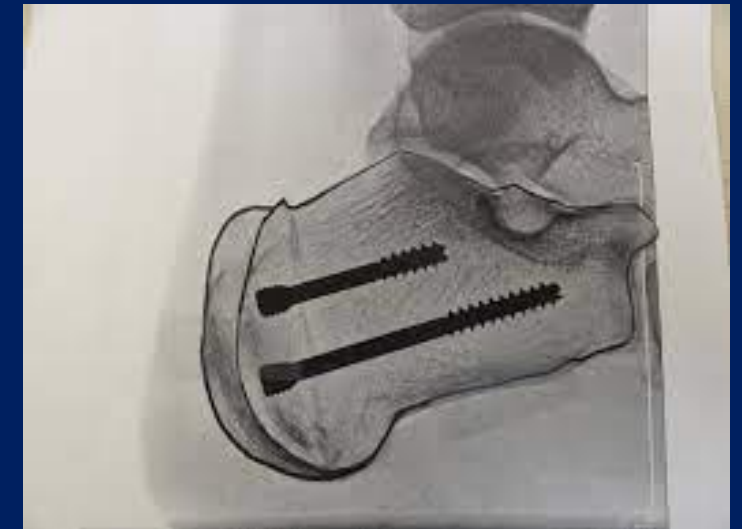
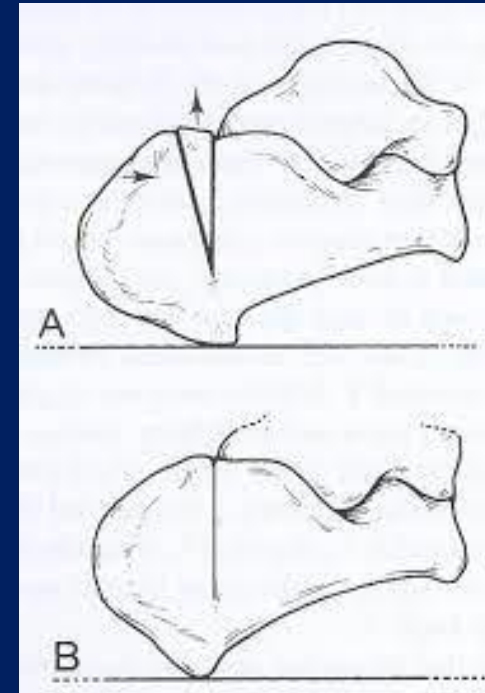


Firstly...

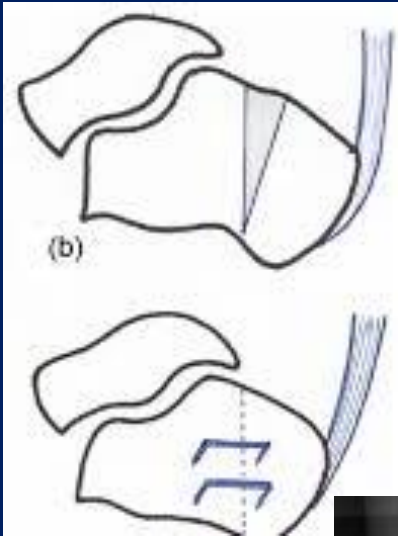


The Keck and Kelly

- A dorsal closing wedge calcaneal osteotomy was originally described by Zadek in 1939, but was popularised by Keck and Kelly in 1965 following a publication in the Journal of Bone and Joint Surgery.
- The first cut of the osteotomy is performed 1.5cm anterior to the achilles tendon, tilted on a 40 degree angle. The second cut is performed 1cm anterior to the first cut at a convergent angle, meeting at the plantar apex. The wedge is removed.
- Care must be taken to preserve the plantar hinge when closing the osteotomy
- Originally fixation techniques included use of staples. 2 parallel partially threaded cannulated screws are most commonly used in modern practice.
- Growing evidence for MIS. Nordio et al (2020) found decreased healing times and complication when compared to open approach. Kaplan et al (2023) describes technique with good results but warns of learning curve required



What does it do?



- It folds the posterior aspect of the calcaneus back into the foot, reducing the posterior prominence
- At the same time, this reduces tension on the Achilles tendon insertion by effectively, shortening the distance between origin and insertion.
- Conversely, Haglunds exostectomy only deals with the symptoms rather than altering the mechanics of the deformity
- Short term relief is possible, but recurrence is a high risk

Indications

- The Keck and Kelly is particularly relevant when dealing with a cavoid foot with a high calc inclination angle. It is strongly indicated in these cases as it reduces the calc inclination angle and reduces Achilles tightness.
- Recurrence following Haglunds exostectomy. Remember Albert Einstein.



Advantages over Haglund's Exostectomy

- Less wound healing issues than posterior incision. The posterior calcaneal area over posterior achilles has notoriously poor vascular supply.
- L shaped lateral incision is placed in an area of increased vascularity when compared to posterior approach
- Keck and Kelly does not involve any trauma to the Achilles. In contrast, Haglund's exostectomy required aggressive debridement of the Achilles tendon, leading to prolonged post op pain and swelling



Complications

- Fracture of the plantar hinge can lead to dorsal drift of the posterior fragment
- Over reduction of calc inclination angle-particular risk in flatfoot
- Sural neuritis/injury
- Non-union of osteotomy



What does the Evidence tell us?

- Karaismailoglu et al (2023) published a meta-analysis comparing Haglund's exostectomy with Keck and Kelly for insertional Achilles tendinopathy
- 15 articles were reviewed. Results showed that clinical outcomes were comparable, however Haglund's exostectomy had a significantly higher rate of wound complications
- Ge et al (2020) retrospectively compared the two techniques. They reported that the Keck and Kelly group had poorer short-term clinical outcomes but provided better long-term function and symptom remission.
- Further studies are required to establish time of return to normal activities comparing both techniques.

Conclusion

- Like every surgical procedure, the Keck and Kelly has its certain indications
- It is the most appropriate procedure in some cases because
 1. It addresses the mechanical aetiology rather than just the symptoms
 2. It avoids trauma to the Achilles tendon
 3. The incision is an area of better vascularity
 4. It is strongly indicated in cases of recurrence after previous Haglund's exostectomy



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