



## Background

Haglund's syndrome, a combination of postero-superior calcaneal prominence, retrocalcaneal bursitis, and insertional Achilles tendinopathy, is a common painful condition. Conservative care is the predominant treatment approach but up to 45% of cases advance to surgery. Tendon endoscopy provides a minimally invasive option to explore and treat several pathologic conditions of the Achilles tendon while minimizing drawbacks such as wound dehiscence, operating time, peri-operative pain, and delayed return to normal activity. Multiple endoscopic techniques have been described, but not yet in combination with a percutaneous method of postero-superior calcaneal prominence resection and Achilles tenotomy.

This case study and technical note describe a new technique using endoscopic guided ultrasonic debridement using the TENEX TX MicroTip and TX-Bone on a patient with Haglund's syndrome.

## Case Study

This is a case study in a 74 year old female with past medical history of diabetes, obesity, hypertension who presented with chronic pain located about the insertion of the left achilles tendon which she rated 10/10. Patient denied trauma and stated that pain gradually increased over the 3 months despite a rigorous conservative treatment protocol which included limited weight-bearing, NSAIDs, and physical therapy.

XRs revealed calcaneal spurring at the posterior-superior tubercle. MRI revealed achilles tendinopathy and circumferential enlargement proximal to the superior calcaneal process, along with peritendinous edema with bursitis of the achilles.

The patient was subsequently consented for minimally invasive surgery including endoscopic gastrocnemius recession, Achilles endoscopy with resection of mid-tendon pathology, and percutaneous resection of the posterosuperior portion of the calcaneus by ultrasonic method.

## Results



**Figure 1:**  
Endoscopic portals

Proper placement is marked by palpating the medial and lateral margins of the posterior superior calcaneal tubercle at the level of the achilles insertion and marking 1cm proximal



**Figure 2: Flossing Technique**

Blunt dissection achieved by passing a 4x4 gauze deep to the achilles tendon and "flossing" it back and forth, thereby separating soft tissue within Kager's triangle from the achilles

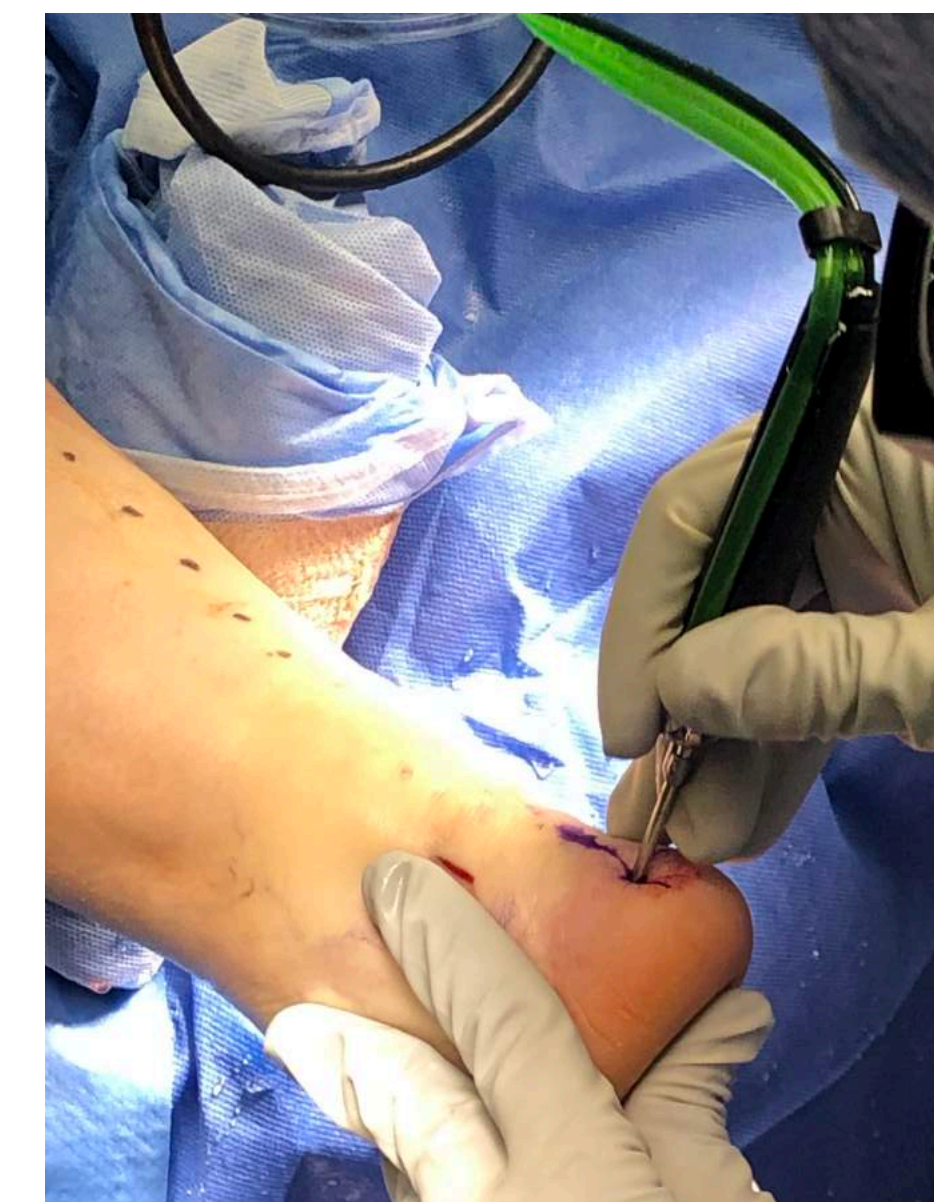


**Figure 3 & 4: Tenex Wand Placement**

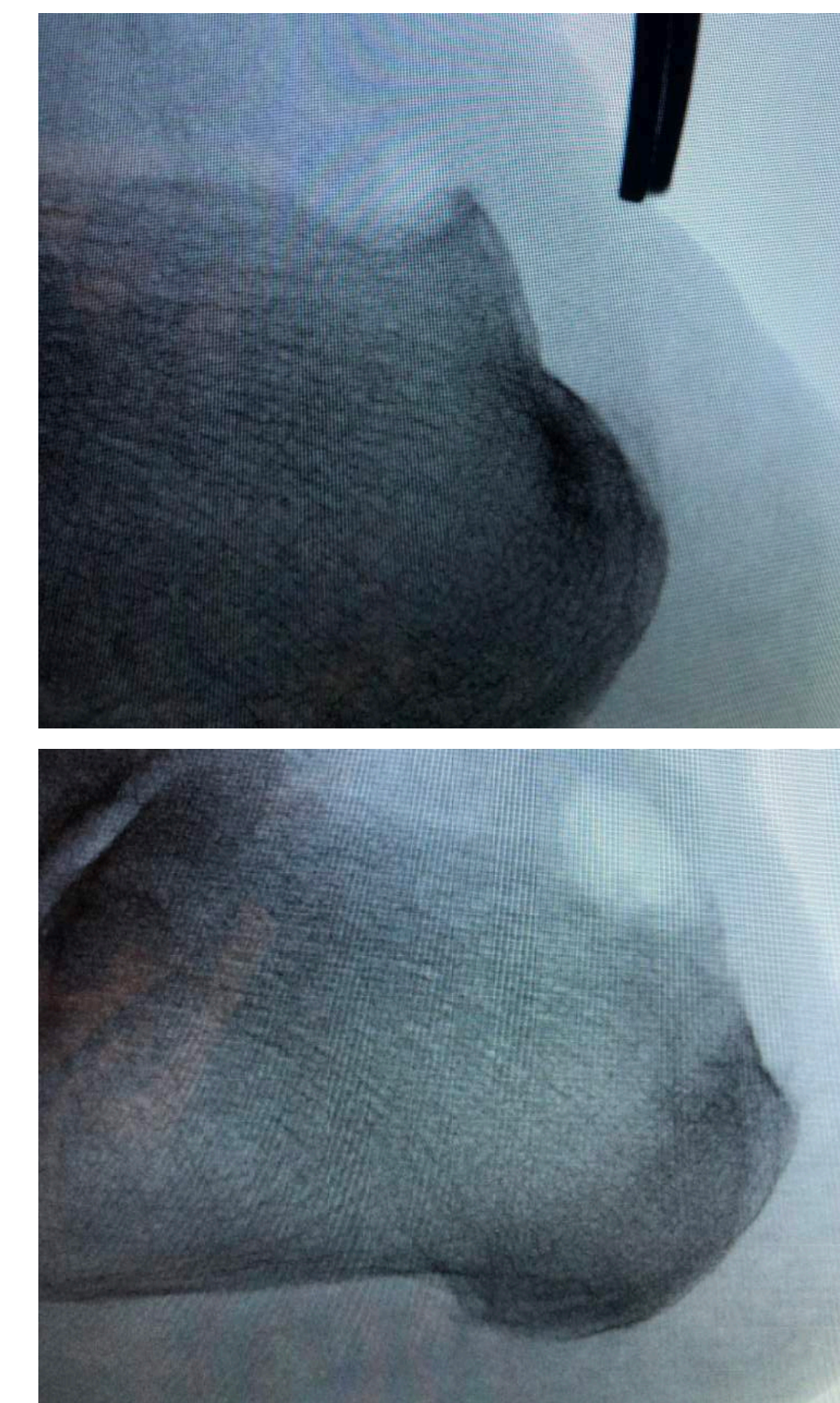
TXP MicroTip placement in the achilles mid-tendon substance for debridement and emulsification of calcific tissue



**Figures 6 & 7: Intra-operative Fluoroscopy Pre- and Post-Debridement**



**Figure 5: Tenex Palpation Guided Bone Debridement**



## Objective

To treat clinically symptomatic Haglund's syndrome via minimally invasive calcaneal bone resection along with debridement of soft tissue and tendon under endoscopic guided ultrasonic power.

## Discussion

The aim of surgical treatment for Haglund's syndrome is to debride the offending inflammatory soft tissue and associated calcaneal prominence. Traditionally, an open approach with detachment and reattachment of the achilles tendon may put patients at risk for complications such as re-rupture, post-operative pain, and wound dehiscence, particularly in patients with comorbidities such as DM and obesity.

Current literature suggests that Achilles endoscopy is safe, effective, and can produce good to excellent outcomes with few complications. Assisted repair of Achilles rupture or resection of mid-portion tendinopathy is well-represented in prior studies, but endoscopic assistance of percutaneous ultrasonic calcaneal spur resection has not been described. The patient in this case study was successfully treated for Haglund's syndrome using a direct percutaneous posterior approach utilizing ultrasonic power.

## Conclusions

The patient was mobilized in a CAM boot with WBAT in the immediate post-operative period for 2 weeks. She experienced no post-operative pain and no wound dehiscence at the 2 week follow up. At 8 weeks and beyond she continued to walk in regular shoe gear without pain and returned to activities of daily living.

Using this minimally invasive technique, we were able to restore the patient's quality of life while avoiding the risks associated with traditional surgery.

## References

1. Freed L, Ellis MB, Johnson K, Haddon TB. Fasciotomy and surgical tenotomy for chronic Achilles insertional tendinopathy: A retrospective study using ultrasound-guided percutaneous tenotomy approach. *J Am Podiatr Med Assoc* 2019 Jan/Feb; 109(1):1-8.
2. Chimenti R, Stover D, Flick B, Hall M. Percutaneous Ultrasonic Tenotomy Reduces Insertional Achilles Tendinopathy Pain with High Patient Satisfaction and a Low Complication Rate. *J Ultrasound Medicine* 2018; p1-7.
3. Chimenti RL, Cychosz CC, Hall MM, Phisitkul P. Current concepts review update: insertional Achilles tendinopathy. *Foot Ankle Int* 2017; 38:1160-1169.
4. Johnson KW, Zlatavras C, Thordarson DB. Surgical management of insertional calcific Achilles tendinosis with a central tendon splitting approach. *Foot Ankle Int* 2006; 27:245-250.
5. Gillis CT, Lin JS. Use of a central splitting approach and near complete detachment for insertional calcific Achilles tendinopathy repaired with an Achilles bridging suture. *J Foot Ankle Surg* 2016; 55:235-239.
6. Ahn JH, Ahn CY, Byun CH, Kim YC. Operative treatment of Haglund syndrome with central Achilles tendon-splitting approach. *J Foot Ankle Surg* 2015; 54:1053-1056.