

5<sup>th</sup> International Conference of

# Orthopedic Surgeons and Rheumatology

June 16-17, 2016 Alicante, Spain

## Ultrasound guided ultra-minimally invasive plantar fascia release

Manuel Villanueva, Alvaro Iborra, Guillermo Rodríguez, Felipe Benito and Pablo Sanz  
Avanfi Institute, Spain

**Introduction:** Plantar fasciitis is the most common cause of heel pain in active working adults between the ages of 25 and 65 years. It causes more than 1 million visits per year to health professionals in the USA. It accounts for about 10% of running related injuries. The classic indications for surgery are 6 months of unsuccessful conservative treatment and exclusion of other causes of heel pain. Current surgical options include open surgery, endoscopic surgery and fluoroscopy assisted surgery. We present an ultrasound guided ultra-minimally invasive technique for plantar fascia release.

**Material & Methods:** We performed a pilot study with 20 cadavers to ensure that the technique was accurate, reproducible and safe. In a second phase, we performed US guided plantar fascia release in 24 patients (26 cases) with chronic plantar fasciitis. The instrument set included long needles (a 16 gauge, 1.7 mm diameter Abbocath), a V-shaped straight curette, a blunt dissector, a hook knife (Aesculap 2, 3 mm), and an ultrasound device (Alpinion ECube15) with a 10-17 MHz linear transducer and the Needle Vision Plus™ software package. This surgical technique does not require ischemia. Using the ultrasound, we can identify the posterior tibial nerve and inject 3-5 cc of 2% mepivacaine. We make a 1-2 mm incision at the selected medial entry point and position the hook in the plane between the fat pad and the fascia before releasing it, thus minimizing damage to muscle tissue. The procedure takes 10 minutes and is performed under an outpatient regimen. No stitches are required, just adhesive strips and a padded dressing. Patients are encouraged to walk with crutches immediately after surgery without orthotics.

**Results:** We achieved the desired partial plantar fascia release in all the cadavers with no damage to the muscle, nerve or vessels. The clinical study population comprised 15 males and 9 females. There were two bilateral cases. Mean age was 39 years (37-59). Patients had received multiple previous conservative treatments for 1-3 years. However, their symptoms failed to resolve. Preoperative plantar fascia thickness ranged 0.7-1.2 cm. Preoperative VAS averaged 9 (8-10), AOSFAS averaged 30 points. Postoperative VAS averaged 1 (0-2) and AOSFAS 91 points (74-100). Patients returned to previous daily activities or sports. Some patients developed superficial hematomas that resolved in 2-3 weeks.

**Discussion:** Endoscopic release of plantar fascia have shown excellent results although some drawbacks remain including the need for ischemia, greater dissection and wound healing problems in patients with diabetes or vascular insufficiency. Fluoroscopy guided release does not allow us to visualize the muscle nor the fascia. Ultrasound guided ultra-minimally invasive release allows us to prevent damage to the plantar muscles and visualize the width and depth of the fascia. It is performed in outpatient regimen, it does not require ischemia or stitches and allows for immediate weight bearing, thus reducing wound healing problems and classic contraindications in patients with diabetes or vascular insufficiency. We think that ultrasound guided plantar fascia release may be the technique of choice in the future.

### Biography

Manuel Villanueva MD, PhD, is Medical Director of Avanfi Institute in Madrid, President of AECE (Spanish Association of Ecoguided Surgery) and Director of Unit for Ultrasound-guided surgery of Hospital Beata Maria, Madrid. Dr. Villanueva is the first Spanish orthopedic surgeon awarded by the AAOS (American Association of Orthopedic Surgeons) for surgical techniques (currently awarded in four times, including several Certificate of Merit). Author of eight surgical techniques included in the Educational Media Program of the AAOS, the most prestigious institution in the field of orthopedics and many international conferences and publications. Dr. Villanueva is the first surgeon in the world awarded by the AAOS for Ultrasound-guided ultraminimally invasive surgery. He is involved in research and teaching of these techniques and currently performs more than 20 surgical procedures guided by ultrasound.

[mwillanuevam@yahoo.com](mailto:mwillanuevam@yahoo.com)

### Notes: