

# Endoscopic Plantar Fascia Debridement for Chronic Plantar Fasciitis



James M. Cottom, DPM<sup>\*</sup>, Joseph S. Baker, DPM, AACFAS

## KEYWORDS

• Heel pain • Plantar fasciitis • Endoscopic • Debridement

## KEY POINTS

- When conservative therapy fails for chronic plantar fasciitis, surgical intervention may be an option.
- Surgical techniques that maintain the integrity of the plantar fascia will have less risk of destabilizing the foot and will retain foot function.
- Endoscopic debridement of the plantar fascia can be performed reproducibly to reduce pain and maintain function of the foot.

Plantar heel pain is one of the most common conditions seen in the clinics of foot and ankle surgeons. Approximately 10% of the general population will experience heel pain in the form of plantar fasciitis at least once in their lifetime.<sup>1–4</sup> The most commonly cited cause of plantar fasciitis is the pull of the proximal insertion of the plantar fascia on the calcaneus.<sup>5–8</sup> The plantar fascia serves an important role in the gait cycle, because it helps to support the arch of the foot as well as aids in resupination of the foot during propulsion.<sup>1,9,10</sup>

When conservative treatment of chronic plantar fasciitis is not successful, surgical intervention may become an option. A popular method of addressing this chronic condition is to perform a plantar fasciotomy, whereby the medial one-third to one-half of the plantar fascia is transected.<sup>11</sup> However, different investigators have shown that a plantar fasciotomy is not performed without consequence. Daly and colleagues<sup>12</sup> found a significant decrease in the height of the longitudinal arch as well as a less efficient gait in patients who had undergone plantar fasciotomy versus a control. A cadaveric study performed by Ward and colleagues<sup>13</sup> showed that as the plantar fascia was released sequentially from medial to lateral, the force increased on the remaining lateral fibers, and the subtalar joint lost its ability to resupinate.

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Florida Orthopedic Foot and Ankle Center, 2030 Bee Ridge Road, Suite C, Sarasota, FL 34239, USA

<sup>\*</sup> Corresponding author.

E-mail address: [jamescottom300@hotmail.com](mailto:jamescottom300@hotmail.com)

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In light of these findings, the authors propose an innovative technique to address chronic plantar fasciitis surgically, without disrupting the integrity of the plantar fascia. This technique was introduced to the senior author (J.M.C.) (K Bramlett, MD, personal communication, 2011).

### OPERATIVE TECHNIQUE

The patient is first given a popliteal nerve block in the preoperative holding area and is then brought in to the operating room. The patient is then placed supine on the operating table with the operative extremity in external rotation, so that the lateral border of the foot is allowed to lay flat against the table. A bump placed under the contralateral hip can be used to assist in positioning when necessary. Following exsanguination of the extremity, a thigh tourniquet is then inflated to 300 mm Hg. Using a surgical marker, the medial malleolus is then outlined, and a straight line is drawn from the posterior aspect of the medial malleolus to the heel. The first portal is marked out along this line at or slightly above the level of the plantar fascia. The second portal is then placed 2 cm distal to the first portal at or slightly above the level of the plantar fascia (Fig. 1). The intention is to enter the space directly superior to the plantar fascia, so it is helpful to place the portals slightly superior to the plantar fascia.

Full-thickness incisions can then be made with a number 11 blade at the portal sites. A curved hemostat is used for blunt dissection and to identify the plantar fascia. A 4.0-mm camera can then be placed into the distal portal, while a 3.5-mm shaver is introduced into the proximal portal (Fig. 2). A spinal needle is then inserted from the plantar fell into the most painful area, which should be identified preoperatively. This technique allows for direct visualization and debridement of the most painful part of the plantar fascia. This technique can also be used to orient the surgeon during the procedure, because bony landmarks are scarce. Debridement of inflammatory tissue along the superior aspect of the plantar fascia can then be debrided using the arthroscopic shaver under direct visualization (Fig. 3). The calcaneal spur can then be identified and removed as necessary (Fig. 4). Removal of the spur can then be confirmed with intraoperative fluoroscopy (Fig. 5). The plantar fascia can be thinned out with a



**Fig. 1.** The operative extremity is positioned in external rotation, with the lateral border of the foot against the operating room table. The medial malleolus is traced, and a line is drawn along its posterior border. The proximal portal is established slightly superior to the level of the plantar fascia. The distal portal is established at the same level, 2 cm distal to the first portal.

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