Endoscopic Plantar Fascia Release Using the Smith & Nephew ECTRA® II Ligament Release System

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Introduction

The Smith & Nephew ECTRA II Ligament Release System can be used as a simple, effective means of performing endoscopic plantar fascia release.

The ECTRA II System provides the specific reusable instrumentation required for endoscopic plantar fascia release, including a VideoEndoscope (4 mm x 30°, 35 mm focal length, same-side light post direction), slotted cannula, obturator set, Ragnell retractors, blunt dissector (curved), and probe (Figure 1). The ECTRA II System also includes a reusable, detachable obturator handle. During endoscopic plantar fascia release, this handle may be interchangeably attached to the conical obturator, boat nose obturator, or dissecting obturator to enhance ease of obturator use.

Designed to be used with the ECTRA II System, the ECTRA II Disposable Kit includes the specific disposable instrumentation required for endoscopic plantar fascia release: a probe knife, triangle knife, and retrograde knife (Figure 2).

This two-portal plantar fasciotomy technique employs medial and lateral portals with blunt dissection transversing the heel superficial to the plantar fascia. Using the ECTRA II System for this technique, the surgeon is able to cut from either portal, maintain constant visualization, and minimize endoscopic lens fogging with good air flow. The medial 1/3–1/2 of the plantar fascia is released (the entire plantar fascia should never be released).

This procedure is most appropriate in carefully selected patients for whom a 6–9 month course of conservative, non-operative treatment has failed to provide relief. Patients should have no signs of nerve entrapment upon physical exam and/or nerve testing and should have negative blood tests for inflammatory arthritis.
Patient Preparation

1. Place the patient in the supine position on the table.
2. Use an ankle block, regional, or general anesthetic.
3. Apply an ankle or calf tourniquet.

Technique

1. Mark the location of the medial portal. Draw a line distally from the posterior aspect of the medial malleolus to the intersection of the medial origin of the plantar fascia at the calcaneal tuberosity (Figure 3).
2. Create an incision through the skin at the location of the medial portal (Figure 4).
3. Perform blunt dissection to the medial edge of the plantar fascia, being careful to avoid the calcaneal nerve branch (Figure 4).
4. Use a Freer elevator to clear the subcutaneous tissue from the plantar fascia transversely.
5. Establish the location of the lateral portal by placing the obturator through the medial portal under the plantar fascia until it is palpable against the lateral skin. Keep the obturator parallel to the floor (Figure 5).
6. Make an incision over the protruding obturator (Figure 5).
7. Place the slotted cannula over the obturator through the lateral portal towards the medial portal (Figure 6).
8. Place the VideoEndoscope laterally (Figure 6).
9. Remove fluid and debris from the visual field using cotton swabs.
10. Measure the width of the plantar fascia by placing a ruler over the posterior heel.
11. For a point of reference, mark the probe and knives to the length of the plantar fascia that will be released.
12. Insert the probe through the medial portal to check the measurements of the plantar fascia.
13. Dorsiflex the ankle, foot, and toes to place tension on the plantar fascia (Figure 6).
14. Insert the triangle knife through the medial portal (Figure 6).
15. Make an incision at the predetermined lateral border of the fasciotomy (Figure 7).

Figure 6. Releasing the medial aspect of the plantar fascia

Figure 7. Using the triangle knife to initiate the release
16. Insert the retrograde knife through the medial portal and release the plantar fascia, pulling the knife from lateral to medial. The release is complete when the flexor digitorum brevis muscle is seen (Figures 8 and 9).

17. Release the tourniquet, irrigate the wounds, and close with non-absorbable suture.

18. Apply a compression dressing and place the patient into a walker boot.

19. Patients start partial weight bearing in the boot with crutches 1–2 days after surgery.

20. Full weight bearing is initiated after the wound has healed.
References

Ferkel, Richard D. Future Developments. 
*Arthroscopic Surgery: The Foot and Ankle*  

Bazaz, Rajesh; Ferkel, Richard D. Results of 
Endoscopic Plantar Fascia Release. 
Additional Instruction

Prior to performing this technique, consult the Instructions For Use provided with individual components, including indications, contraindications, warnings, cautions, and instructions.

Ordering Information

Call +1 800 343 5717 in the U.S. or contact your authorized Smith & Nephew representative to order the ECTRA™ II System, 35 mm (REF 4143) or any of the following components:

<table>
<thead>
<tr>
<th>REF</th>
<th>Description</th>
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<tbody>
<tr>
<td>3896</td>
<td>VideoEndoscope, 35 mm</td>
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<tr>
<td>4120</td>
<td>Slotted cannula</td>
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<tr>
<td>4101</td>
<td>Blunt dissector, curved</td>
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<tr>
<td>3856</td>
<td>Probe</td>
</tr>
<tr>
<td>4283</td>
<td>Palmer arch suppressor</td>
</tr>
<tr>
<td>4450</td>
<td>Hand holder and sterilization tray with cover</td>
</tr>
<tr>
<td>4432</td>
<td>Detachable obturator handle</td>
</tr>
<tr>
<td>4433</td>
<td>Conical obturator</td>
</tr>
<tr>
<td>4434</td>
<td>Boat nose obturator</td>
</tr>
<tr>
<td>4435</td>
<td>Dissecting obturator</td>
</tr>
<tr>
<td>4452</td>
<td>Ragnell retractor (2 included with system)</td>
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The ECTRA II Disposable Kit (REF 4116 – includes 8 swabs, 3 disposable knives, and 1 sterile hand pad) or any of the following components may also be ordered:

<table>
<thead>
<tr>
<th>REF</th>
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<tbody>
<tr>
<td>4447</td>
<td>Probe knife, beige, sterile, box of 6</td>
</tr>
<tr>
<td>4448</td>
<td>Triangle knife, green, sterile, box of 6</td>
</tr>
<tr>
<td>4449</td>
<td>Retrograde knife, blue, sterile, box of 6</td>
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Caution: U.S. Federal law restricts this device to sale by or on the order of a physician.

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