Equinus deformity has been associated with over 96% of biomechanically related foot and ankle pathologies.  

**Gastrocnemius Aponeurosis Intra-Muscular Recession**
- Medial Mini-Open Incision (2.5cm - 3cm)
- Potentially less muscle atrophy and weakness compared to Strayer procedure
- Reliable and repeatable dorsiflexion improvement
- Proximal intramuscular approach avoids the sural nerve
- May permit early weight bearing and relatively shorter periods of cast immobilization

**Controlled and Guided Release**

**Versatile**
- Recession can be done on both gastrocnemius and soleus muscles as identified by Silfverskiold test

**Visualization of an Open Procedure**
- Improved visualization compared to endoscopic

**Convenience of Sterile Pack Kit**
- No endoscopic equipment required
- No ancillary draping time or associated costs
Silfverskiold Test

1. Patient is placed in supine position
2. The subtalar joint is held in the neutral position
3. The patient’s ankle dorsiflexion is measured with the knee in extension and flexion.

If ankle equinus (<10° dorsiflexion) is observed only with knee extension then gastrocnemius equinus is present. Isolated lengthening of the gastrocnemius should resolve the contracture.

If ankle equinus is observed both with knee extension and flexion then gastrosoleal equinus is present. Lengthening of the gastrocnemius and soleus fascia is required to resolve the contracture.

Surgical Technique

1. After the diagnosis of equinus via the Silfverskiold test, use the intramuscular mini-open Baumann procedure. This procedure is done with the patient in the supine position, with the leg slightly bent and externally rotated.

2. Use a scalpel to make a mini (3cm) medial, longitudinal incision approximately two finger widths below posterior aspect of the tibia at the mid-calf. Blunt dissection is performed to the posterior fascia. A similar longitudinal incision is made in the fascia at the level of the gastro-soleus interval. Continue blunt finger dissection between gastrocnemius and soleus muscle bellies.

   NOTE: Incision should be proximal to the gastroc run-out; especially in patients with thin muscle.

3. Carefully remove the recession guide from the packaging. Do not engage the recession blade with the guide at this stage.
4. Use index finger to open the intramuscular location between the gastrocnemius and soleus muscles. Remember to check for the plantaris tendon on the back of the soleus muscle belly. If located, transect the tendon. Insert the recession guide between the gastrocnemius and soleus muscles until it can be palpated at the lateral side of the leg.

5. a. Twist the recession guide 90 degrees so that the blade channel is facing the gastrocnemius (the guide handle will point away from the muscle fascia being cut). The white fascia of the gastrocnemius and soleus muscles should be visualized.

   b. Hook the most distal end of the recession guide to the lateral muscle belly for stabilization.

6. Advance the tissue protector on the guide to the medial border of the gastrocnemius muscle belly. This is designed to protect the surrounding skin and soft tissue from the blade.
7. With knee extended, **dorsiflex** the foot to tension the gastrocnemius muscle and stabilize the recession guide in the gastro-soleus muscle gap. Insert the recession blade into the blade channel.

Slowly push the blade forward while maintaining the foot in maximum dorsiflexion to keep the gastrocnemius under tension. Continue until blade reaches distal channel stop.

**Caution:** Ensure fingers are clear of the blade channel.

**Note:** Although one push cycle of the recession blade is recommended, digital palpation should be done to confirm complete recession of the aponeurosis. Any remaining fibers can be released by a partial second pass of the blade under tension. For difficult lateral fibers, it may be helpful to slightly lift the guide to increase lateral pressure against the gastrocnemius. Depending on surgeon preference and patient specifics, if desired dorsiflexion is achieved before blade is fully advanced, it is acceptable to stop recession. Twist recession guide 90 degrees, advance blade to the end of the guide and remove the complete assembly.

8. Once the recession blade is at dead stop and embedded into the lateral end of the guide, twist guide 90 degrees and remove from the intramuscular location.


**Optional Soleus Recession**

If Silfverskiold test indicates gastrosoleal equinus and gastrocnemius recession alone did not provide the desired dorsiflexion, remove blade from guide. Repeat steps 1-9 with blade channel facing the soleus.
Gastrocnemius Recession System

Sterile Procedure Kit

- Sterile, OR-ready instrument
- Designed for repeatable outcomes
- Single use

References

2 Isolated Recession of the Gastrocnemius Muscle: The Baumann Procedure. John E. Herzenburg, MD; Bradley M. Lamm, DPM; Chris Corwin, DPM; John Sekel, DPM. Foot & Ankle International. 2007.


4 Lengthening of the Gastrocnemius-Soleus Complex: An Anatomical and Biomechanical Study in Human Cadavers. Gregory B. Firth, MBBCh, FCS(Orth)SA, MMed(Orth), Michael McMullen, MPhil, FRCS(T&Orth), Terence Chin, MBBS, Francies Ma, MBBS, Paul Selber, MD, FRACS, Norman Eizenberg, MBBS, Rory Wolfe, BSc, PhD, and H. Kerr Graham, MD, FRCS(Ed), FRACS


ORDERING INFORMATION

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PV-2527-01</td>
<td>PiroVue™ Gastroc Recession System Sterile Kit</td>
</tr>
<tr>
<td></td>
<td>Recession Guide 25mm Ht., Blade 2.7mm, 1 Count</td>
</tr>
</tbody>
</table>

This surgical technique guide provides a recommended procedure for using PiroVue™ Mini-Open Gastrocnemius Recession System. The content provided puts forth technique guidance, however, the surgeon must consider the individual needs of the patient making appropriate adjustments when and as required.

Nextremity Solutions, i3, and PiroVue are trademarks of Nextremity Solutions, Inc.

Patent pending

©2017 Nextremity Solutions  LIT-1539 Rev. 01

Designed & Developed with:

Powered by Nextremity Solutions, i3 Strategic Solutions develops innovative, intelligent, and integrated musculoskeletal products. To learn more, visit i3strategicsolutions.com.

Manufactured by:

Nextremity Solutions
210 N. Buffalo St.
Warsaw, IN 46580 U.S.A.
(732) 383-7901
nextremitysolutions.com