ORGANOGENESIS

COMPLETE PROTECTION

NuShield®: a surgical barrier that surgeons and patients can rely on[1–3]

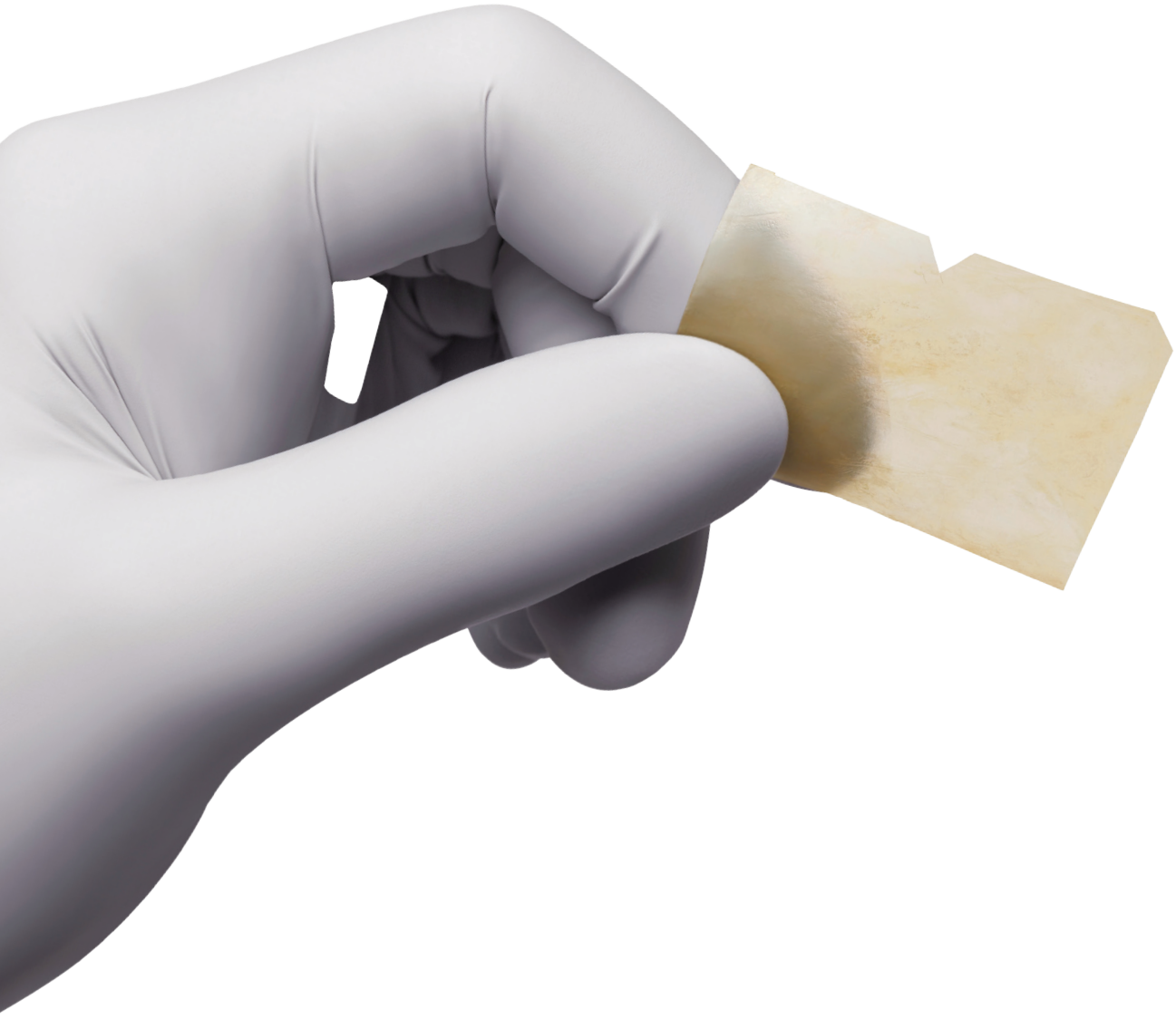
Surgical Casebook — Foot & Ankle

NuShield®

ORGANOGENESIS

NuShield®

Sterilized, Dehydrated Placental Allograft



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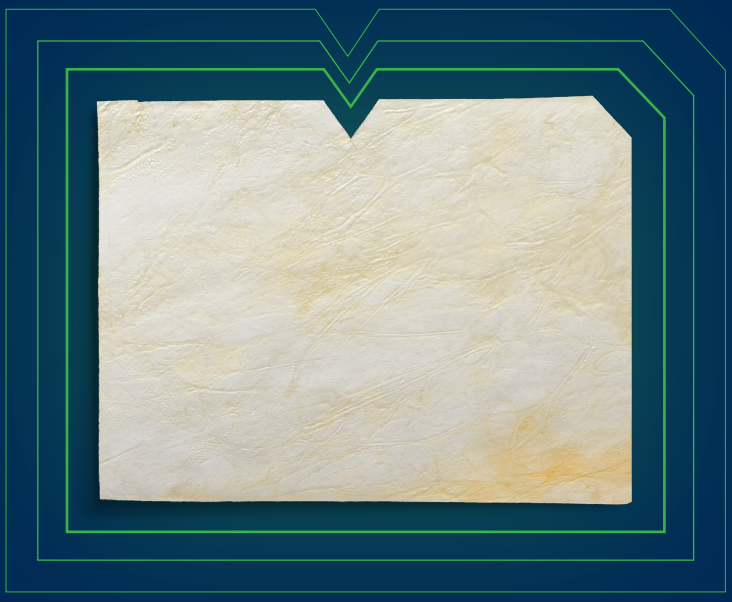
Case studies with photos are courtesy of Alan Ng, DPM.

UTILIZING NUSHIELD AS A BARRIER IN FOOT & ANKLE SURGERY

A complete dehydrated placental allograft

NuShield is a dehydrated placental allograft surgical barrier that retains all native tissue layers, including the spongy layer. It may be used as a surgical barrier to support a healing environment for a wide range of procedures.



84

DAYS INTACT

In a Lewis rat implantation model, NuShield was detected and intact out to 84 days.[4]

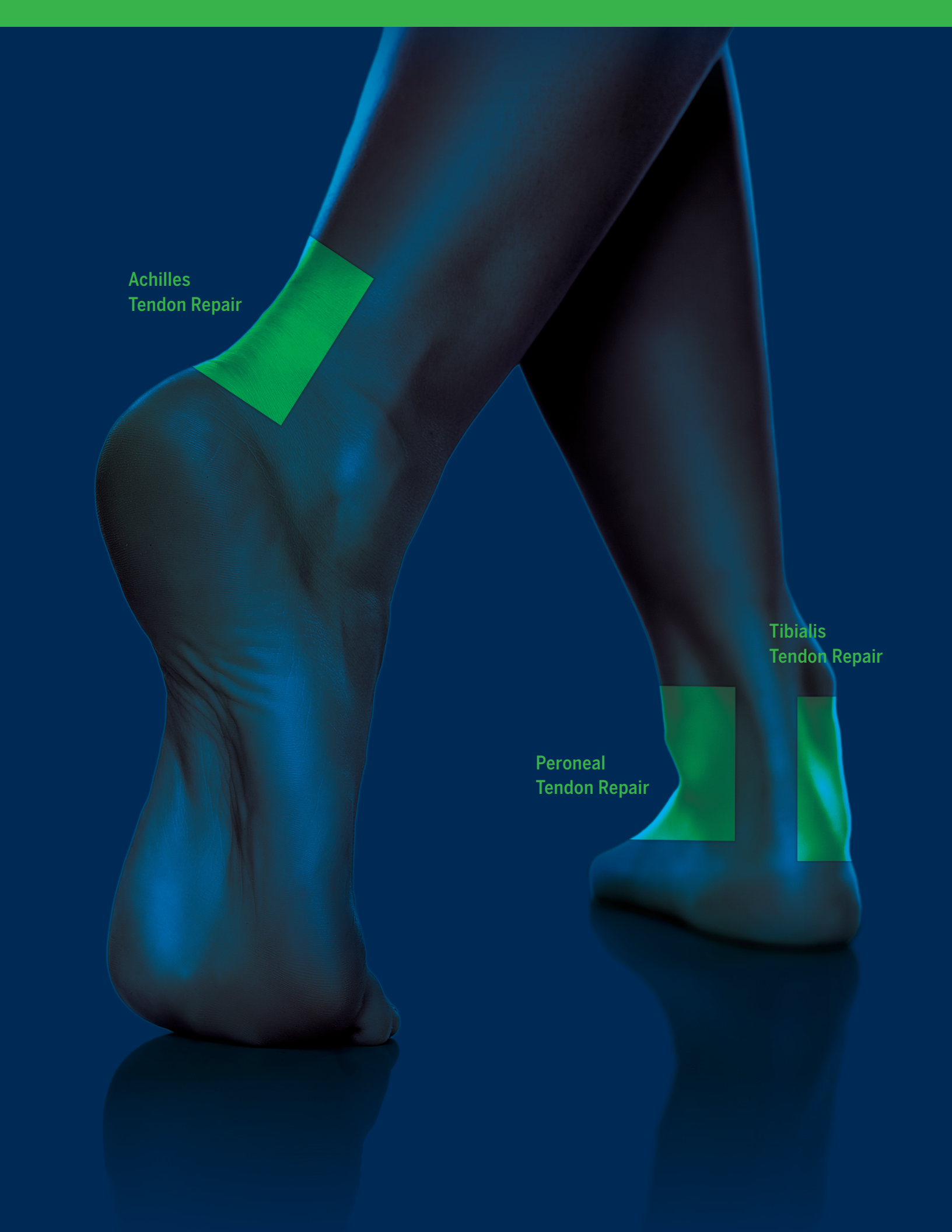
640

RETAINED PROTEINS

Retains 640 proteins, including growth factors, cytokines, and key extracellular matrix components.[3]

MULTIPLE SIZES

Multiple sizes are available for convenient storage at room temperature.


Achilles
Tendon Repair
Tibialis
Tendon Repair
Peroneal
Tendon Repair

CASE 1

CHEILECTOMY FOR HALLUX LIMITUS

Clinical History

- 37-year-old male
- Pain with ambulation and limited range of motion of hallux
- ~15˚ of dorsiflexion and 30˚ of plantarflexion plus positive crepitus with joint range of motion
- Failed pain management included NSAID therapy, corticosteroid injections and custom orthotic use

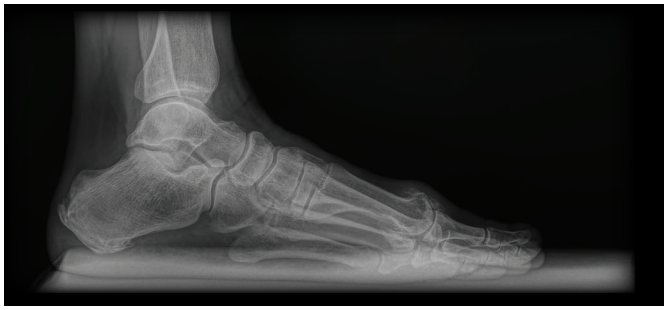


Figure 1.1

Surgical Intervention

A standard cheilectomy with a dorsal approach over the first metatarsophalangeal joint was performed. Loose bodies and spurring were noted about the joint *(Figure 1.2)* and were adequately debrided *(Figure 1.3)*. Following remodeling of the first metatarsal and proximal phalanx, the joint was inspected and a significant lateral osteochondral defect was noted. A NuShield was wrapped around the first metatarsal head as a surgical barrier to support healing *(Figure 1.4)*.

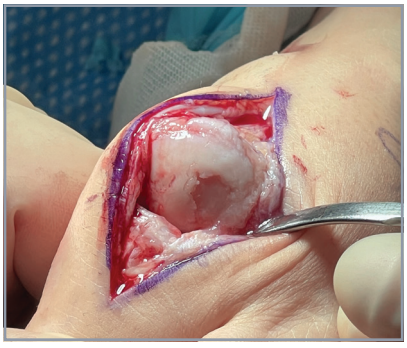


Figure 1.2

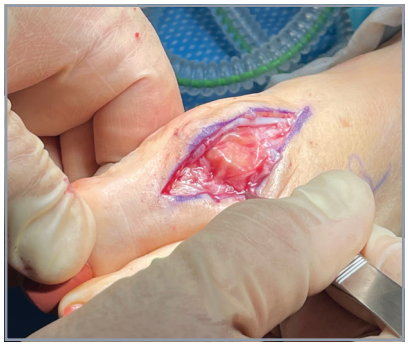


Figure 1.3

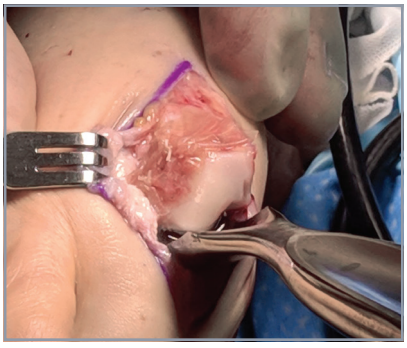


Figure 1.4

Follow-Up

- Following suture removal, the joint was mobilized with passive range of motion.
- Four weeks post-op, physical therapy was initiated.
- The patient had smooth range of motion of the metatarsophalageal joint with ~35˚ of dorsiflexion and 40˚ of plantarflexion. No crepitus or grinding of the joint was noted with range of motion, and the patient was back to normal shoe wear and activity without limitation.

CASE 2

WEIL OSTEOTOMY WITH INTERPOSITIONAL ARTHROPLASTY

Clinical History

- 65-year-old female
- Long-standing pain to second metatarsophalangeal joint
- Elongated second metatarsal with mild transverse plane deformity of second digit
- Failed pain management included NSAID therapy, shoe wear modification and offloading with orthotics

Surgical Intervention

A standard dorsal incision was made over the second metatarsophalangeal joint. The joint was exposed and a Weil osteotomy was performed to shorten the second metatarsal *(Figure 2.1)*. The plantar plate was inspected and repaired at this time and the lateral capsule was reefed to provide additional stability. A NuShield was cut in half and one half was placed over the second metatarsal head as a surgical barrier to support healing *(Figure 2.2)*. The other half was placed dorsally over the joint prior to capsular closure to support the prevention of adhesions that would contribute to further joint instability. Standard closure was performed following NuShield placement.

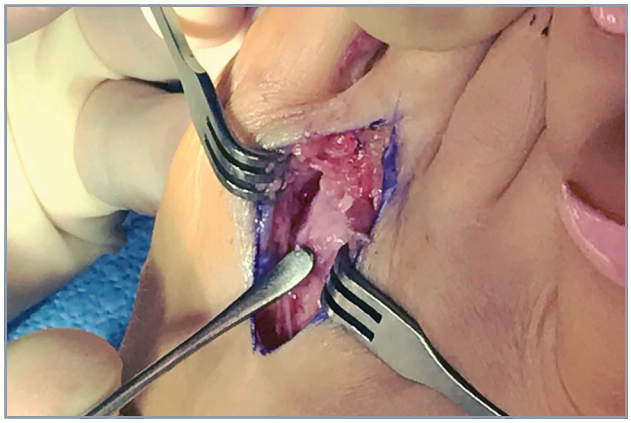


Figure 2.1

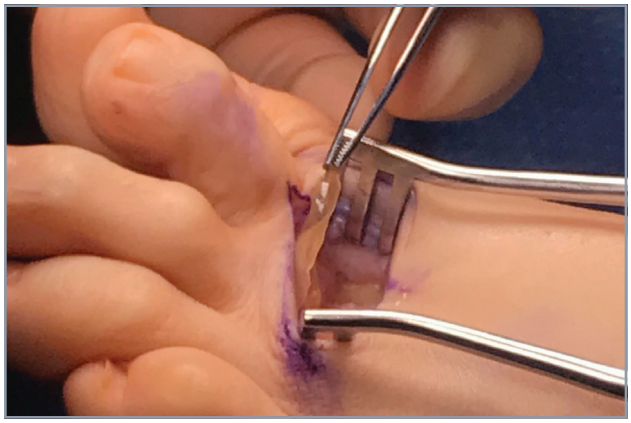


Figure 2.2

Follow-Up

- Immediately post-surgery, the patient was allowed to ambulate in a forefoot offloading shoe.
- Two weeks post-op, passive range of motion was initiated following suture removal to mobilize the joint.
- The patient returned to normal shoe wear at six weeks and returned to full activity at 12 weeks. She did not develop any significant joint displacement or contractures post-surgically.

CASE 3

PERONEUS BREVIS TENDON REPAIR

Clinical History

- 55-year-old female
- Pain to the lateral ankle with jogging and cycling activities
- Longitudinal split tearing and tendinosis of the peroneus brevis tendon
- Failed pain management included physical therapy and NSAIDS

Surgical Intervention

A standard incision was made over the posterior aspect of the fibula. The peroneal tendon sheath was incised and both the longus and brevis tendons were inspected. The brevis tendon demonstrated significant longitudinal split tearing as well as flattening. Any non-viable tendon was sharply excised and the tendon was tubularized using a running 2-0 PDS stitch. A NuShield was then wrapped around the tendon to support the prevention of adhesions *(Figure 3.1)*. The NuShield wrap was tacked in place using 4-0 Monocryl *(Figure 3.2)*. The superior peroneal retinaculum was then repaired with 0 Vicryl, and the subcuticular tissue and skin were closed in standard fashion.

Figure 3.1

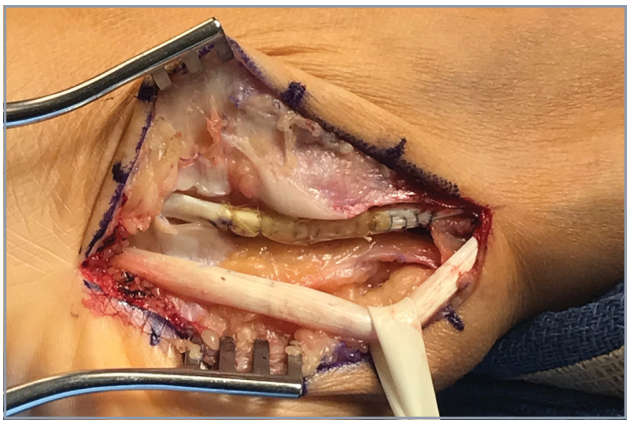


Figure 3.2

Follow-Up

- Immediately post-surgery, the patient's leg was placed in a cast and remained non-weight bearing for three weeks.
- Three weeks post-op, the patient was weight bearing with a CAM walker. At six weeks, physical therapy was initiated.
- The patient returned to normal shoe wear at six weeks and resumed normal activity without discomfort.

CASE 4

POSTERIOR TIBIAL TENDON REPAIR

Clinical History

- 55-year-old female
- Pain with standing, activity and loss of arch
- Significant tendinosis of the posterior tibial tendon with longitudinal tearing
- Failed pain management included physical therapy and bracing

Surgical Intervention

A standard incision was made over the course of the posterior tibial tendon. The tendon sheath was identified and sharply incised. The posterior tibial tendon was then inspected and was noted to demonstrate significant tendinosis with definitive tearing along its course. Any non-viable tendon was sharply excised and the tendon was repaired and tubularized using a running 2-0 Prolene stitch. A NuShield was then wrapped around the tendon to support the prevention of adhesions *(Figures 4.1–4.4)*. The peroneal tendon sheath was then repaired and the subcutaneous tissue and skin were closed in standard fashion.

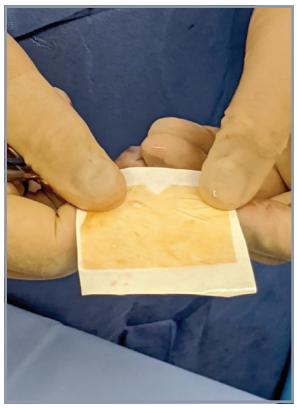


Figure 4.1

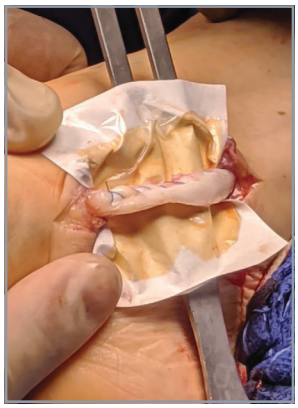


Figure 4.2

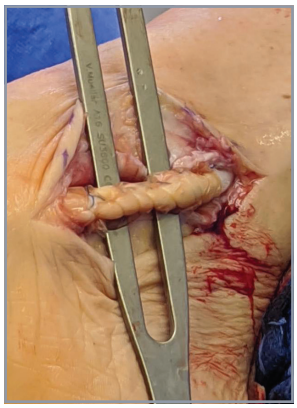


Figure 4.3

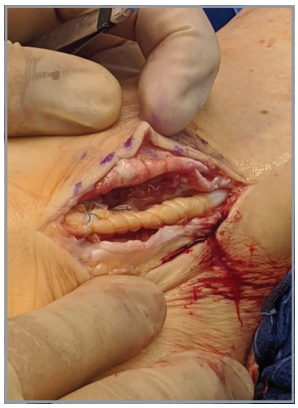


Figure 4.4

Follow-Up

- Immediately post-surgery, the patient's leg was placed in a cast and remained non-weight bearing for four weeks.
- Four weeks post-op, the patient was weight bearing with a CAM walker. At six weeks, physical therapy was initiated.
- The patient returned to normal shoe wear at 10 weeks and resumed normal activity without discomfort or loss of medial arch.

CASE 5

DECOMPRESSION OF SUPERFICIAL PERONEAL NERVE ENTRAPMENT

Clinical History

- 45-year-old female
- The patient suffered a traumatic contusion weeks prior to office visit
- Paresthesias present in the distribution of the superficial peroneal nerve
- Failed pain management included oral and topical neuropathic medications

Surgical Intervention

A standard incision was made in a vertical fashion proximal to the lateral malleolus. The superficial peroneal nerve was carefully identified and freed from its surrounding tissue and the overlying fascia *(Figure 5.1)*. Following exposure of the nerve, a NuShield was wrapped around the nerve with the stromal side facing the nerve and tacked into place with 4-0 Nylon *(Figures 5.2 & 5.3)*. A standard subcuticular and skin closure was performed.

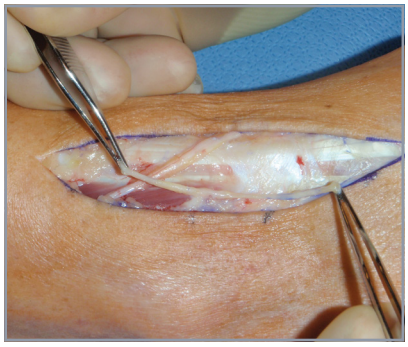


Figure 5.1

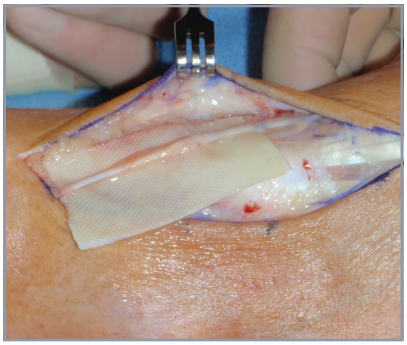


Figure 5.2

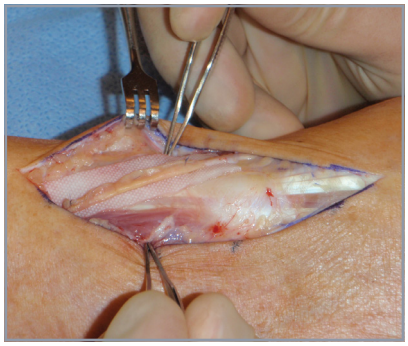


Figure 5.3

Follow-Up

- Immediately post-surgery, the patient's leg was placed into a soft dressing and began weight bearing with a CAM walker. Passive range of motion was initiated.
- 12 weeks post-op, the patient had a complete resolution of neuritic symptoms.

CASE 6

TARSAL TUNNEL DECOMPRESSION

Clinical History

- 70-year-old male
- Pain and paresthesias present in the distribution of the tibial nerve
- Tinel's sign was present upon examination and symptoms worsened with walking and standing
- Failed pain management included oral neuropathic medication, physical therapy and steroid injections to the tarsal tunnel

Surgical Intervention

A standard incision was made over the tarsal tunnel and the subcutaneous tissue was bluntly dissected. The laciniate ligament was incised and the tibial nerve was directly isolated and visualized. A NuShield was carefully wrapped around the tibial nerve with the stromal side facing the nerve and tacked into place with 4-0 Monocryl *(Figures 6.1–6.4)*. Meticulous hemostasis was achieved, and the overlying fascia of the tarsal tunnel was left unrepaired to prevent scar tissue formation. A standard subcuticular and skin closure were then utilized.

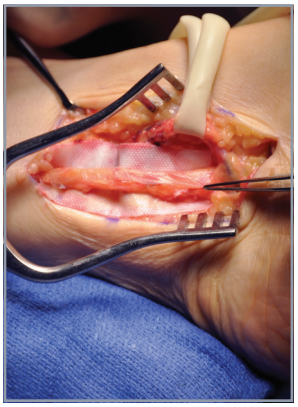


Figure 6.1

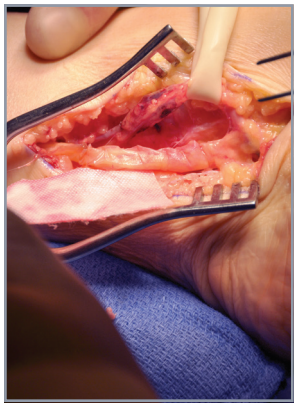


Figure 6.2

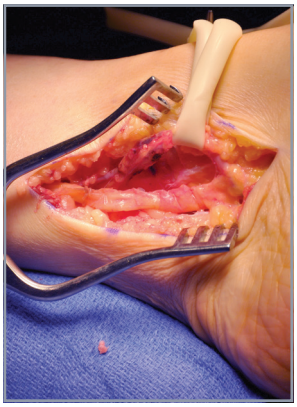


Figure 6.3

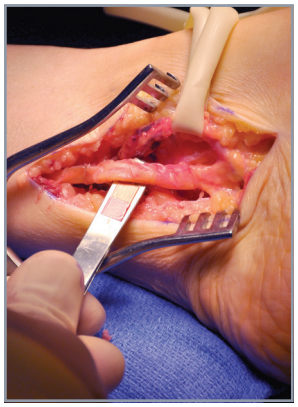


Figure 6.4

Follow-Up

- Immediately post-surgery, the patient's leg was placed into a soft dressing and began weight bearing with a CAM walker at two weeks post-op. Passive range of motion was initiated.
- Neuritic symptoms resolved by six weeks post-op, and by 12 weeks the patient resumed normal daily activities without recurrence of symptoms.

ORGANOGENESIS

NuShield®

Sterilized, Dehydrated Placental Allograft

For additional product or ordering information, talk with an Organogenesis Tissue Regeneration Specialist.

References: 1. Allograft Tissue Information and NuShield® Instructions for Use. Canton, MA: Organogenesis Inc; 2020. **2.** Data on file. NS_DR-005. Organogenesis Inc. **3.** Data on file. NS_DR-006. **4.** Data on file. NS_DR-006. Organogenesis Inc.