

Utilization of a Next Generation Decellularized Dermal Allograft to Augment the Repair of a Ruptured Quadriceps Tendon

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CASE STUDY

Surgical Summary

Clinical Presentation:

- 80-year-old male, retired physician, presented in clinic one week post fall with inability to obtain full knee extension.
- Previous history of knee stiffness with zero pain.
- Focused examination:
 - Edematous left knee
 - Palpable defect over quadriceps tendon
 - Unable to obtain full knee extension
 - Knee flexion inhibited by pain and edema
 - Knee ligaments stable on examination
- Standard radiographs showed mild patella baja.
- MRI demonstrated rupture of quadriceps tendon with large effusion (Figure 1).
- Diagnosis: Left quadriceps tendon rupture, delayed diagnosis.
- Surgical intervention required.

Intraoperative Findings:

- Complete rupture of left quadriceps tendon with 5 mm cuff of tendon remaining on patella; shredding of tendon also noted.

DERMA [PURE]
dCELL technology

Figure 1. MRI demonstrated rupture of quadriceps tendon with large effusion.

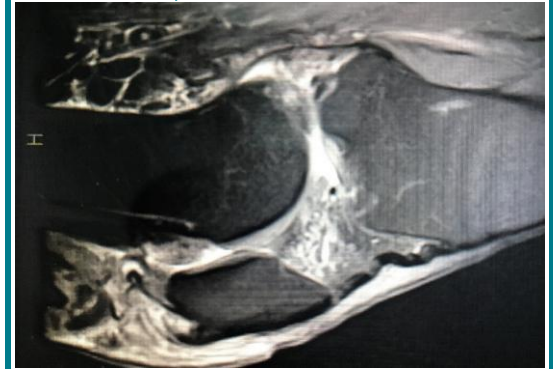


Figure 2. Remnant of quadriceps tendon with shredding noted.



Figure 3. DermaPure® being implanted.



DermaPure® Implantation
7 cm x 10 cm
Basement Membrane Outer-Most

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Surgical Procedure:

- Remnants of tendon imbricated and inserted onto cuff of tissue of proximal pole of patella; remnant quadriceps aponeurosis tubularized (Figure 2).
- DermaPure® decellularized dermal allograft placed as reinforcement by wrapping the tendon, incorporating the
- remaining quadriceps aponeurosis, proximal pole of the soft tissue cuff of the patella, and medial and lateral
- retinaculum (Figures 3 & 4).
- Multilayer closure over drains performed.

Post-Operative Notes:

- Immediately after surgery, able to perform full weightbearing with knee immobilizer. Isometric quadriceps strengthening initiated.
- Three month follow-up:
 - Quadriceps strength 5/5
 - Painless ROM with mild limitation of flexion and extension, consistent with pre-injury history (Figures 5 & 6)

Surgeon Perspective:

“DermaPure demonstrated excellent handling characteristics and was easy to use for myself and the surgical technicians.”

Figure 4. DermaPure® reinforcement of quadriceps repair.



Figure 5. Painless ROM with mild limitation of extension.



Figure 6. Painless ROM with mild limitation of flexion.

