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

Christopher Bibbo DO, FACS, FAAOS
Pensacola, FL
Board Certified, American College of Surgeons and American Academy of Orthopaedic Surgeons

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.

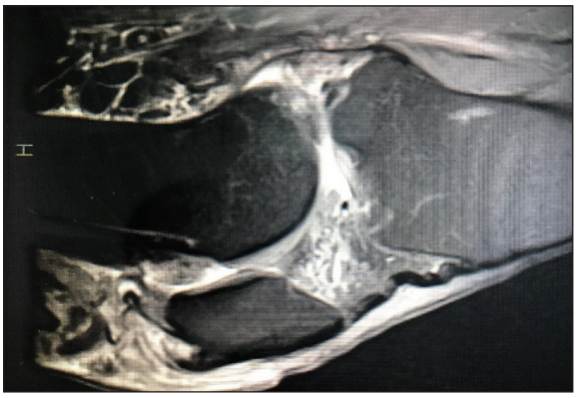

Figure 1. MRI demonstrated rupture of quadriceps tendon with large effusion.

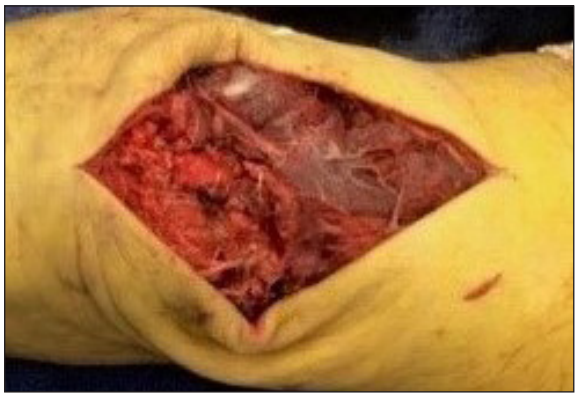

Figure 2. Remnant of quadriceps tendon with shredding noted.

Surgeon Perspective:

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

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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.

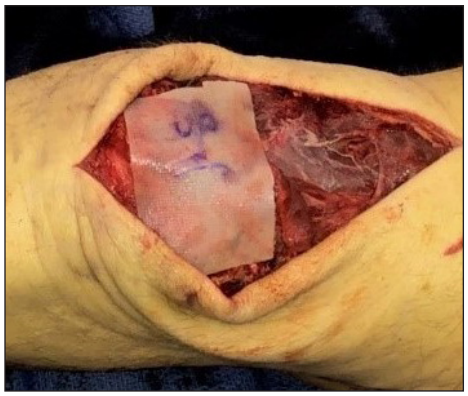

Figure 3. DermaPure® being implanted.

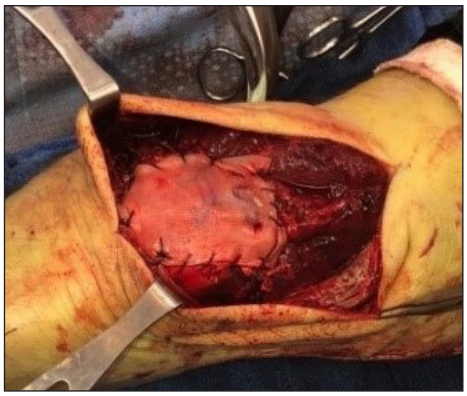

Figure 4. DermaPure® reinforcement of quadriceps repair.

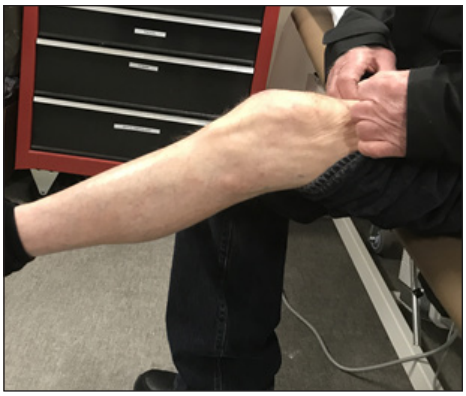

Figure 5. Painless ROM with mild limitation of extension.

Post-Operative Note:

- 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)

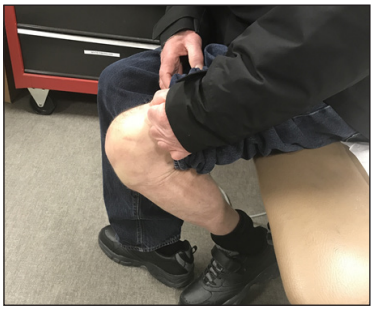

Figure 6. Painless ROM with mild limitation of flexion.

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