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Case Example

Surgical Repair of Complete Achilles Rupture with Placement of a Lyophilized Dehydrated Complete Human Placental Membrane Allograft

Technology Platform

Placental membrane allografts have increasingly been used as coverings for acute and chronic wounds and as protective barriers in various surgical applications. StimLabs' lyophilized dehydrated complete human placental membrane (dCHPM) allograft is the first intact, complete placental membrane allograft to be commercialized.[1] The lyophilized dCHPM allograft is processed using Clearify™, StimLabs' breakthrough approach to processing the placental membrane without ever delaminating the membrane. This patented technology effectively cleans and preserves the native tissue architecture, while retaining key signaling components like growth factors and cytokines.[1,2] Lyophilized dCHPM has demonstrated ideal handling characteristics and has been shown to last at least three weeks subcutaneously in a mouse model.[1] Lyophilized dCHPM is intended for use as a wound covering or barrier membrane.[1]

Clinical History

A 27-year-old female reported a traumatic tear during athletic activity and presented with symptoms including pain and severe swelling over the Achilles tendon and retrocalcaneal bursitis. The patient was diagnosed via X-ray scans with a complete rupture of the Achilles tendon at the musculotendinous junction. Due to the severity of diagnosis, the patient was exempt from conservative therapy and immediately treated surgically.

Procedure

A longitudinal incision was made medial to the Achilles tendon. The incision was carried down through the paratenon to expose the site of rupture, and full-thickness soft tissue flaps were created to include the paratenon. The Achilles tendon was debrided of excess irregular tissue at the stumps and inspected for other defects and signs of tendinopathy. A suture loop was woven through both the distal and proximal stump and out of the respective tendon ends. The suture ends were passed through the opposite tendon stumps and suture knots were sequentially tied proximal and distal to the woven suture in each tendon stump. The final suture configuration was established after the repassing and tying of medial and lateral suture tails (Figure 1a). A 6 x 8 cm lyophilized dCHPM allograft was used as a soft-tissue surgical barrier following primary surgical repair. The lyophilized dCHPM allograft was placed over the exposed length of the Achilles tendon and manipulated to cover the anterior non-visible side of the tendon (Figure 1b). The allograft was secured using sutures at the proximal and distal ends of the repaired tendon (Figure 1c). The subcutaneous tissue was re-approximated and superficial skin was closed using a nylon suture and a no touch technique.

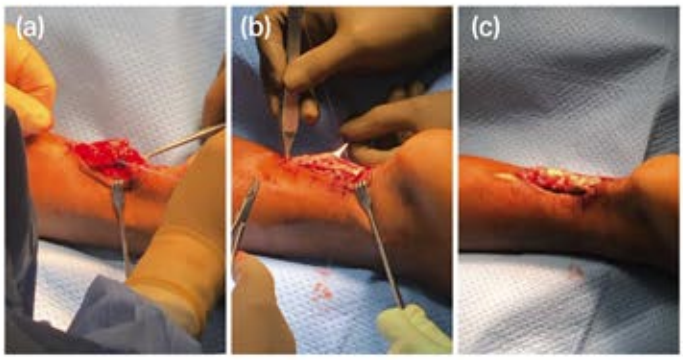

Figure 1. (a) Primary tendon repair. (b) A 6 x 8 cm allograft placed over exposed tendon length. (c) The allograft was secured with suture tacks proximal and distal to the repair site.

Procedure Outcome

Six weeks post-operation, the patient weaned out of the Achilles walker boot and progressed in therapy. The patient was able to return to normal activities without pain.

Lyophilized dCHPM Experience

The physician reported that the allograft was easy to place and did not tear when sutured. Overall, the allograft was noted to have excellent handling characteristics.

1. Data on file. 2. Roy, A., & Griffiths, S. (2020). Intermediate layer contribution in placental membrane allografts. Journal of tissue engineering and regenerative medicine, 14(8), 1126–1135. https://doi.org/10.1002/term.3086 Disclaimer of Medical Liability. This sheet is intended for general information purposes only. The content is not intended to be a substitute for professional medical advice. Patents: www.stimlabs.com/patents © 2023 Stimlabs® LLC; STIMLABS and CLEARIFY are trademarks of Stimlabs LLC. 1225 Northmeadow Parkway, Suite 104, Roswell, GA 30076; MKTG20-040 Rev 04