

Economic Evaluation of ORIF Management for Calcaneal Fractures with and without Adjunctive Amniotic Membrane Allograft

Christopher Stewart, MD - Baptist Health, Little Rock, AR



FIG. 1



FIG. 2A



FIG. 2B

Why this Study is Relevant

The standard surgical treatment for calcaneal fractures is open reduction and internal fixation (ORIF) surgery. However, post-operative complications are common. One of the major issues associated with this treatment is wound healing problems which occurs in approximately 25% of patients who undergo ORIF.¹⁻³ In clinical trials, use of cryopreserved amniotic membrane allograft tissue has been shown to support accelerated cutaneous wound healing and expedite functional recovery⁴. This study evaluated both the clinical and economic outcomes related to wound complications after ORIF surgery when managed with and without an amniotic membrane allograft.

Methods

Patients underwent ORIF for calcaneal fractures with (n=20; FIG. 1, 2A, 2B) and without (n=20) adjunctive allograft (Clarix 1K; BioTissue, Miami, FL). The primary outcomes of interest were analyzed between these two groups.⁵ Additionally, an economic analysis was performed based on the observed wound complications and costs, which were derived from literature.^{6,7}

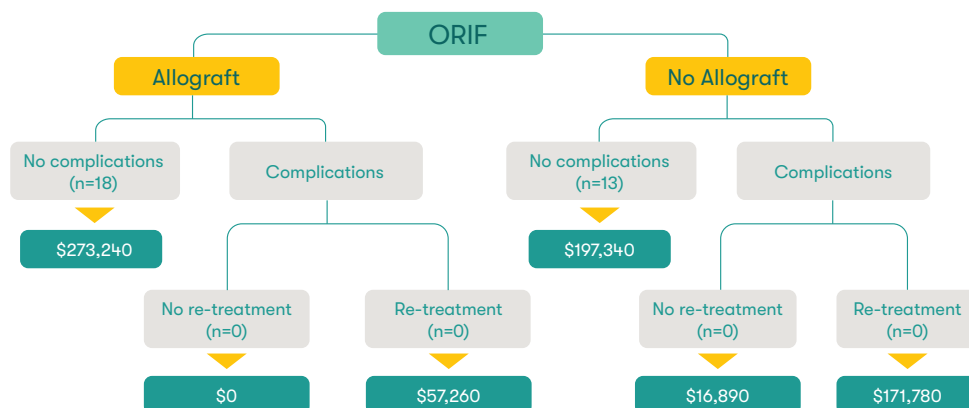
Clinical Outcomes

After ORIF for calcaneal fractures, only 10% (2/20) of cases that received an adjunctive allograft required wound care compared to 35% (7/20) of cases in the control group that underwent ORIF alone (Table 1). The readmission and reoperation rates were also higher in the control group (30%) as compared to the allograft treatment group (10%).

Table 1 Proportion of Patients Requiring Additional Treatment post-ORIF with and without UC		
	ORIF	ORIF + Allograft
Wound Care	7 (35%)	2 (10%)
Antibiotic Use	6 (30%)	2 (10%)
Readmission	6 (30%)	2 (10%)
Reoperation	6 (30%)	2 (10%)
Infection	5 (25%)	2 (10%)
Non-union	1 (5%)	0 (0%)

Outcomes

The average cost-savings for ORIF treatment with an allograft was \$2,775.50 per person over a 5-year period. This equates to a total cost of \$330,500 compared to the total cost \$386,010 in the control group. When accounting for the costs incurred from time off work, there was an average cost savings of \$14,377.50 per patient over a 4-year period.



Clarix 1K

Clarix 1K is an ultra-thick cryopreserved human amniotic membrane allograft derived from UC that supports improved wound healing for surgical operations. It is 10x thicker than Amniotic Membrane (AM) alone, which may increase the longevity of the product within the surgical site.

- Complex Bone and Joint Reconstruction
- Soft Tissue Repair and Reconstruction
- Nerve Repair and Decompression
- Joint Arthroplasty and Arthrodesis
- Cartilage Repair
- Fractures and Non-unions
- Traumatic Wounds and Reconstruction
- Surgical Wound Healing and Dehiscence



Clarix 1K Ultra-Thick Cryopreserved Amniotic Membrane Allograft	
Product Code	Size
CR-10-1515	1.5 x 1.5 cm
CR-10-2525	2.5 x 2.5 cm
CR-10-4030	4.0 x 3.0 cm
CR-10-6030	6.0 x 3.0 cm
CR-10-8030	8.0 x 3.0 cm

The BioTissue Difference

Over-36-year commitment to understanding the science behind fetal regenerative healing
The leader in the transformation to becoming a biologics provider

Manufacturer

Focused on delivering quality amniotic membrane-based allografts, we are the only company with FDA-designation for its unique anti-inflammatory, anti-scarring and anti-angiogenic properties on the ocular surface

Tissue Source

Proprietary CryoTek cryopreservation process has shown to preserve more of the key biological components and structural integrity of birth tissue

Processing

Versatile solution enables cool storage with minimal thawing and the ability to return the product to storage unopened

Storage

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