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Title: The Use Of Acellular Dermal Matrix (AlloDerm) As An Adjunct In Reconstruction Of Facial Paralysis

Introduction:

The use of cryopreserved acellular dermal matrix (AlloDerm) in reconstructive surgical procedures has gained increasing popularity. The benefits of its use have been well-documented with minimal complications in post-mastectomy reconstruction, abdominal and chest wall reconstruction, hernia repairs, and as a soft tissue filler for contouring. Patients who undergo dynamic reanimation for complete facial paralysis may require a number of reconstructive procedures, including contiguous muscle transfer, lower lid suspension, and lip augmentation. Traditionally, temporalis transfer requires use of a silastic or medpor implant to fill the muscle defect, lid suspension requires fascial slings, and lip augmentation requires repeated fat or collagen injection. The purpose of our study is to examine the use of AlloDerm in facial reanimation procedures for temporalis defect filling, lower lid suspension, and lip augmentation.

Methods:

Over a five-year period, 35 patients undergoing facial reconstructive procedures for paralysis underwent insertion of AlloDerm for various procedures. In patients undergoing temporalis transfer, a sheet of AlloDerm was fixed within the fascial defect. For patients with paralytic lower lid ectropion, a thin strip of AlloDerm was used as a suspensory sling. In patients with lip atrophy, thin strips of AlloDerm were inserted into the upper and lower lips on the affected side. Patients were evaluated at regular intervals postoperatively and assessed for functional outcome, cosmetic appearance and need for revision. The temporalis defect was assessed for contour regularity, the lower lid slings for corneal protection and absence of ectropion, and the lips for adequate lip volume, teeth coverage and appearance.

Results:

Of the patients who have undergone surgical procedures where AlloDerm was used as an adjunct, the outcomes have been very favorable. In total, 35 patients were treated. Follow-up times ranged from one to five years, with all patients returning for evaluation. Fifteen patients had AlloDerm placed for temporalis defects, among which 6 were used for secondary reconstruction after prior implants developed a significant capsule and deformity. Three patients required minor revision. In follow-up, all 15 patients have maintained a natural contour with no evidence of AlloDerm resorption. Five patients underwent placement of AlloDerm for lower lid suspension. One patient who underwent

an AlloDerm suspensory sling after multiple operations required a cartilage graft for lid support. In the other four patients, the eye has remained well-protected with no evidence of ectropion recurrence. Twenty-five patients were treated with AlloDerm for lip augmentation. Of these patients, 21 have maintained contour and teeth coverage, although some degree of resorption has been noted in most patients. Four patients required a secondary reinsertion of AlloDerm for resorption. There were no infections or indications for AlloDerm removal in the study population.

Conclusion

AlloDerm is a safe and useful adjunct in the reconstruction of patients with facial paralysis, with the possibility of reducing morbidity. However, further follow-up will be necessary to confirm long-term functional and cosmetic efficacy.