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Title: Salvage of High Risk Abdominal Wall Wounds with AlloDerm

Background/Purpose: The use of synthetic mesh materials for repair and reconstruction of abdominal fascial defects is well established. However, they carry the risk of significant complications including infection, extrusion, and intestinal fistualization. When these do occur, the mesh must invariably be removed, submitting the patient to additional procedures and further complications. Recently, AlloDerm, human acellular dermal matrix, has been described as a fascial substitute. It rapidly revascularizes and remodels with native tissue and has been shown to be resistant to infection. We have begun to use AlloDerm for fascial reconstruction in a variety of situations including traumatic abdominal wall defects, reconstruction following oncologic resection, and TRAM flap donor site repair. When wound complications arise such as wound infection, dehiscence, or necrosis, AlloDerm provides a method of wound salvage.

Methods: From 2003 to 2006, we reviewed all cases in which AlloDerm was used for abdominal wall fascial repair or reconstruction. We identified three cases in which significant wound breakdown occurred and the AlloDerm became exposed. The pertinent aspects of each case including indications, patient risk factors, defect characteristics, reconstructive technique, complications, and surgical outcome were carefully evaluated.

Results: Indications for the three cases included repair of a pedicled TRAM donor site, reconstruction of traumatic loss of entire abdominal wall, and reconstruction of lower abdominal wall following pelvic sarcoma resection. Patient risk factors in one case included smoking in the postoperative period. Defect size ranged from 4x6, to 15x7, to 900cm^2. AlloDerm used was thick, implantable, and placed using an inlay technique. Complications included abdominal flap necrosis, skin graft failure, and wound dehiscence. All wounds were completely debrided of all necrotic or infected tissue and then treated with negative pressure dressings. No wounds required removal of the AlloDerm. All wounds healed completely by secondary intention, skin grafting, or flap closure.

Conclusions: When AlloDerm is used as a fascial substitute and significant wound complications occur, the AlloDerm remains intact and provides a stable wound bed for debridement, secondary healing, and further reconstruction.

Significance: AlloDerm provides a method of wound salvage in high risk abdominal wounds that is resistant to infection, incorporates rapidly, and facilitates definitive wound closure.