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Title: The use of human acellular dermis for closure of contaminated abdominal wall defects

Purpose: The repair of abdominal wall defects in cases when there is contamination is often a challenge in abdominal surgery. Wound contamination may negatively influence closure of these defects. We examined the use of human acellular dermis (HAD) (AlloDerm®; Lifecell Corp.) for closure of a variety of abdominal wall defects where contamination was present. We hypothesized that use of HAD would be effective in repairing abdominal wall defects while resisting infection.

Methods: IRB approval was obtained to study the use of HAD to repair abdominal wall defects where contamination was present in 30 patients. HAD was used as an inlay to repair full thickness defects of the abdominal wall. Patients were followed to assess wound healing and clinical evidence of recurrent hernia.

Results: Thirty patients have been enrolled to date. Five patients had multiple defects of the abdominal wall. Procedures included: 5 ventral hernia repairs with concurrent bowel anastomosis or stoma, 6 parastomal hernia repairs, 19 stoma site defect closures, and 9 patients requiring intestinal resection and abdominal wall reconstruction for enterocutaneous fistulae. Average follow-up is 6 months (mean 1-18 months), with 6 patients followed for more than one year. Twenty patients healed without incident. Nine patients experienced delayed wound healing. One patient has a recurrent midline hernia. No cases required removal of HAD.

Conclusion: These results support the use of human acellular dermis for closure of abdominal defects in contaminated wounds. HAD appears to resist infection in the presence of wound contamination. Although follow-up is short, thus far HAD appears to effectively facilitate repair of contaminated abdominal wall defects.