

Title: Early Abdominal Closure Using Component Separation in Patients with Open Abdomen after Trauma

Purpose: Trauma patients with acute abdominal wall defects typically require temporal closure followed by definitive closure several months later. This study investigates the utility of early, permanent abdominal closure using component separation (CS) reinforced with Strattice[®] biological mesh.

Methods: Retrospective review of four trauma patients who underwent early abdominal closure using CS reinforced with Strattice[®] since June 2010. Early closure defined as permanent closure within ten days of original surgery. Records reviewed for size of defect, adverse outcome, length of stay (LOS), ICU days, and ventilator days.

Results: Eleven trauma patients required damage control laparotomy (DCL). Four received early primary fascia-to-fascia closure and one expired, all five were excluded from study. The study group was comprised of patients who required DCL and weren't candidates for primary fascial closure (n=6). Four underwent early abdominal closure using CS reinforced with Strattice[®] and two underwent temporary abdominal closure with skin graft. Large defects (>500cm) were successfully closed using CS reinforced with Strattice[®]. The CS (n=4) and skin graft (n=2) groups had ISS scores 31 & 34, LOS 31 & 71.5 days, ICU days 23 & 52, and ventilator days 19 & 50.

Conclusion: Our findings suggest early abdominal closure using CS reinforced with biologic Mesh, safe and cost effective technique. Patient lifestyle improved with closed abdomen temporary closure. Significant decrease in LOS, ICU, and ventilator days was observed. Further study is required to evaluate the scope of this technique.