

Long-Term Outcomes of Complex Abdominal Herniorraphy: Experience with 106 Cases

Thomas S. Satterwhite, MD, Sara Miri, MD, Christina Chung, MD, David Spain, MD, Hermann P. Lorenz, and Gordon K. Lee, MD

INTRODUCTION: Reconstruction of large abdominal wall defects is a challenging problem. Ventral incisional hernias can occur in up to 11% of initial laparotomies. Even more problematic is that the recurrence rates increase after each successive herniorraphy, with rates up to 54% to 67%. Our study investigated peri-operative factors to determine which variables were associated with poor outcomes.

METHODS: Data were collected on all patients who underwent ventral abdominal wall repair by three senior-level surgeons at our institution over an eight-year time period. In all cases, placement of either a synthetic or a biologic mesh was used to provide additional reinforcement of the repair. Multivariate analysis was performed to identify factors contributing to post-operative complications and hernia recurrences.

RESULTS: 106 patients were included with 42 men (39.6%) and 64 women (60.4%). The average age was 57 years (range 19-87 years). Sixty-seven patients developed a post-operative complication (63%). Skin necrosis was the most common complication (n=21, 19.8%). Other complications included seroma (n=19, 17.9%), cellulitis (n=19, 17.9%), abscess (n=14, 13.2%), pulmonary embolus/DVT (n=3, 2.8%), small bowel obstruction (n=2, 1.9%), and fistula (n=8, 7.5%). Factors that significantly contributed to post-operative complications ($p<0.05$) included: obesity, diabetes, hypertension, fistula at the time of the operation, a history of more than 2 prior hernia repairs, a history of more than 3 prior abdominal operations, hospital stay greater than 14 days, defect size > 300 square cm, and the use of human-derived mesh allograft. Factors that significantly increased the likelihood of a hernia recurrence ($p<0.05$) included: a history of more than 2 prior hernia repairs, the use of human-derived allograft, using an overlay-only mesh placement, and the presence of a post-operative complication, particularly infection. Hernia recurrences were significantly reduced ($p<0.05$) by using a “sandwich” repair with both a mesh overlay and underlay, and by using component separation.

CONCLUSIONS: A history of multiple abdominal operations is a major predictor of complications and recurrences, and these patients should be appropriately counseled. The surgeon should always strive for a primary tension-free repair. If needed, component separation should be used to achieve this goal, which minimizes the likelihood of hernia recurrences. Mesh reinforcement used concomitantly in a “sandwich” repair with component separation leads to reduced recurrence rates and may provide the optimal repair.