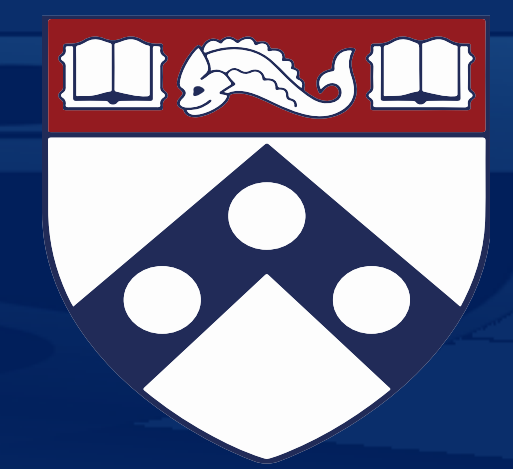


Comparative Effectiveness Analysis of Ventral Hernia Repair and Transverse Abdominis Release With and Without Panniculectomy: A 4-Year Match-Pair Analysis

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Background

Ventral hernia repair (VHR) is one of the most common surgeries in the United States with more than 350,000 cases performed annually. Ventral hernias tend to be more prevalent in patients that are overweight or obese. To address this patient population's needs, concurrent VHR and panniculectomy procedures have been proposed as a method through which to correct abdominal wall defects, while simultaneously excising redundant skin and subcutaneous adipose tissue. Large body habitus, and the presence of a sizeable pannus, present an additional challenge for surgeons, but also increased risk for patients, as obesity predisposes patients to complications including delayed healing and infection. While several studies have analyzed the utility and outcomes of concurrent VHR and panniculectomy procedures, data regarding the long-term outcomes of concurrent Transverse Abdominis Release - panniculectomy procedures is limited.

Methods

A retrospective review was performed to examine all adult patients who underwent VHR + TAR with and without panniculectomy from 2016-2022 by a single surgeon. Propensity-scored matching was performed based on age, BMI, ASA, and VHWG. Primary outcomes consisted of short-term (<60 days) and long-term (>60 days) post-operative outcomes. Short term outcomes included surgical site occurrences (SSO) and surgical site occurrences requiring intervention (SSOPI). Quality of life (QoL) was measured through patient reported outcomes (PRO), collected at pre-operative and post-operative periods.

Figures

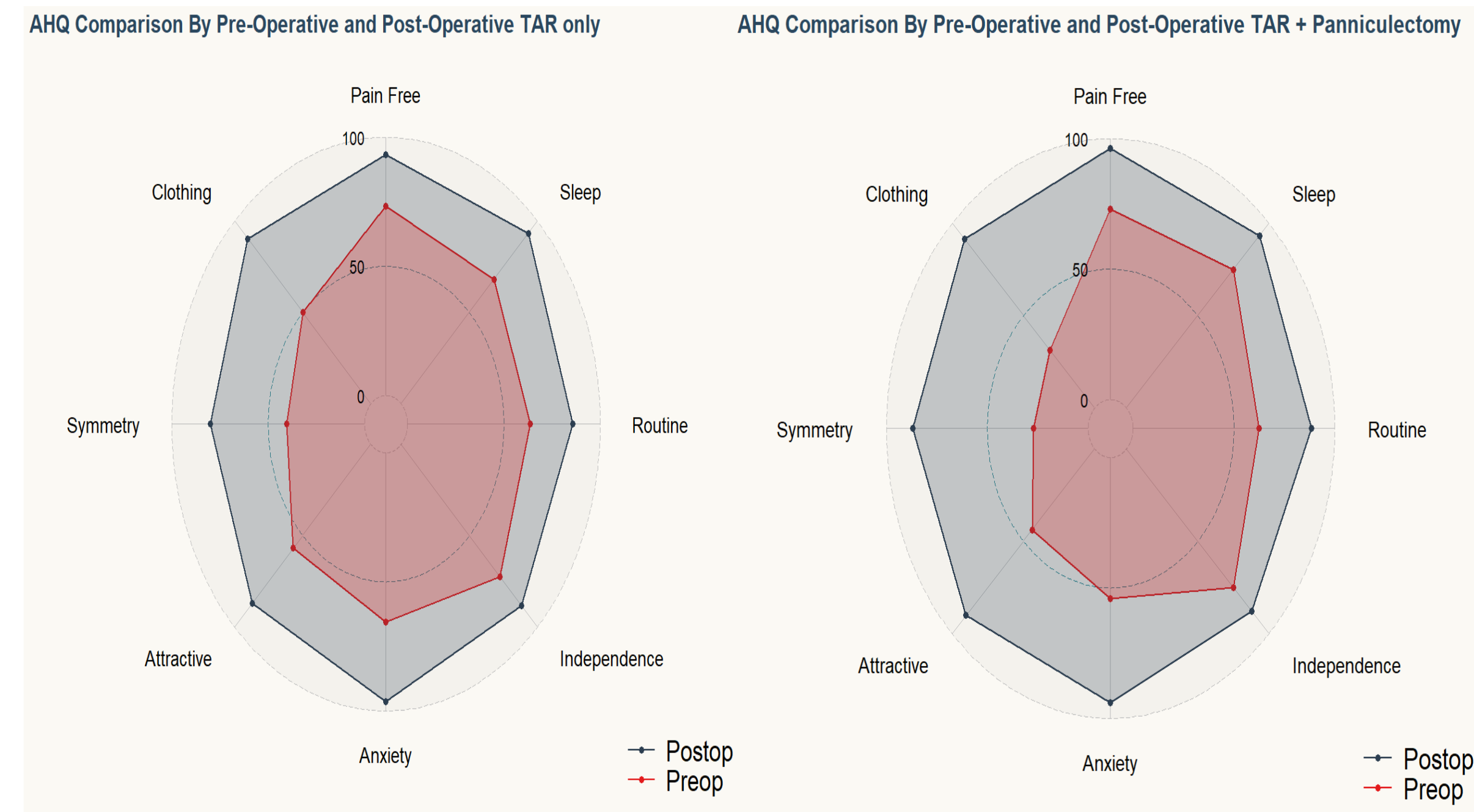


Figure 1: Figure 1: AHQ comparison between Pre-Operative and Post-Operative Follow-Up of VHR and TAR with/without Panniculectomy. There were no significant differences in overall preoperative scores. Clothing = Satisfaction of feeling normal in clothing, Symmetry = Abdominal Symmetry Satisfaction, Attractive = Satisfaction towards appearance without clothing, Anxiety = Anxiety relief, Independence = Comfortability with self-tasks, Routine = Comfortability with daily routines, Sleep = Satisfaction with sleep, Pain Free = Abdominal pain relief

Results

Fifty subjects were studied: 25 had TAR alone, while 25 had TAR with panniculectomy. Both groups had an average age of 57 years and a BMI of 32.6 kg/m². The TAR with panniculectomy group was predominantly female (64.0% vs. 12.0%, p<.001). Comorbidities and hernia characteristics, like defect size, showed no significant differences between groups. All used retromuscular/preperitoneal (sublay) mesh, primarily biosynthetic (74%). A 48.8-month median follow-up found more delayed healing (44% vs 4%) and seromas (24% vs 4%) in the TAR with panniculectomy group. Long-term outcomes, including hospital revisits, were similar in both groups. Hernia recurrence was at 4% for both. Quality of Life (QoL) post-operation improved significantly for both groups, with an 86.7% response rate. However, the TAR with panniculectomy group showed a higher overall score improvement at 53.8% vs 32.4% (p<0.05). They also had better appearance component scores.

Conclusions

With rates of obesity in the United States continually rising, there is a growing need for surgical procedures that address both complex ventral hernia defects and symptomatic excess skin and subcutaneous tissue. Prior studies have delved into the efficacy and outcomes of concurrent VHR and panniculectomy procedures, yet data on concomitant TAR-panniculectomy procedures remains sparse. This study serves as the first of its kind to compare these procedures in terms of clinical outcomes and QoL over a comprehensive four-year follow-up period. Our analysis demonstrated that VHR with TAR and panniculectomy serves as an efficacious solution for complex ventral hernia defects, boasting low recurrence and complication rates at long term follow-up. Despite increased known short-term complications, our study revealed that VHR with TAR and concurrent panniculectomy procedures significantly improves disease-specific QoL over a 4-year period, with even higher scores in appearance components.

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