

Impact of Obesity on Outcomes of Prepectoral Versus Subpectoral Implant-based Breast Reconstruction

Malke Asaad, MD; Abbas M. Hassan, MD; Natalie Morris, BS; Saloni Kumar, BS; Jun Liu, PhD; Charles E. Butler, MD; Jesse C. Selber, MD, MPH

Department of Plastic and Reconstructive Surgery, The University of Texas MD Anderson Cancer Center, Houston, TX.



THE UNIVERSITY OF TEXAS
MD Anderson
Cancer Center
Making Cancer History®

Background

- Prepectoral implant-based breast reconstruction (IBR) has been increasingly used over the last decade as the ideal plane for device placement following mastectomy.
- The challenges of reconstructing patients with high BMI are becoming more prominent, and therefore, data to support decision-making in this high-risk population is particularly salient.
- As such, the current study was designed to investigate the impact of obesity on the outcomes of patients who underwent prepectoral vs. subpectoral IBR.

Methods

- We conducted a retrospective review of patients who underwent two-stage IBR from January 2017 to December 2019 at The University of Texas MD Anderson Cancer Center.



Retrospective Cohort Study
2017 - 2019

- We included patients with a BMI ≥ 30 at the time of IBR who had tissue expander (TE) placement with or without permanent implant exchange.
- The following patient cohorts were excluded:
1) those who underwent direct-to-implant or delayed-immediate reconstruction (TE followed by a free tissue transfer); and 2) those who required a change in device plane from prepectoral TE to subpectoral permanent implant or vice versa.

Study Outcomes



Surgical
Complications



Operative
Complications



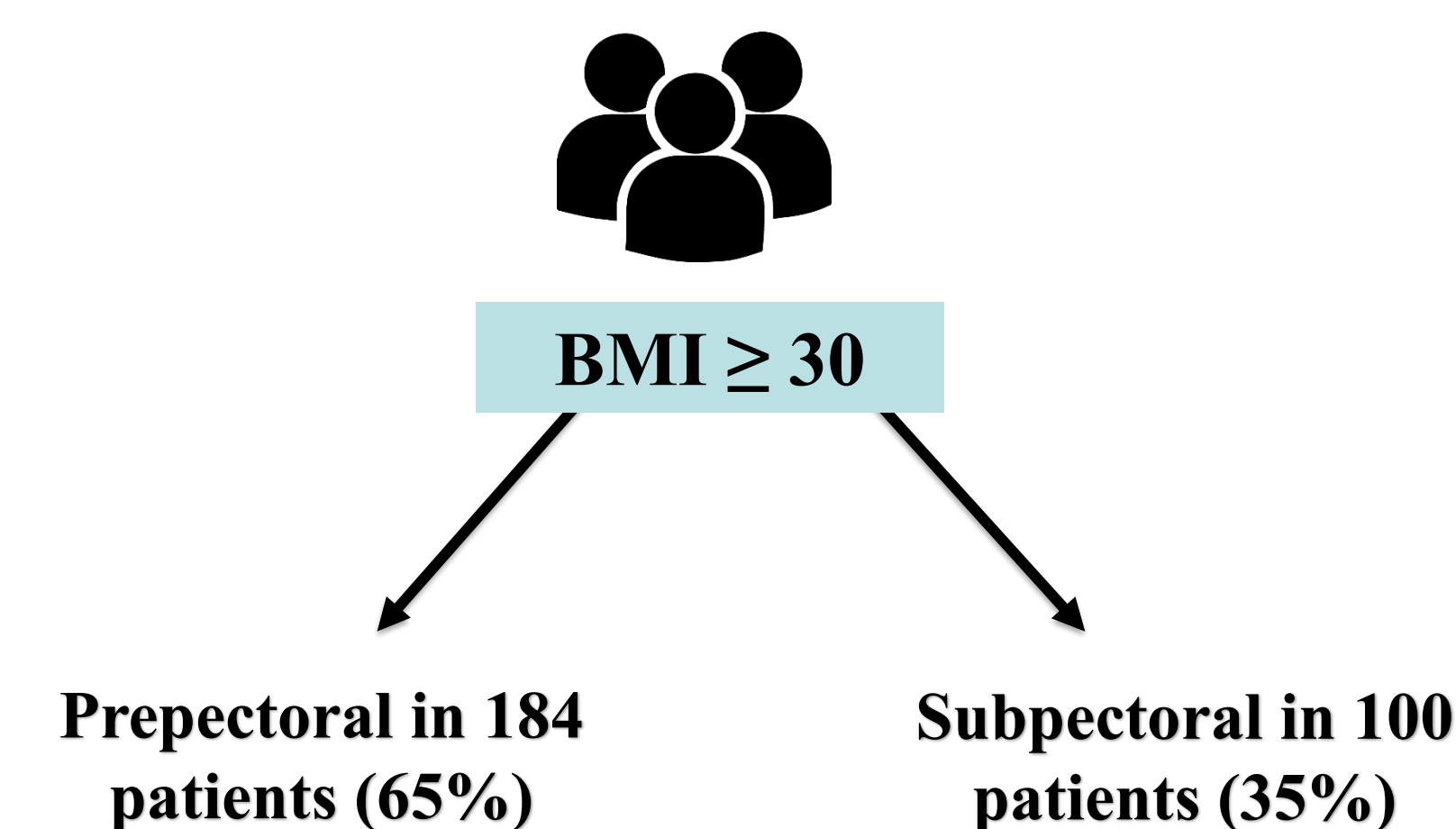
Patient-
reported
Outcomes
(BREAST-Q)



Chi-squared test & Fisher's exact test
Univariate & multivariable regression

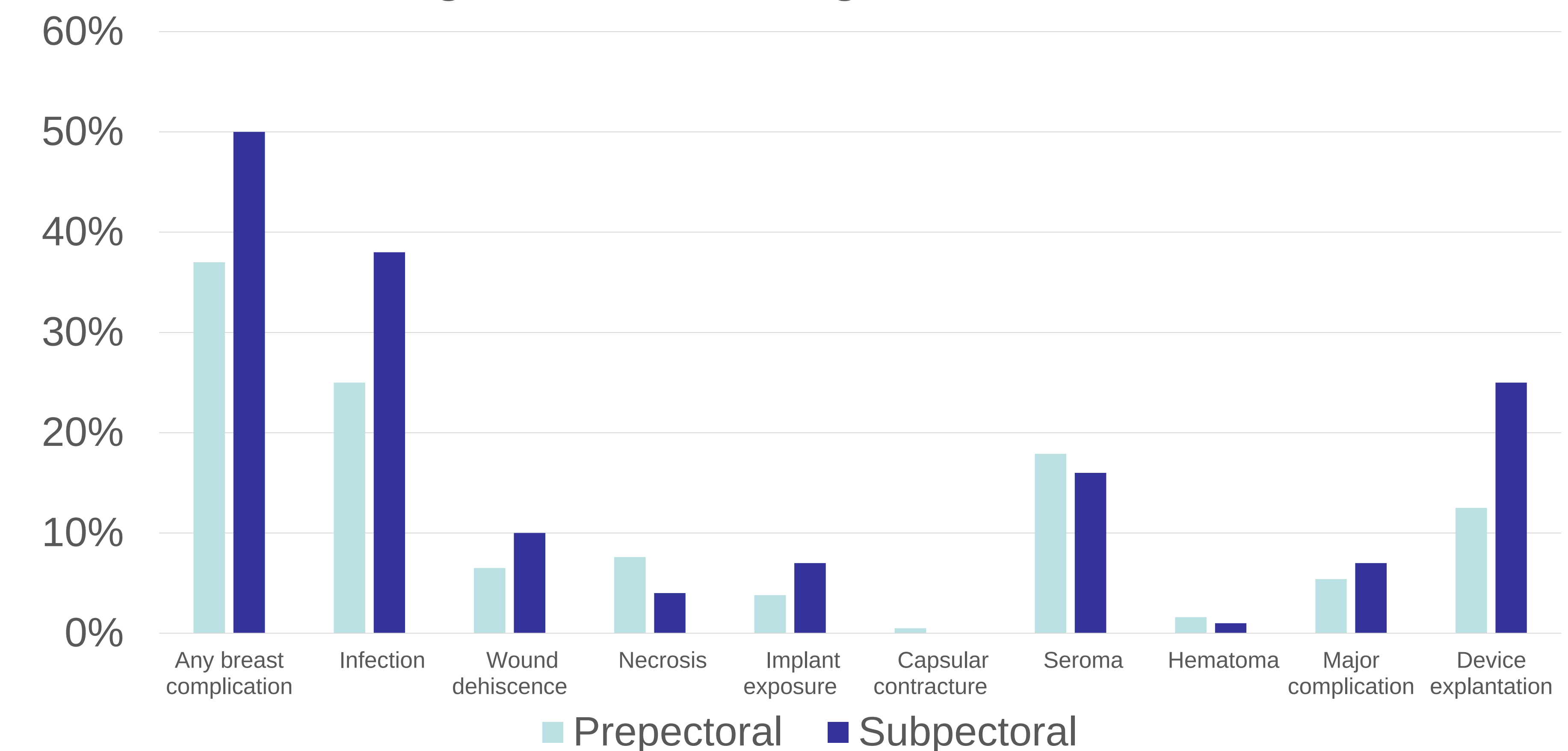
Results

209 patients (284 reconstructions)

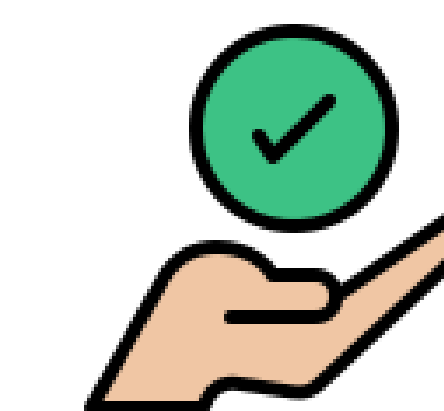


- Mean age (53 vs. 52 years, $p=0.684$) and BMI (34 vs. 34 kg/m², $p=0.58$) were similar between the prepectoral and subpectoral groups, respectively.
- Patients in the subpectoral group were more likely to receive postoperative radiotherapy (22% vs. 13%) but this difference was not statistically significant ($p=0.05$). Preoperative radiotherapy, pre- and post-operative chemotherapy were also similar between the two groups.
- The overall complication rate was significantly higher in the subpectoral group (50% vs. 37%, $p=0.047$) and device explantation in the subpectoral group was two-fold higher than that in the prepectoral group (25% vs. 12.5%, $p=0.008$). Infection was the most common complication, occurring at a significantly higher rate in the subpectoral cohort (38% vs. 25%, $p=0.024$). Surgical outcomes are summarized in Figure 1.

Fig 1. Overall Surgical Outcomes



- No significant differences in mean scores for satisfaction with the breast, psychosocial well-being, and sexual well-being were identified between the two groups.



Conclusion

- Prepectoral breast reconstruction was associated with significantly decreased overall breast-related complications, infections, and device explantation compared to subpectoral breast reconstruction when performed in obese patients.
- Therefore, not only is the prepectoral technique not contraindicated in this patient population, but the results are superior to the subpectoral technique.
- In this patient population, we recommend using the prepectoral technique for implant-based breast reconstruction.

Contact Info: @malkeasaad, @abbashassanmd
asaadm@upmc.edu