

Outcomes in Immediate, Delayed-Immediate, and Delayed Autologous Breast Reconstruction: A Fourteen-Year National Database Analysis

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Background

- Autologous breast reconstruction (ABR) has demonstrated high patient satisfaction and favorable outcomes
- However, the ideal timing of ABR after mastectomy is highly debated
- We aimed to **compare postoperative outcomes and complications** among patients undergoing **immediate, delayed-immediate, and delayed ABR**

Methods

- Merative™ MarketScan® Databases
- 14-year analysis (2007-2021)
- >18yo females with history of mastectomy + subsequent ABR
- Immediate** = same-day ABR
- Delayed-immediate** = same-day TE
- Delayed** = ABR at later time
- Primary outcome: complications at <90d post-mastectomy (PM), <90d post-reconstruction (PR)
- Univariate testing, multivariate logistic regression

Results

- n = 19,805; 65% underwent immediate ABR
- Immediate**: least all-cause complications & least lymphedema; most PM necrosis, PM DVT/vascular issue, PM hematoma
- Delayed-immediate**: highest rate of PM infection
- Delayed**: highest PR seroma rate
- All findings were significant (p < 0.05)
- The likelihood of experiencing ≥ 1 complication was higher with increased age, delayed-immediate and delayed ABR, increased Elixhauser comorbidity score, and smoking history

Likelihood of Experiencing >1 Complication

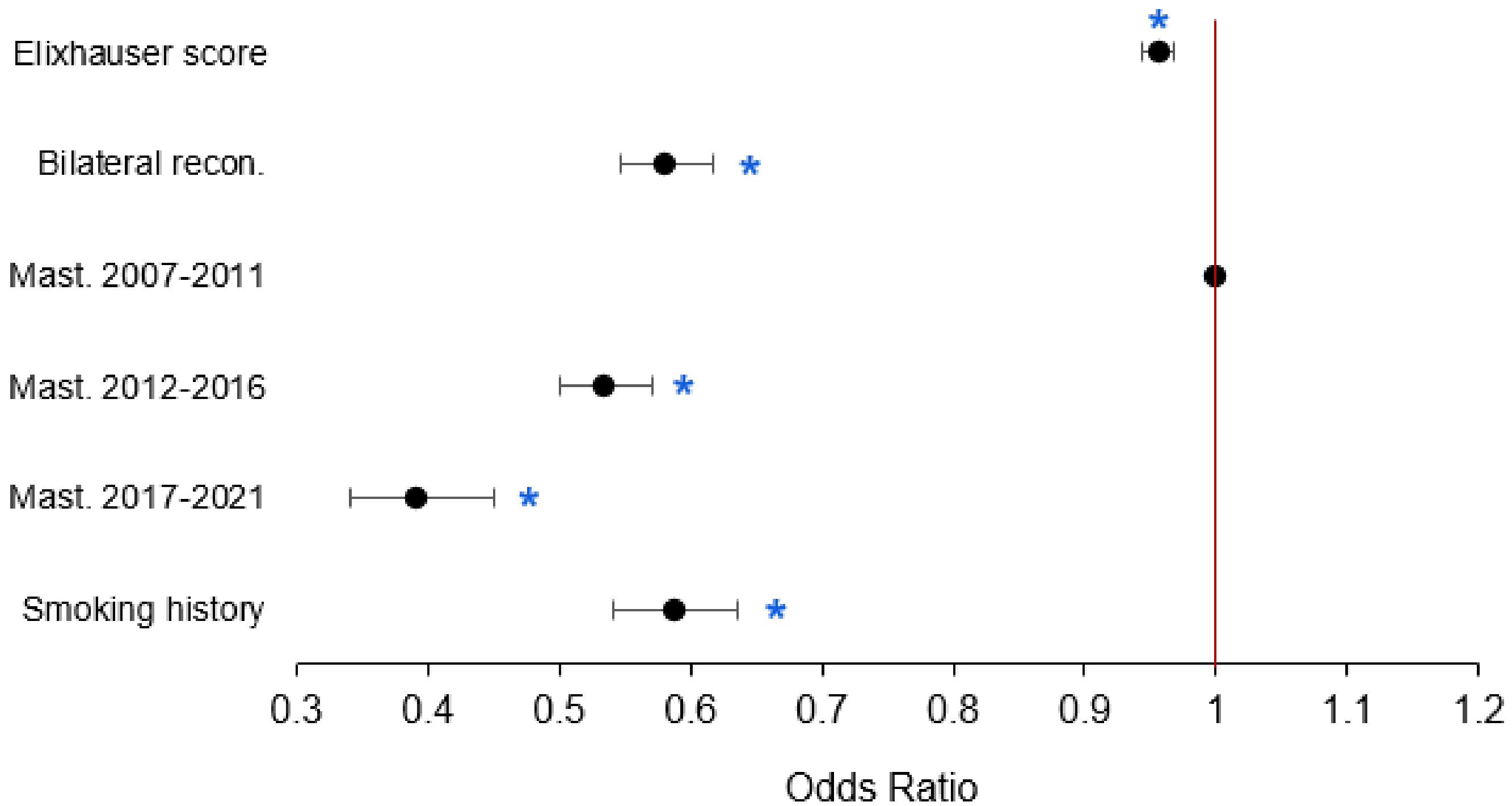
Characteristic	Odds Ratio (95% CI)	p-value
Age	1.01 (1.01-1.01)	<0.001
Immediate	1	-
Delayed-Immediate	2.60 (2.30-2.94)	<0.001
Delayed	2.33 (2.19-2.50)	<0.001
Elixhauser score	1.02 (1.01-1.03)	0.001
Smoking	1.28 (1.18-1.39)	<0.001

Complication Rates by Timing of ABR

Complication	Immediate	Delayed-Immediate	Delayed
All-cause (PM + PR)	38%	62%	59%
PM Tissue Necrosis	7%	5%	4%
PM DVT/Vascular	3%	2%	1%
PM Hematoma	5%	2%	3%
PM Infection	7%	9%	7%
PR Seroma	-	5%	7%
Lymphedema	11%	24%	21%

- Patients with more comorbidities, bilateral ABR, more recent ABR (>2011), and smoking history had a lower likelihood of undergoing immediate ABR

Likelihood of Undergoing Immediate ABR



Conclusions

- Immediate ABR is associated with fewer overall complications than later timing of ABR
- A second surgery for delayed-immediate and delayed ABR patients inherently increases the odds of complications
- At the PM stage, however, patients undergoing immediate ABR have more complications than those undergoing staged ABR
- Immediate ABR may be somewhat protective against the development of lymphedema

Future Directions

- Analyze the decline of immediate ABR in the last 10yrs – key drivers in this decision-making process?
- Physiologic mechanisms that significantly reduce the rate of lymphedema in immediate ABR patients?
- Identify preventative strategies for the high rates of all-cause complications in all three ABR groups
- Determine influence of sociodemographic factors on the type of ABR that patients undergo: geography, insurance type, etc.