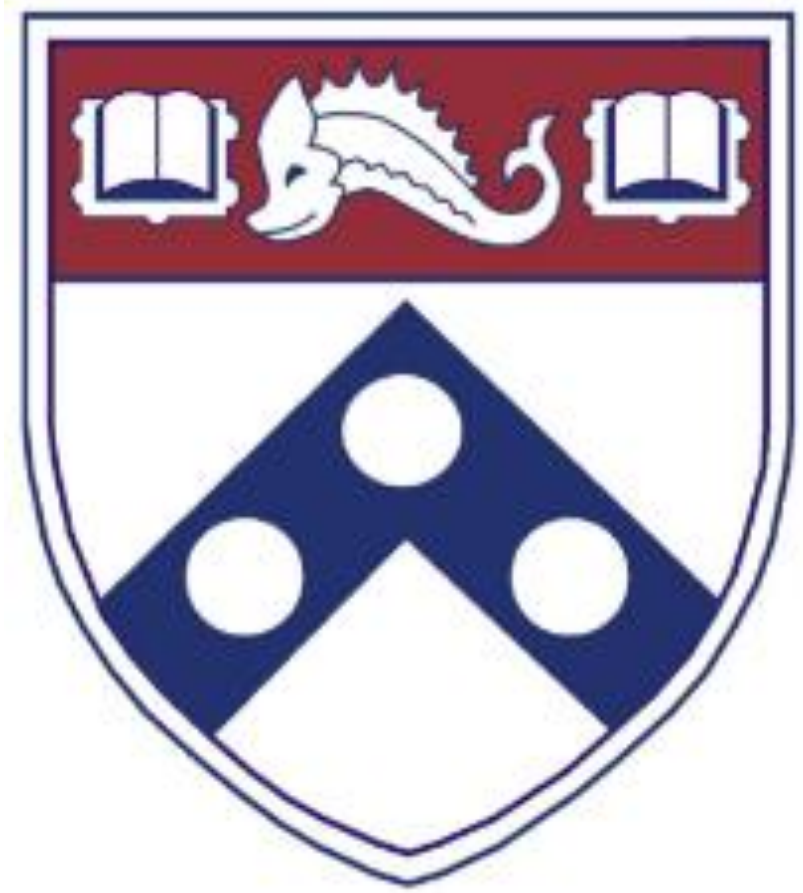
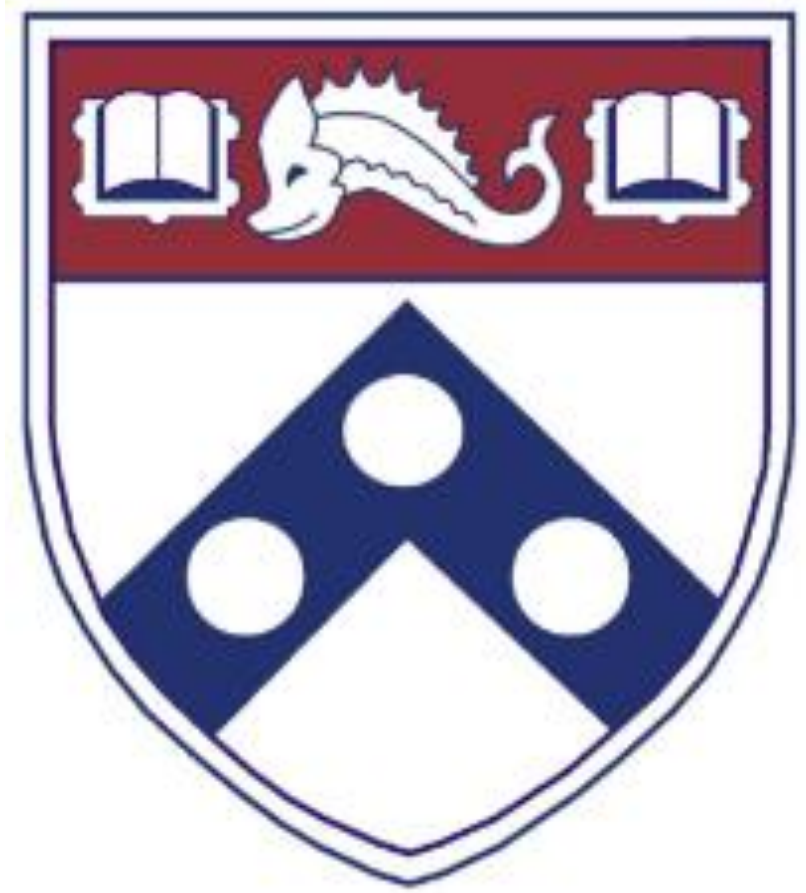




Comparing Outcomes of Implant-based Breast Reconstruction between Patients with and without Prior Breast Surgery: Is Nipple-Sparing Mastectomy Safe?

Dustin T. Crystal MD, Jane N. Ewing, Ayaka N. Deguchi MD, Mehdi S. Lemdani, Zachary Gala MD, Robyn B. Broach PhD, Linda M. Saikali, Salman Khan, Shiv Patel, Jusung Kim, Said Azoury MD

Department of Surgery, Division of Plastic Surgery, Hospital of the University of Pennsylvania, Philadelphia, PA.



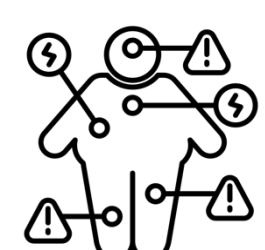
INTRODUCTION



Over 120,000 alloplastic breast reconstructions are performed annually.



Mastectomy skin necrosis, nipple areolar complex loss (NAC), delayed healing of incisions, and fluid collections pose challenges to reconstructive surgeons.

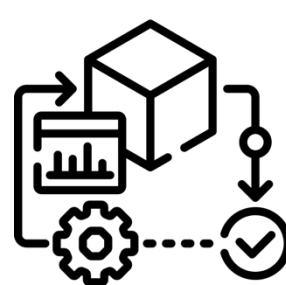


While outcomes of implant-based breast reconstruction have been described, there is paucity of literature documenting the outcomes of patients with prior breast surgery who subsequently undergo mastectomy and alloplastic breast reconstruction.

METHODS



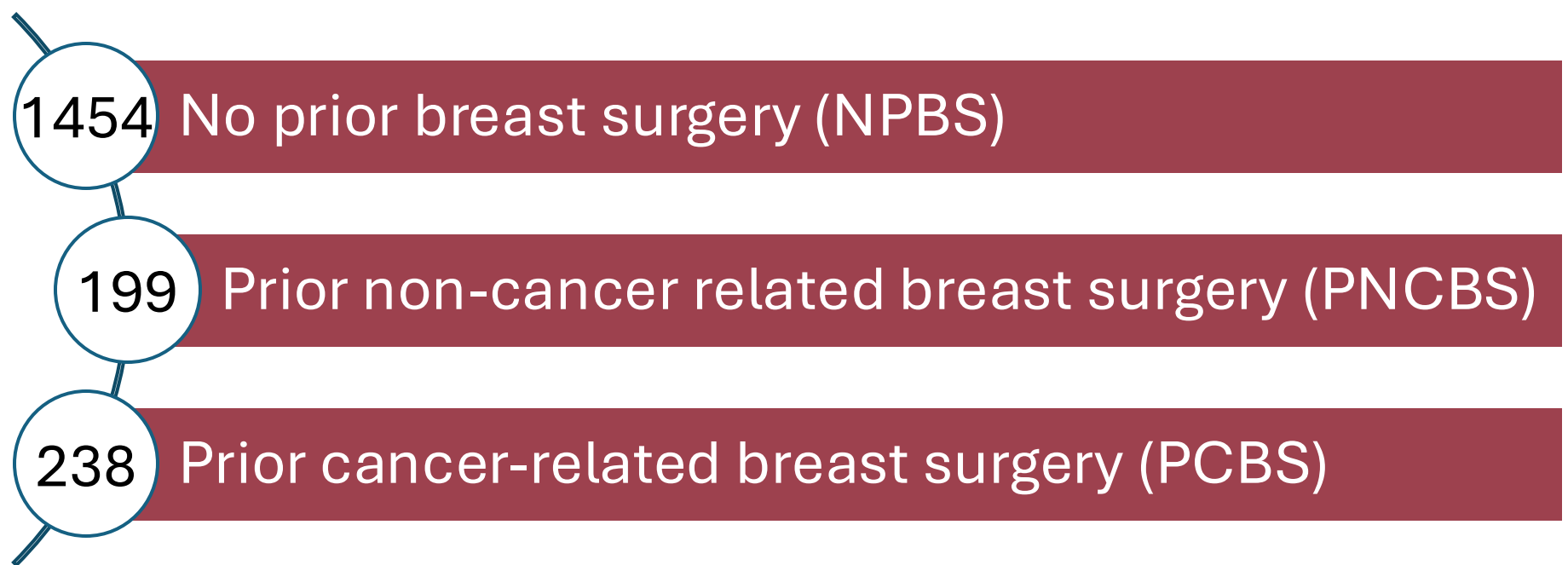
A single-centered, breast-level analysis retrospectively examining patients with implant-based breast reconstruction post-mastectomy from 2018-2021.



Primary endpoint: Comparison of surgical site complications following implant-based breast reconstruction in patients with a history of previous breast surgery and those without a history of previous breast surgery.

PATIENT STRATIFICATION

Mastectomy with Alloplastic Reconstruction



RESULTS

Demographics

	NPBS (N=1454)	PNCBS (N=199)	PCBS (N=238)	NPBS vs PNCBS P Value	NPBS vs PCBS P Value
Mean Age (SD)	47.4 (10.4)	48.6 (10.9)	51.6 (10.8)	0.133	<0.001
Mean BMI (SD)	24.8 (5.4)	24.6 (4.4)	26.3 (6.5)	0.572	<0.001
No History of Smoking	70.9%	65.8%	73.5%	0.244	0.553
Diabetes	2.5%	1.0%	3.4%	0.308	0.384
Hypertension	11.4%	12.1%	19.3%	0.308	0.001
Preoperative Chemotherapy	23.6%	13.6%	22.7%	0.001	0.805
Preoperative Radiotherapy	3.6%	3.0%	19.3%	0.839	<0.001

Operative Characteristics

	NPBS (N=1454)	PNCBS (N=199)	PCBS (N=238)	NPBS vs PNCBS P Value	NPBS vs PCBS P Value
Operative Time (minutes)	194.0	190.8	191.4	0.577	0.655
Skin Sparing Mastectomy	48.1%	36.2%	43.7%	0.005	0.613
Nipple Sparing Mastectomy (NSM)	38.4%	49.7%	43.3%		
Tissue Expander Placement	83.6	65.3	81.5		
Direct to Implant	16.1	34.7	17.6	<0.001	0.31
Pre-pectoral Placement	41.7%	28.6%	39.1%	0.002	0.038
Postoperative Chemotherapy	27.6%	21.1%	17.2%	0.017	0.001
Postoperative Radiotherapy	20.5%	12.6%	12.6%	0.001	0.009
Follow-up – Mean (days)	500.1	519.9	579.1	0.658	0.112

Disclosures: No disclosures relevant to this study.

RESULTS

Post-Operative Complication Data

Complication Outcome	NPBS (N=1454)	PNCBS (N=199)	PCBS (N=238)	NPBS vs PNCBS P Value	NPBS vs PCBS P Value
Cellulitis	4.5%	4.0%	7.6%	<0.001	<0.001
Delayed Healing	11.4%	14.6%	17.2%	<0.001	<0.001
ED Readmission	8.5%	6.5%	13.0%	0.533	0.016
Hematoma	7.0%	7.5%	6.3%	<0.001	<0.001
Seroma	19.3%	27.6%	29.8%	<0.001	<0.001
Implant Loss	5.5%	7.5%	11.3%	<0.001	<0.001
Skin necrosis	8.1%	10.1%	8.8%	<0.001	<0.001
NAC Necrosis	7.0%	12.6%	9.7%	<0.001	<0.001
Reoperation	19.3%	21.1%	29.0%	0.80	<0.001

NSM
Subgroup
Analysis

Outcome	NPBS (N=558)	PNCBS (N=99)	PCBS (N=103)	NPBS vs PNCBS P Value	NPBS vs PCBS P Value
Delayed Healing	9.1%	14.1%	20.4%	0.047	0.001
Seroma	19.2%	28.3%	31.1%	0.027	0.007
Implant Loss	4.3%	9.1%	15.5%	0.023	<0.001
NAC Necrosis	18.1%	25.3%	22.3%	0.047	0.089

Regression Analysis*

NAC Necrosis	Odds ratio	95% CI		P Value
PNCBS	1.64	0.927	2.89	0.057
PCBS	1.74	0.998	3.03	0.051

*Controlling for BMI, plane of implantation, implant size, and radiation

CONCLUSIONS

- This study presents the largest series of patients undergoing alloplastic breast reconstruction with a prior history of breast surgery.
 - There are increased rates of complication with prior surgery, including delayed healing, seroma, implant loss, and mastectomy/NAC necrosis.
- Regression analysis demonstrates trend towards negative effect of prior breast surgery on NAC necrosis, independent of confounding variables.