

Complications In Prepectoral Tissue Expander Placement: A Single Institution Study

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Background

Prepectoral two-stage post-mastectomy breast reconstruction has increased in the recent time period. Benefits of prepectoral reconstruction may include lack of animation deformities and reduced post-operative pain, but its complication profile is currently unclear. The aim of this study is to examine the complication profile of prepectoral tissue expanders (TEs) at our institution.

Methods

We performed a retrospective review of patients who underwent immediate reconstruction with a prepectoral TE from 2018-2020 at Memorial Sloan Kettering Cancer Center. Basic demographics and comorbidities were evaluated. Outcomes of interest included seroma, hematoma, infection/cellulitis, mastectomy skin flap necrosis requiring revision (MSFN), TE exposure, capsular contracture, and TE loss. Multivariate logistic regression assessed factors associated with increased odds of TE loss.

Results

A total of 574 patients (952 TEs) were included. Mean age of the cohort was 47.1 years. Overall, 78.6% of mastectomies were skin-sparing, 71.2% of TEs were smooth, 82.6% used acellular dermal matrix (ADM), and 46.6% used SPY angiography. Most frequent complications were seroma (9%), infection/cellulitis (8%), and TE loss (4.6%). Hematoma, TE exposure, and MSFN each had complication rates of 2%. Fewer than 1% of patients experienced capsular contracture. Diabetics (OR=3, p=0.030), former smokers (OR=2.45, p=0.007), and increasing mastectomy weight (OR=1.001, p=0.041) had increased odds of TE loss. TE loss was not associated with TE surface type, ADM use, or SPY use.

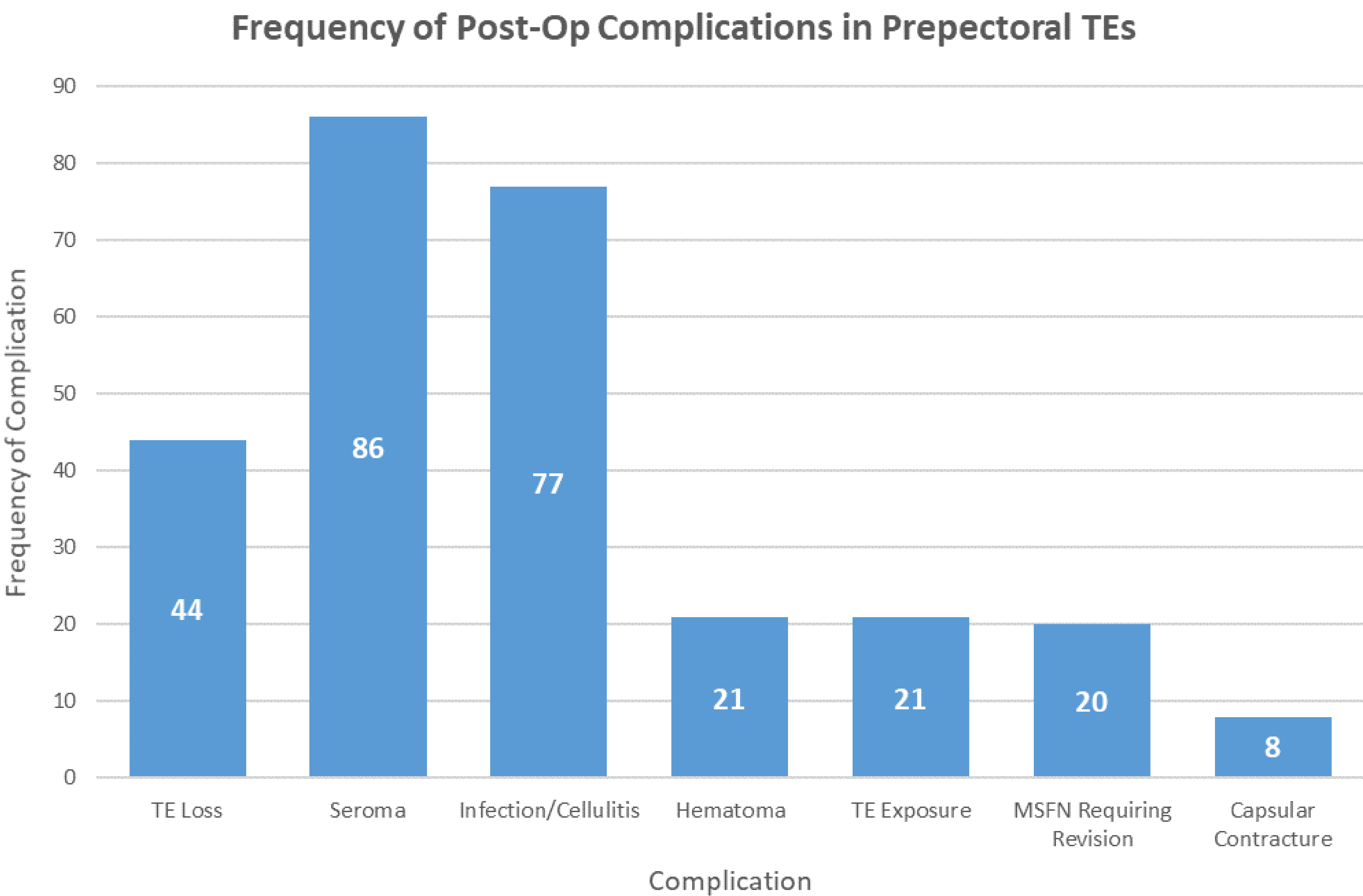


Table 1. Complication rates in prepectoral TEs.

Complication	Frequency % (n)
TE Loss	4.62% (44)
Seroma	9.03% (86)
Infection/Cellulitis	8.09% (77)
Hematoma	2.21% (21)
TE Exposure	2.21% (21)
MSFN Requiring Revision	2.10% (20)
Capsular Contracture	0.84% (8)

Conclusion

Prepectoral reconstruction is a reasonable and safe alternative to subpectoral TE placement. Further research examining the quality of the soft tissue envelope and pocket size, as well as assessment of patient reported outcomes, would prove beneficial.

Table 2. Multivariable logistic regression analysis of factors contributing to TE loss.

Variable		OR (95% CI)	p
Age		1.002 (0.973, 1.033)	0.874
Race	White		
	Black or African American	1.66 (0.69, 3.89)	0.257
	Asian-Far East/Indian	2.49 (0.89, 6.95)	0.081
	Other/Unknown	2.18 (0.82, 5.81)	0.118
Ethnicity	Hispanic		
	Not Hispanic	0.64 (0.22, 1.84)	0.407
	Unknown	1.97 (0.63, 6.22)	0.246
Smoking History	Never		
	Current	4.17 (0.81, 21.31)	0.087
	Former	2.45 (1.28, 4.67)	0.007
	Unknown	0 (0, Inf)	0.989
Diabetes		3 (1.11, 8.09)	0.030
Neoadjuvant Chemotherapy		1.17 (0.53, 2.56)	0.696
Adjuvant Chemotherapy		0.36 (0.16, 0.83)	0.016
Neoadjuvant Radiation Therapy		0 (0, Inf)	0.986
Adjuvant Radiation Therapy		0.72 (0.33, 1.59)	0.418
Breast Weight		1.001 (1, 1.002)	0.041
TE Type	Smooth		
	Textured	1.74 (0.9, 3.37)	0.099
TE Size (cc)		0.99 (0.99, 1.003)	0.617
TE Fill (cc)		1.001 (0.99, 1.004)	0.593
ALND		2.08 (0.89, 4.88)	0.090
ADM		0.86 (0.39, 1.91)	0.707
SPY		1.52 (0.79, 2.89)	0.207