

Title: Mesh Exposure and Associated Risk Factors in Women Undergoing Transvaginal Prolapse Repair with Polypropylene Mesh

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Objectives: To determine frequency, rate, and risk factors associated with mesh exposure in women undergoing transvaginal prolapse repair with polypropylene mesh.

Methods: In this IRB-approved retrospective study, medical records for all women who underwent Prolift® Pelvic Floor Repair System (Gynecare, Somerville, NJ) between September, 2005 and September, 2008 were reviewed. Demographic, clinical and surgical variables were collected. Mesh exposure was defined as mesh visible within the vagina and dichotomized into early (≤ 42 days) and late (> 42 days) presentation postoperatively. Multivariable logistic regression was performed to establish independent risk factors for mesh exposure.

Results: 201 women underwent Prolift®. Demographic, clinical and surgical variables are described in Table 1. Mesh exposure occurred in 12% (24/201). The rate of mesh exposure was 14 per 100 woman-years. Median time to mesh exposure was 62 days (range 10-372). Median duration of follow-up was 339 days (interquartile range 148-438). Early mesh exposure was noted in 5 (21%) women and late in 19 (79%) women. Univariate analysis identified a greater change in hemoglobin ($P = 0.05$) in women with

mesh exposure. Independent risk factors for mesh exposure were diabetes (AOR = 7.7, 95% CI 1.6-37.6; P = 0.01) and surgeon (AOR = 7.3, 95% CI 1.9-28.6; P = 0.004).

When the first half of each surgeon's case load was compared to the second half, there was no difference in the frequency of mesh exposure (P = 0.09). When early and late exposures were compared, there were no differences between smoking, diabetes, change in hemoglobin, or surgeon (P > 0.05).

Conclusion: Women with diabetes have a 7-fold increased risk for mesh exposure after transvaginal prolapse repair with polypropylene mesh. The variable rate of mesh exposure amongst surgeons was not associated with surgical experience but may be related to technique. Although not an independent risk factor, larger perioperative blood loss may also be related to mesh exposure. Differences in risk profile between early versus late presentation of mesh exposure may be demonstrated with a larger sample.

Table 1. Selected Demographic, Clinical and Surgical Variables (N = 201)

Characteristic	Mesh exposure (N = 24)	No mesh exposure (N = 177)	P
Age (years)*	67.3 ± 8.8	66.1 ± 8.1	0.49
Body Mass Index (kg/m ²)*	28.2 ± 4.0	27.9 ± 5.0	0.78
Smoking status			0.30
Nonsmoker	14/23 (61%)	119/173 (69%)	
Current smoker	2/23 (9%)	6/173 (3 %)	
History of smoking	7/23 (30%)	48/173 (28%)	
Medical co-morbidities			
Diabetes	4/23 (17%)	7/164 (4%)	0.03
Hypertension	12/24 (50%)	99/175 (57%)	0.66
Surgical history			
Prior incontinence procedure	2/24 (8%)	34/174 (20%)	0.26
Prior prolapse procedure	6/24 (25%)	53/176 (30%)	0.81
POPQ measurements			
Preoperative Ba (cm)*	+3.0 ± 3.0	+2.3 ± 2.6	0.23
Preoperative Bp (cm)*	+0.9 ± 3.7	+0.7 ± 3.1	0.81
Preoperative TVL (cm)*	8.6 ± 1.2	8.5 ± 2.2	0.77
Δ hemoglobin (preoperative – postoperative in g)*			>0.99
	2/24 (8%)	17/176 (10%)	0.45
	171 ± 194	140 ± 101	0.05
	2.9 ± 1.2	2.4 ± 1.1	

*mean ± SD