IS BIOSYNTHETIC MESH  THE RIGHT CHOICE?

A PROPENSITY MATCHED ANALYSIS OF VENTRAL HERNIA REPAIR IN CONTAMINATED SURGERIES

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Introduction:

Recently, there has been increasing evidence supporting the use of permanent mesh in contaminated fields.

While biologic mesh continues to be utilized in cases of gross contamination, the indications to opt for slowly absorbable biosynthetic prostheses comes to question.

Methods:

The Abdominal Core Health Quality Collaborative (ACHQC) database was queried for elective ventral hernia repairs from January 2013 - 2022. We compared outcomes amongst different types of mesh in contaminated cases using propensity-score matching (PSM) adjusting for gender, diabetes, BMI, smoking status and operative time.

Results:

760 patients were included in the analysis. Slowly absorbable synthetic mesh (AS) was utilized in only 7% of the cases, while permanent mesh (P) in 77% and biologic mesh (B) in 16%.

Table 1. PSM of Ventral Hernia Repair in CDC Class III Surgeries.

	NA(n=153)	AS(n=51)	AB(n=51)	Total (n=255)	p
Gender (F)	80(52%)	28(55%)	25(49%)	133(52%)	0.84
Diabetes	29(19%)	12(24%)	12(24%)	53(21%)	0.68
BMI	32(29-37)	32(29-36)	32(29-35)	32(29-37)	0.87
Smoking	10(7%)	4(8%)	3(6%)	17(7%)	0.92
Recurrent	54(35%)	23(45%)	26(51%)	103(40%)	0.11
Outcomes					
Readmission	21(14%)	6(12%)	6(12%)	33(13%)	0.90
Reoperation	3(2%)	4(8%)	2(4%)	9(4%)	0.14
SSI	26(17%)	10(20%)	6(12%)	42(16%)	0.54
SSO	24(16%)	4(8%)	5(10%)	33(13%)	0.27
SSOPI	20(13%)	9(18%)	7(14%)	36(14%)	0.72
Recurrence @1-year	115(26%)	2(20%)	5(24%)	22(25%)	0.90

After propensity-matching 255 patients remained for comparative analysis. There were no significant differences in demographics/hernia characteristics between groups after propensity matching. In addition, there was no difference in readmission rates (14% P, 12% AS, 13% B, p=0.90), reoperation (2% P, 8% AS, 4% B, p=0.14) surgical site infection (17% P, 20% AS, 12% B, p=0.54), surgical site occurrence (16% P, 8% AS, 10% B, p=0.27) or surgical site occurrence requiring a surgical intervention (13% P, 18% AS, 14% B, p=0.72) among type of mesh at 30 days. At one year, there was no difference in recurrence amongst groups (26% P, 20% AS, 24% B, p=0.90).

Conclusion:

Based on our findings, AS has comparable outcomes to other types of mesh, particularly when an optimal retro-rectus repair is performed. AS represent an option to avoid permanent foreign body reaction and the liability from late complications of permanent mesh, as well as to address patient wishes to avoid a permanent foreign body and increase treatment satisfaction.

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ACHQC ABDOMINAL CORE HEALTH QUALITY COLLABORATIVE

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