Efficacy and Safety of OviTex® Reinforced Tissue Matrix for Ventral Hernia Repair: A Systematic Review and Meta-Analysis

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INTRODUCTION

OviTex (OviTex®, TELA Bio) mesh is a reinforced tissue matrix that combines biologic and synthetic components, aiming to reduce inflammatory response while providing durable abdominal wall support. Comparative analyses indicate that biosynthetic meshes like OviTex perform similarly to synthetic mesh regarding hernia recurrence and surgical site infection rates, and may be preferable in patients with increased risk factors or prior mesh infection. This systematic review and meta-analysis evaluated the efficacy and safety profile of OviTex, particularly in patients undergoing ventral wall hernia repair (VHR).

MATERIALS AND METHODS

Following PRISMA guidelines, we searched PubMed, Embase, Scopus, and ClinicalTrials.gov from inception to September 2025. Studies comparing the use of Ovitex mesh following VHR were included. The primary endpoint was recurrence rates. Secondary outcomes were surgical site occurrences (SSO) and hospital length of stay (LOS). Statistical analysis was performed with Review Manager 5.4 using a random-effects model.

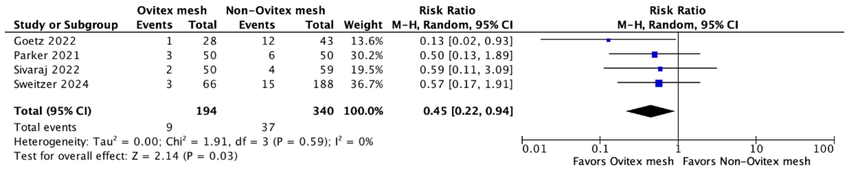
RESULTS

From 202 records, 9 met our inclusion criteria, to which 4 were included in our final pooled analysis. These studies encompassed 534 patients (Ovitex n = 194 [36.3%]), with a mean follow-up time of 19.3 months, and a mean hernia defect size of 130.3 cm 2 . An open approach was specified in 171 (32%) cases. The overall primary fascial closure rate was 88%, with mesh most frequently placed in the retrorectus (39%) or intraperitoneal (35%) planes. Overall analysis showed significantly reduced recurrence rates (RR 0.45; 95% CI 0.22 to 0.94; p = 0.03) for patients using Ovitex mesh (Figure 1A). There were no significant differences regarding SSO rates (RR 1.27; 95% CI 0.79 to 2.05; p = 0.32) (Figure 1B) and LOS (MD 3.18 days; 95% CI -6.38 to 12.74 days; p = 0.51) (Figure 1C) between groups.

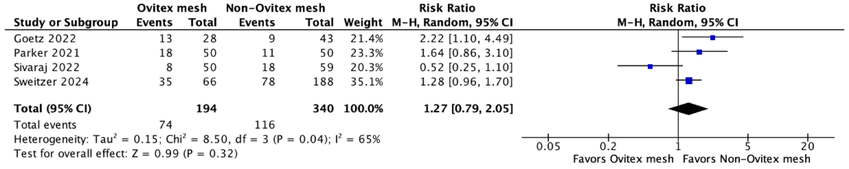
CONCLUSION

This systematic review and meta-analysis indicate that OviTex® mesh is a safe and effective option for ventral hernia repair, with significantly lower recurrence rates and comparable outcomes in terms of surgical site occurrences and length of stay. These findings support reinforced biologic mesh as a reliable alternative in patients at higher risk.

(A)



(B)



(C)

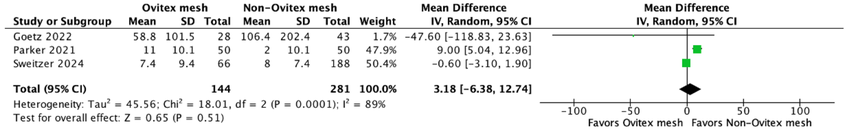


Figure 1. Association between Ovitex mesh and clinical outcomes following ventral hernia repair. Ovitex mesh was associated with (A) significantly lower recurrence rates, with no significant differences between groups in (B) surgical site occurrences and (C) hospital length of stay.