The efficacy of fibrin sealant fixation of hydrophobic implants in experimental onlay repair in rats.

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Abstract:

Background: Fibrin sealant (FS) mesh fixation has gained increasing popularity in open and laparoscopic hernia repair and works especially well with hydrophilic implant materials, e.g. titanized meshes. The aim of this study was the assessment of FS fixation of hydrophobic implants. A polypropylene mesh coated with alpha-OMEGA fatty acid (CQ, c-qur lite , Atrium) was tested in experimental onlay repair. Preserved pores facilitate FS fixation. Methods. Sixteen CQ (2x2 cm) were implanted in 8 male Sprague Dawley rats. Two different groups were investigated. Meshes were either fixed with FS 4 I.U. only (treatment) or sutured only (control). Follow-up was four weeks. Evaluation criteria were mesh dislocation, seroma formation, tissue integration and adhesion formation. Histology was performed (Hematoxilin Eosin staining and Cytokeratin staining). Results. Despite the hydrophobic mesh coating and excessive movements of the animals during the observation period, FS alone yielded a reliable fixation. No mesh dislocation occurred, no seroma was detected and mesh integration was excellent. Conclusions. Fixation of hydrophopic meshes with FS in onlay repair is feasible.