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The Effectiveness of Cyanoacrylates versus Sutures for Mesh Fixation after Lichtenstein Repair (SCyMeLi STUDY). A Systematic Review and Meta-Analyze of Randomized Controlled Trials

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Abstract

Background: Chronic postoperative inguinal pain (CPIP) is still the most frequent complication after open Lichtenstein repair and any strategy to reduce its incidence and implications is a step forward to better outcomes. Between the means of mesh fixation atraumatic glue fixation has been explored as such possibility. A meta-analysis of randomized controlled trials comparing the performance of cyanoacrylate glue versus sutures fixation was conducted.

Methods: the meta-analysis was conducted according to the PRISMA guidelines. Randomized controlled trials (RCTs) published between January 2000 and December 2021 were searched for in MEDLINE, PubMed, Web of Science, and Google Scholars. The quality of RCTs and the potential risk of bias were assessed using MINORS criteria and the Cochrane risk of bias tool.

Results: of 269 papers the meta-analysis was performed on 19 RCTs including 3578 patients. In the glue fixation group, the operation was shorter (mean pooled difference 6 minutes; SE = 0.47; 95% CI = - 6.77 - - 4.92; t test = -12.36; p <0.0001) and immediate postoperative pain was lower (2.37% vs 13.3%OR – 0.158; 95% CI = 0.064 – 0.386; p = 0.0001). There was no difference in terms of chronic pain, recurrence rate and wound events.

Conclusion: glue fixation of mesh in elective Lichtenstein repair of inguinal hernia seems to be a valid choice for a painful and safe procedure without increasing risk of recurrence.

Key words: inguinal hernia, chronic postoperative inguinal pain, fixation, cyanoacrylates, sutures, recurrence rate