

A systematic review and meta-analysis of randomised controlled trials of delayed primary wound closure in contaminated abdominal wounds

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Abstract

Background: A systematic review and meta-analysis was conducted to compare surgical site infection (SSI) between delayed primary (DPC) and primary wound closure (PC) in complicated appendicitis and other contaminated abdominal wounds.

Method: Medline and Scopus were searched from their beginning to November 2013 to identify randomized controlled trials (RCTs) comparing SSI and length of stay between DPC and PC. Studies' selection, data extraction, and risk of bias assessment were done by two independent authors. The risk ratio and unstandardised mean difference were pooled for SSI and length of stay, respectively.

Results: Among 8 eligible studies, 5 studies were done in complicated appendicitis, 2 with mixed complicated appendicitis and other types of abdominal operation and 1 with ileostomy closure. Most studies (75%) had high risk of bias in sequence generation and allocation concealment. Among 6 RCTs of complicated appendicitis underwent open appendectomy, the SSI between PC and DPC were not significantly different with a risk ratio of 0.89 (95% CI: 0.46, 1.73). DPC had a significantly 1.6 days (95% CI: 1.41, 1.79) longer length of stay than PC.

Conclusion: Our evidence suggested there might be no advantage of DPC over PC in reducing SSI in complicated appendicitis. However, this was based on a small number of studies with low quality. A large scale RCT is further required.

Keywords: delayed primary closure, wound closure, wound infection, surgical site infection, appendicitis, meta-analysis

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