

FPIN's Help Desk Answers

Staples vs. Sutures After Cesarean Delivery

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Clinical Question

Which type of skin closure after cesarean delivery has better cosmesis: staples or subcuticular sutures?

Evidence-Based Answer

Patients believe that staples and subcuticular sutures provide similar cosmetic outcomes after cesarean deliveries. However, the risk of wound complications (e.g., infection, separation, hematoma, seroma) is doubled with staples. (Strength of Recommendation: A, based on meta-analyses of randomized controlled trials [RCTs].)

Evidence Summary

A 2011 meta-analysis of five RCTs and one prospective cohort study compared wound closure with staples (N = 803) or subcuticular sutures (N = 684) in women undergoing primary, repeat, elective, or urgent cesarean delivery.¹ The primary outcome was wound complication, defined as infection or separation occurring two weeks to four months postpartum. Overall cosmesis was reported qualitatively because the studies used different measurement scales. Compared with subcuticular sutures, staples increased the risk of wound complication (13% vs. 6.6%; pooled odds ratio = 2.1; 95% confidence interval [CI], 1.4 to 3.0). The number needed to harm was 16, but only three of the studies blinded the outcome assessors. Cosmesis was qualitatively reported as a secondary outcome in three of the studies. Two of these studies (N = 215) reported cosmesis as assessed by blinded assessors to be equivalent for both techniques. In the third study (n = 50), the unblinded assessor favored closure with sutures.

In 2016, an updated meta-analysis included five additional RCTs for a total of 10 (N = 2,327) and excluded the cohort

study from the previous meta-analysis.² The studies compared incision closure after cesarean delivery using staples vs. subcuticular sutures, with a primary outcome of wound complication (e.g., infection, separation, hematoma, seroma) and a secondary outcome of cosmesis. In pooled data from all 10 studies, the staples group had an increased risk of wound complications compared with the sutures group (relative risk = 1.9; 95% CI, 1.5 to 2.5). Four RCTs used the 10-point Patient Scar Assessment Scale (PSAS) and Observer Scar Assessment Scale (OSAS) to assess cosmesis, and the results were combined quantitatively. A rating of 1 on either scale equals normal skin, and a rating of 10 equals the worst scar imaginable. At six to eight weeks postpartum, there was no significant difference between the groups in PSAS scores (two studies, N = 270; mean difference [MD] = -0.87; 95% CI, -2.0 to 0.25) or OSAS scores (two studies, N = 270; MD = -1.6; 95% CI, -5.4 to 2.2). However, at six to 12 months postpartum, the suture group had lower mean OSAS scores (three studies, N = 392; MD = 2.5; 95% CI, 1.2 to 3.8) but similar PSAS scores (three studies, N = 392; MD = 1.0; 95% CI, -0.80 to 2.9).

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