In the management of cesarean scar defects, is there a superior surgical method for treatment?

According to this meta-analysis, which compared the data on laparoscopic, hysteroscopic, vaginal, and combined laparoscopic and hysteroscopic repair of cesarean scar defects, combined laparoscopic and hysteroscopic repair was associated with a shorter duration of abnormal bleeding. Combined laparoscopy and hysteroscopy also was found to decrease the depth of the defect when compared with vaginal repair. Although the findings are statistically significant, it is unclear if they are clinically significant; long-term outcomes are similarly unclear. More randomized controlled trials are required in order to make a clear distinction as to which method of repair is superior.

FAST TRACK

More study is needed to clearly distinguish which of the surgical methods analyzed is superior in terms of managing CSD

He Y, Zhong J, Zhou W, et al. Four surgical strategies for the treatment of cesarean scar defect: a systematic review and network meta-analysis. J Minim Invasive Gynecol. 2020;27:593-602.

EXPERT COMMENTARY

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With the increase in cesarean deliveries performed over the decades, the sequelae of the surgery are now arising. Cesarean scar defects (CSDs) are a complication seen when the endometrium and muscular layers from a prior uterine scar are damaged. This damage in the uterine scar can lead to abnormal uterine bleeding and the implantation of an ectopic pregnancy, which can be life-threatening. Ultrasonography can be used to diagnose this defect, which can appear as a hypoechoic space filled with postmenstrual blood, representing a myometrial tear at the wound site.[1] There are several risk factors for CSD, including multiple cesarean deliveries, cesarean delivery during advanced stages of labor, and uterine incisions near the cervix. Elevated body mass index as well as gestational diabetes also have been found to be associated with inadequate healing of the prior cesarean incision.[2] Studies have shown that both single- and double-layer closure of the hysterotomy during a cesarean delivery have similar incidences of CSDs.[3,4] There are multiple ways to correct a CSD; however, there is no gold standard that has been identified in the literature.

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Details about the study

The study by He and colleagues is a meta-analysis aimed at comparing the treatment

WHAT THIS EVIDENCE MEANS FOR PRACTICE

CSDs are a rising concern due to the increasing cesarean delivery rate. It is critical to be able to identify as well as correct these defects. This is the first systematic review to compare 4 techniques of managing CSDs. Based on this article, there may be some additional benefit from combined hysteroscopic and laparoscopic repair of these defects in terms of decreasing bleeding and decreasing the scar defect depth. However, how these results translate into long-term outcomes for patients and their future pregnancies is still unknown, and further research must be done.

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of CSDs via laparoscopy, hysteroscopy, combined hysteroscopy and laparoscopy, and vaginal repair. The primary outcome measures were reduction in abnormal uterine bleeding and scar defect depth. A total of 10 studies (n = 858) were reviewed: 4 randomized controlled trials (RCTs) and 6 observational studies. The studies analyzed varied in terms of which techniques were compared.

Patients who underwent uterine scar resection by combined laparoscopy and hysteroscopy had a shorter duration of abnormal uterine bleeding when compared with hysteroscopy alone (standardized mean difference [SMD] = 1.36; 95% confidence interval [CI], 0.37–2.36; P = .007) and vaginal repair (SMD = 1.58; 95% CI, 0.97–2.19; P<.0001). Combined laparoscopic and hysteroscopic technique also was found to reduce the diverticulum depth more than in vaginal repair (SMD = 1.57; 95% CI, 0.54–2.61; P = .003).

Study strengths and weaknesses

This is the first meta-analysis to compare the different surgical techniques to correct a CSD. The authors were able to compare many of the characteristics regarding the routes of repair, including hysteroscopy, laparoscopy, and vaginal. The authors were able to analyze the combined laparoscopic and hysteroscopic approach, which facilitates evaluation of the location and satisfaction of defect repair during the procedure.

Some weaknesses of this study include the limited amount of RCTs available for review. All studies were also from China, where the rate of CSDs is higher. Therefore, the results may not be generalizable to all populations. Given that the included studies were done at different sites, it is difficult to determine surgical expertise and surgical technique. Additionally, the studies analyzed varied by which techniques were compared; therefore, indirect analyses were conducted to compare certain techniques. There was limited follow-up for these patients (anywhere from 3 to 6 months), so long-term data and future pregnancy data are needed to determine the efficacy of these procedures.

References

1. Woźniak A, Pyra K, Tinto HR, et al. Ultrasonographic criteria of cesarean scar defect evaluation. *J Ultrason*. 2018;18:162-165.
2. Antila-Långsjö RM, Mäenpää JU, Huhtala HS, et al. Cesarean scar defect: a prospective study on risk factors. *Am J Obstet Gynecol*. 2018:219:458e1-e8.
3. Di Spiezio Sardo A, Saccone G, McCurdy R, et al. Risk of cesarean scar defect following single- vs double-layer uterine closure: systematic review and meta-analysis of randomized controlled trials. *Ultrasound Obstet Gynecol*. 2017;50:578-583.
4. Roberge S, Demers S, Berghella V, et al. Impact of single- vs double-layer closure on adverse outcomes and uterine scar defect: a systematic review and meta-analysis. *Am J Obstet Gynecol*. 2014;211:453-460.