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Asymmetric Cesarean scar thickness: consistent left lateral thinning in pregnant and non pregnant women

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Introduction

Previous cesarean section (CS) is associated with pregnancy complications and with cesarean scar disorder in non-pregnant patients. Sonographic assessment of the CS scar thickness is important for identifying women at risk and guide management. Our objective was to assess whether the CS scar is homogeneous or thinner at its lateral aspects in pregnant and non-pregnant women.

Methods

We prospectively measured CS scar thickness in pregnant and non pregnant women with at least one prior CS. In non pregnant women, residual myometrial thickness (RMT) was measured transvaginal at three locations: mid scar, and right and left edges. In pregnant women, RMT was measured transvaginal in the first trimester and transabdominal in the second and third trimesters. Adjacent myometrial thickness (AMT) and presence of a niche were recorded. Demographic and obstetric data were collected by questionnaire.

Results

We recruited 63 non-pregnant and 63 pregnant women. Demographic variables were similar, except for higher maternal age and gravidity in the non pregnant group. A niche was observed in 24 (38%) of non pregnant women but in only two (3.2%) pregnant women. Mid-scar RMT was 2.4 mm thinner in pregnant than in non-pregnant women: 3.7 mm

vs 6.1 mm, $p < 0.001$. AMT was also significantly thinner in pregnant women, while the RMT/AMT ratio remained 0.42 in both groups. The scar was significantly thinner at the left than at the right edge: 5.7 mm vs 7.0 mm in non-pregnant women ($p < 0.001$) and 3.6 mm vs 5.2 mm in pregnant women ($p = 0.002$). The mid-scar RMT was similar to the left edge ($p = 0.652$). The left edge asymmetry was not explained by parity, BMI, number of previous CS or CS at full dilatation

Conclusion

Cesarean scars show significant asymmetry, with thinner myometrium at the mid scar and left edge compared with the right edge, in both pregnant and non pregnant patients. As no clinical or demographic factors accounted for this pattern, surgical technique and wound repair may play a key role in scar remodeling and laterality of thinning.



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