

A Comparative Analysis of Diagnosis of Uterine ‘Niche’ Performed by Non-Specialist and Specialist Sonographers

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BACKGROUND

A cesarean scar defect (“niche”) is defined sonographically, primarily using 2D-TVUS, and is characterized by myometrial discontinuity or thinning. Reported prevalence ranges from 24% to over 60% after cesarean delivery.

OBJECTIVE

To compare diagnosis and evaluation of a niche performed by a non-specialist versus a specialist sonographer in women after cesarean delivery, using two-dimensional (2D) transvaginal ultrasound.

METHODS

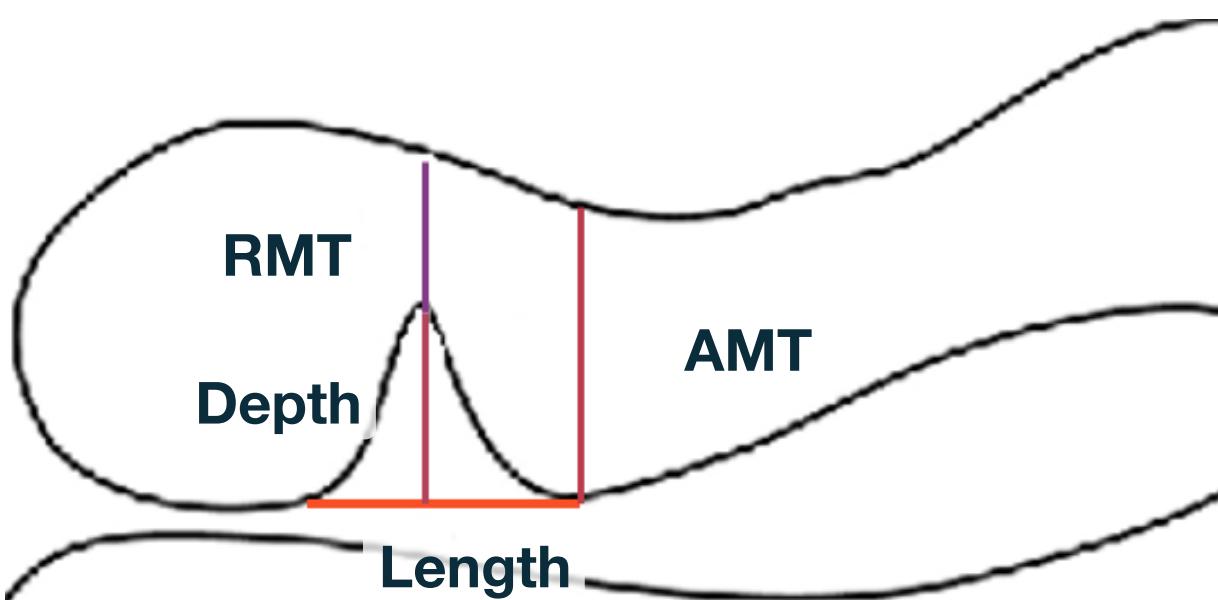
- Cohort study at a single tertiary care center, Jan 2011–Dec 2018
- All participants underwent 2D-TVS of the uterine scar by one of two OBGYN residents (non-specialists)
- Images/videos re-reviewed by a blinded specialist sonographer using ImageJ, referenced to endometrial width
- Primary outcome: detection of a uterine scar defect, defined as indentation ≥2 mm at the scar site

Inclusion

Women ≥6 months after cesarean delivery

Exclusion

Scars from other procedures; morbidly adherent placenta; cesarean hysterectomy; congenital uterine anomalies



Schematic of uterine scar (niche) measurement

53 WOMEN EVALUATED

MAIN RESULTS

Table 1 – Patient Characteristics

Characteristic	n = 53
Age (years)	34 (31–39)
BMI (kg/m²)	24 (20–27)
Gravidity	2 (1–3)
Parity	2 (1–3)
Cesarean deliveries (CD)	1 (0–2)
Cervical dilatation	1 (1–3)
Gestational week	38 (37–40)
Time from CD (months)	11 (10–11)

Data are presented as median (interquartile range).

Table 2 – Uterine Scar Measurements

Measurement	Non-specialist	Specialist	p
Length (mm)	6.50 (5.60–8.12)	9.13 (6.92–10.90)	0.03
Depth (mm)	3.50 (2.60–5.90)	3.58 (2.34–4.93)	0.48
RMT (mm)	5.05 (3.92–6.57)	4.00 (2.63–7.81)	0.29
AMT (mm)	10.85 (8.62–12.90)	12.48 (9.95–16.08)	0.96
RMT / AMT	0.51 (0.40–0.62)	0.04 (0.27–0.05)	0.001

Data are presented as median (interquartile range).

Table 3 – Diagnosis of Niche

Finding	Non-spec. (%)	Specialist (%)	p
Uterine scar defect (≥2mm)	34 (64)	42 (79)	0.08
Significant niche*	18 (34)	10 (19)	0.07

*Defined by low RMT ≤2.5mm or impression of profound uterine defect requiring additional evaluation.

CONCLUSION

Evaluation of a niche in women after cesarean delivery using 2D transvaginal ultrasound performed by non-specialist sonographers is comparable to that performed by a specialist.