



OBSTETRICS & GYNECOLOGY
The Edith Wolfson University Medical Center

Clinical and sonographic predictors of cesarean scar niche formation and associated symptoms: a prospective cohort study

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1 Background & Objective



Cesarean scar niche is an anatomic defect at the uterine incision site and has been associated with abnormal uterine bleeding, pelvic pain, and subfertility.

This prospective cohort study aimed to identify predictors of niche formation and to examine their association with postpartum symptoms.

2 Methods

Prospective Cohort Study

Women who underwent elective or emergent cesarean delivery were evaluated at 3–6 months postpartum.

Symptom Assessment

- Standardized symptom questionnaire
- Postmenstrual bleeding, dysmenorrhea, dyspareunia, and chronic pelvic pain

Imaging Protocol

- Transvaginal ultrasound
- Myometrial indentation ≥ 2 mm defined a niche
- Large niche: RMT < 3 mm or RMT/AMT ratio < 0.5

Figure 1. Transvaginal ultrasound of cesarean scar niche

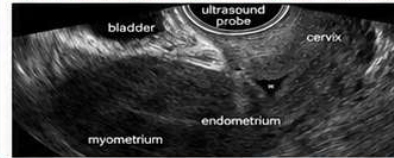
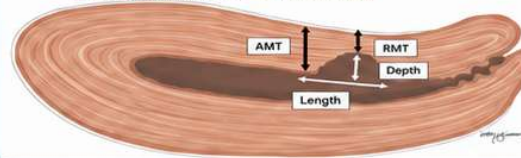


Figure 2. Schematic of niche measurements



AMT = adjacent myometrial thickness; RMT = residual myometrial thickness

3 Study Cohort



381
women included



243 / 381
(63.8%) had a niche



92 / 381
(24.1%) had a large niche

4 Key Results

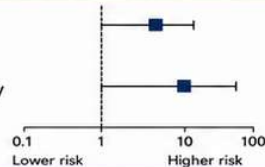
Independent predictors of niche formation (aOR [95% CI])



Higher BMI
aOR 1.07
(95% CI 1.00–1.14)



Emergent cesarean delivery
aOR 3.57
(95% CI 1.11–11.49)



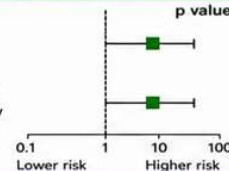
Factors associated with large niche



Diabetes mellitus
P=0.011



Lower fetal station
at cesarean delivery
P=0.029



No association with symptoms or closure technique

1

No association between barbed sutures vs. Vicryl and niche formation (aOR 1.02, 95% CI 0.46–2.19; p=0.976).

2

Neither niche presence nor severity was associated with postoperative symptom burden.

5 Conclusions



Higher BMI and emergent cesarean delivery independently predicted niche formation.



Diabetes mellitus and lower fetal station were associated with larger defects.



Barbed sutures were not associated with an increased risk of niche formation.



Early targeted sonographic assessment may support risk stratification, counseling, and follow-up.