

Association of bladder flap dissection at primary Caesarean delivery with Caesarean scar location in the subsequent pregnancy

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Introduction

The location of a Caesarean incision influences future placentation and the risk of placenta accreta spectrum (PAS).

Objective: To evaluate whether bladder flap dissection at the time of a primary Caesarean section (CS) affects the position of the uterine scar relative to the internal cervical os (ICO) in a subsequent pregnancy

Methods

This is a retrospective case control study of women who had a primary CS at a regional perinatal center between 2016 and 2024. Operative reports were reviewed and patients were categorized according to bladder flap dissection (bladder flap group) or omission (control group).

Images were reviewed from the subsequent pregnancy to measure the distance of the CS scar from the ICO. All images were previously obtained via transvaginal ultrasound between 11-14 weeks gestation.

Primary outcome:

- Sonographic distance between CS scar and ICO

Secondary outcomes:

- Scar location relative to the cervicoisthmical complex (CIC)
- Presence of a CS niche, defined as residual myometrial thickness < 3 mm at the scar level

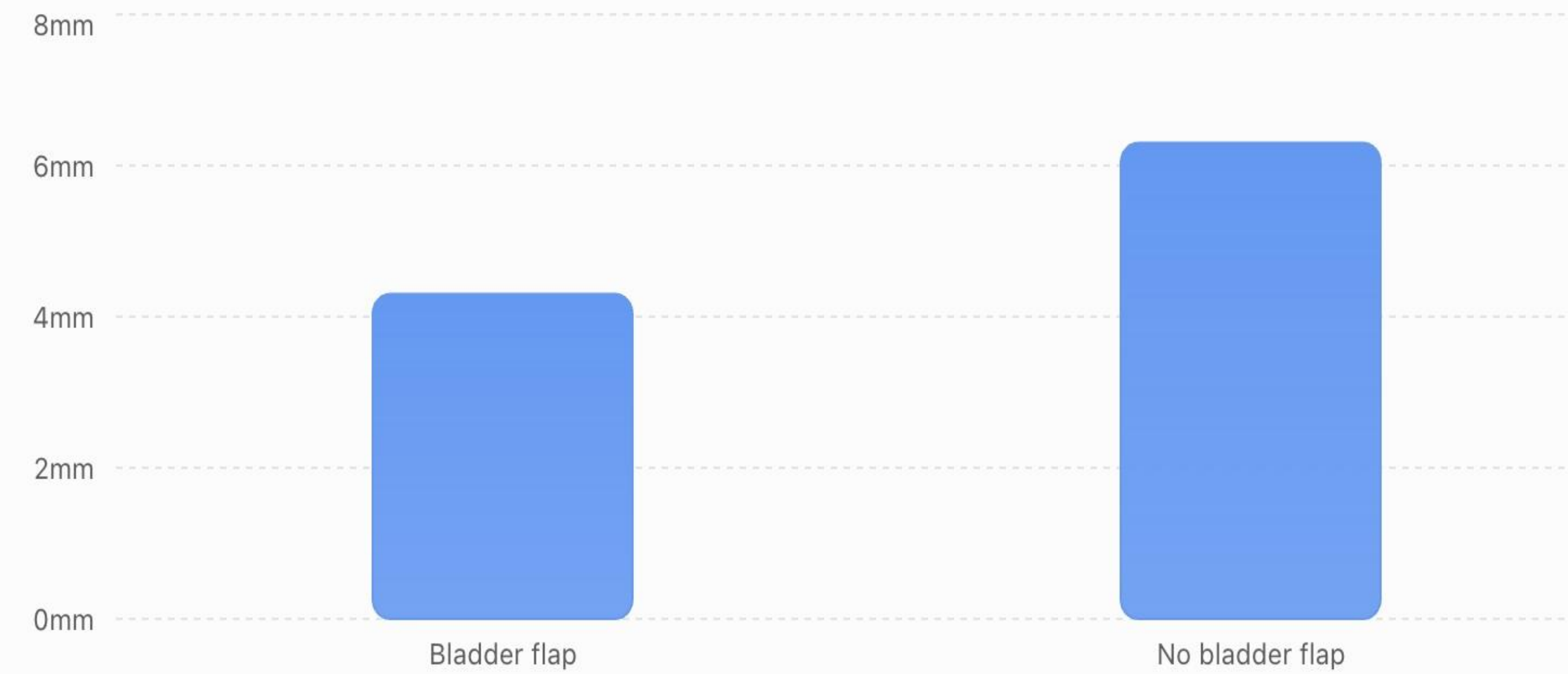
Results

- A total of 348 patients were included: 167 in the bladder flap group and 181 in the control group
- Maternal characteristics and incidence of CS performed during labor (74.6% vs 78.4%, p=0.3) were similar between groups
- After omission of a bladder flap, the CS scar was located farther from the ICO (6.3 ± 0.4 mm vs 4.3 ± 0.5 mm, p<0.01)
- In both groups, the scar was most often located within the CIC (89.0% vs 93.4%, p=0.1)
- The incidence of a CS niche was similar between groups (28.2% vs 26.9%, p=0.7), as were complications in the subsequent pregnancy.

Graph 1

Cesarean scar location after omission of the bladder flap

Mean distance of the cesarean scar from the internal cervical os (ICO). Omission of the bladder flap was associated with a significantly greater scar-to-ICO distance.

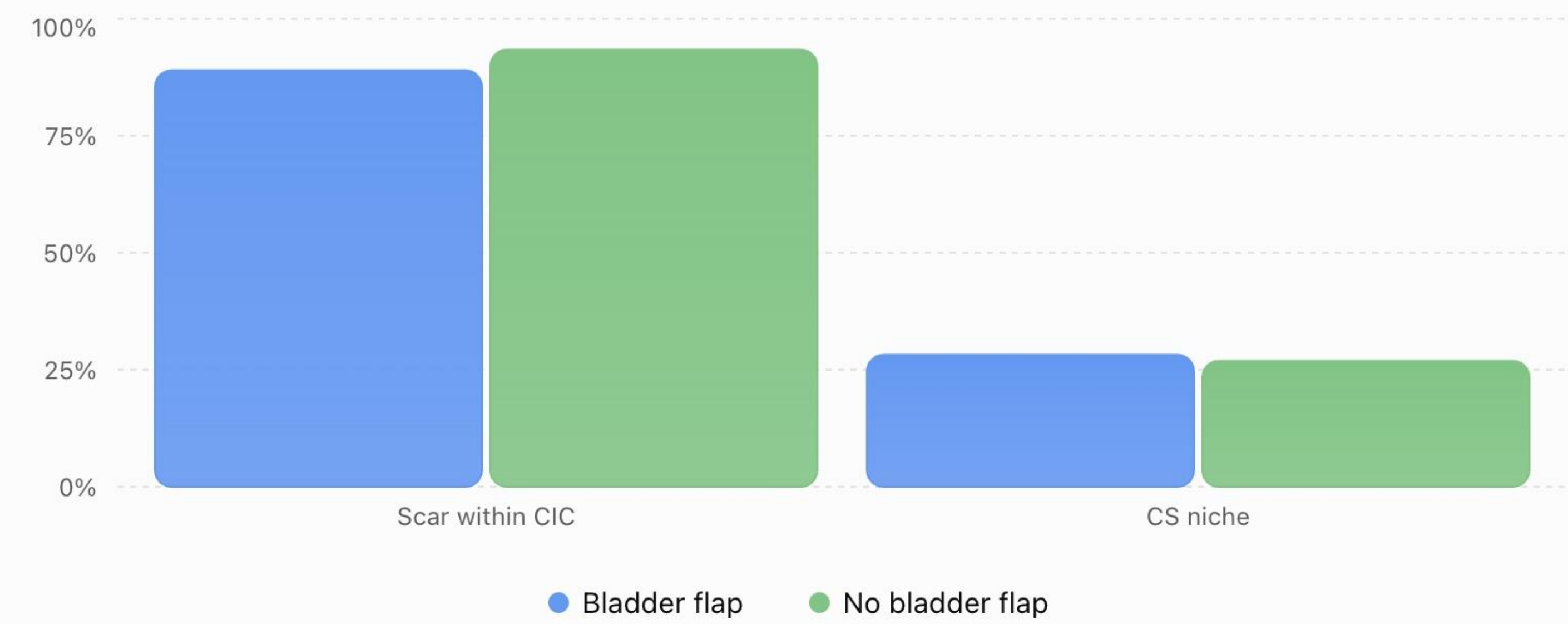


Bladder flap: 4.3 ± 0.5 mm; no bladder flap: 6.3 ± 0.4 mm; p < 0.01.

Graph 2

Cesarean scar outcomes by surgical technique

Comparison of cesarean scars located within the CIC and cesarean scar niche incidence between groups.



CIC location: p = 0.10; CS niche incidence: p = 0.70. Values shown as percentages.

Image 1: Cesarean scar within the CIC



Conclusion

- Omission of bladder flap dissection at primary Caesarean delivery was associated with a higher uterine scar location (further from the ICO) in the subsequent pregnancy, without an increase in Caesarean scar niche formation
- Association between higher scar location with increased risk of PAS warrants further investigation