

Background

A recent randomized controlled trial (Bergendahl et al, BMJ 2024) reported a 50% reduction in obstetric anal sphincter injury (OASI) in nulliparous patients undergoing vacuum delivery who were assigned to lateral episiotomy versus no episiotomy.

Objective

To evaluate OASI in singleton nulliparous vacuum deliveries at >= 34 weeks' gestation in a US population.

Materials & Methods

Study design: Retrospective observational study.

Population: Singleton nulliparous vacuum deliveries at >= 34 weeks' gestation at 17 US hospitals (2022-2023) participating in a perinatal quality improvement program (OB COAP)

Intervention: Midline (M) or mediolateral (ML) episiotomy versus no episiotomy (N).

Primary outcome: Incidence of 3rd or 4th degree laceration (Obstetrical anal sphincter injury or OASI).

Secondary outcome: blood loss.

Statistical analysis:

- Unadjusted odds ratios (OR) for OASI were calculated for each ML and M group compared to the N group.
- Adjusted ORs controlled for diabetes (gestational and pre-pregnancy) and birthweight.
- The Kruskal-Wallis test was used to compare blood loss.

For questions or any information about OB COAP contact ksitcov@qualityhealth.org

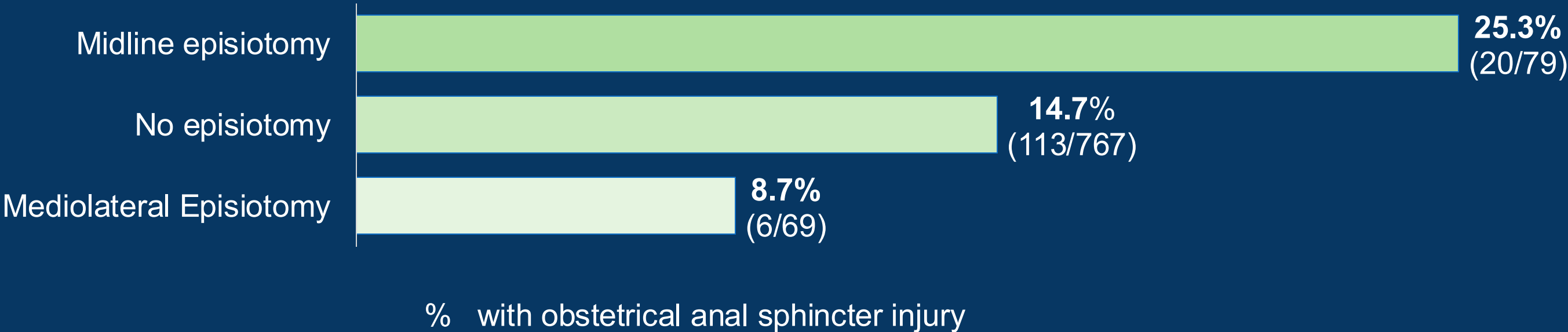
Midline episiotomy is associated with increased obstetrical anal sphincter injury (OASI) in nulliparous vacuum deliveries but remains the most common approach to episiotomy in this US cohort.



Results

915 vacuum deliveries were included.
148 (16.1%) had an episiotomy:
- 79 (53.4%) were midline
- 69 (46.6%) were mediolateral

Figure 1 Midline episiotomy was associated with the highest rate of OASI (3rd or 4th degree laceration) in nulliparous patients undergoing vacuum delivery.



Results

Table 1. Midline episiotomy was associated with Increased odds of OASI compared to no episiotomy.

	Unadjusted odds for 3 rd or 4 th degree laceration OR (95% CI)	Adjusted odds* for 3 rd or 4 th degree laceration aOR* (95% CI)
No episiotomy (N=767)	Ref	Ref
Mediolateral (N=69)	0.55 (0.23, 1.30)	0.52 (0.22, 1.26)
Midline (N=79)	1.96 (1.14, 3.38)	2.31 (1.32, 4.05)

Odds were adjusted for diabetes (gestational and pre-pregnancy) and birthweight). Adjustments were selected based on a directed a-cyclical graphic (DAG). Missing birthweight (n=116) was included as a separate group in the model.

Table 2. Midline episiotomy was associated with Increased odds of OASI compared to mediolateral episiotomy.

	Unadjusted odds for 3 rd or 4 th degree laceration OR (95% CI)	Adjusted odds* for 3 rd or 4 th degree laceration aOR* (95% CI)
Mediolateral (N=69)	Ref	Ref
Midline (N=79)	3.56 (1.34, 9.47)	4.12 (1.45, 11.78)

Table 3. No differences were observed in reported blood loss or quantified blood loss.

	Reported blood loss (ml) Median (IQR) N=873	Quantified blood loss (ml) Median (IQR) N=503
No episiotomy	350 (219, 508)	400 (227, 590)
Mediolateral	351 (217, 585)	400 (239, 655)
Midline	350 (200, 490)	368 (216, 519)
P-value *	0.354	0.851

* Kruskal Wallis test

Conclusion

- In nulliparous patients undergoing vacuum delivery, midline episiotomy was associated with increased risk of OASI compared to mediolateral episiotomy or to no episiotomy.
- Given the evidence from a new European randomized controlled trial, more research is needed to determine whether mediolateral episiotomy in nulliparous vacuum deliveries might reduce OASI in a US population.