Urinary Retention and Early Foley Removal after Cesarean Delivery with Neuraxial Morphine

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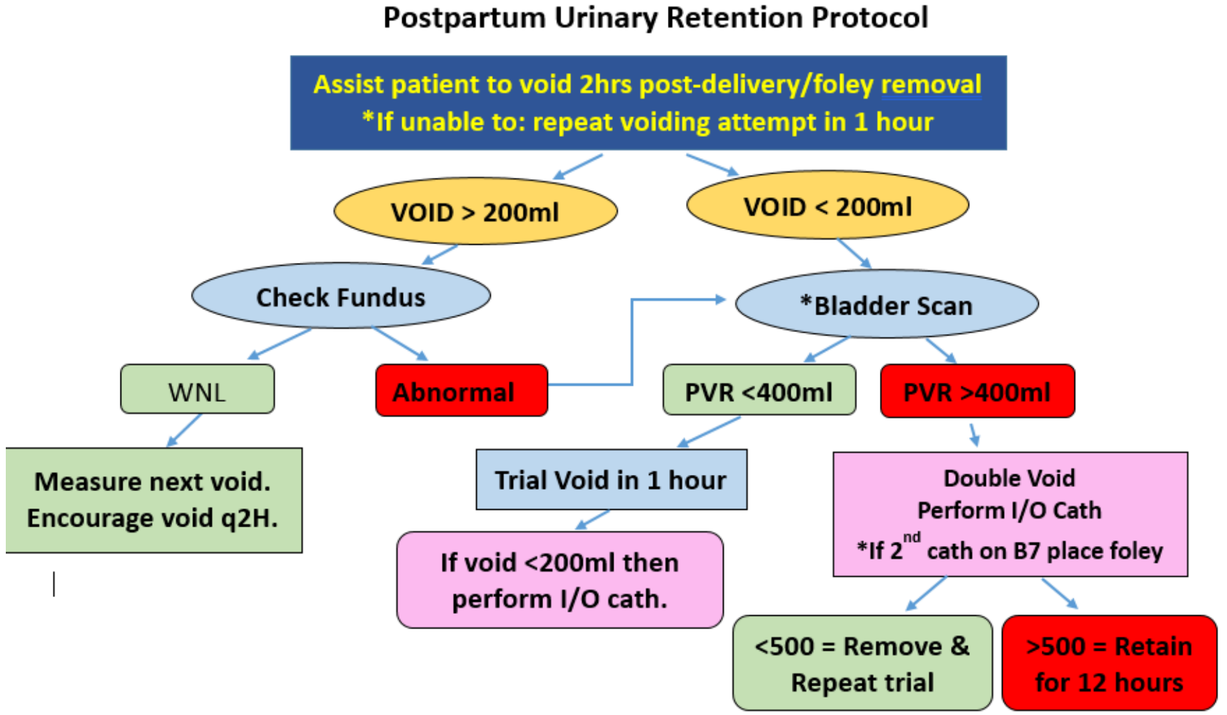
Background: SOAP ERAC recommends neuraxial long-acting opioid *AND* urinary catheter removal </=12H after cesarean delivery (CD)

- Increased patient comfort/ambulation,
- Decreased systemic opioid use, reduce UTI rate, reduced LOS

Known: Neuraxial opioids can cause urinary dysfunction

Unknown: Does foley removal </=12H after CD impact the occurrence of urinary interventions in patients with neuraxial morphine for cesarean delivery?



Hypothesis: Foley catheter removal </=12H compared with >12H after cesarean delivery (CD) with neuraxial morphine (0.1 mg IT or 2 mg epidural) does not increase the rate of urinary catheter reinsertion.

Intervention: September 1, 2022, ERAC was implemented with standardized neuraxial morphine, early urinary catheter removal, and a protocolized “decision tree” for nursing urinary interventions.

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Study Design: *Retrospective Cohort*

Patient Population:

- Cesarean delivery (CD) during 2023 with neuraxial morphine
  - 0.1 mg IT or 2 mg Epidural
  - Foley removal >/=6H after delivery

Exclusion Criteria:

- Postoperative MgSO4
- Postoperative Bupivacaine infusion
- Cesarean hysterectomy

EMR data extracted:

- Time to catheter removal after delivery
- Occurrences of straight catheterization and foley reinsertion
- Neuraxial morphine route
- Preoperative Bupivacaine infusion
- Perioperative blood transfusion

Statistical Analyses:

- Two groups: Foley removed </=12H or >12H after CD
- Multivariable logistic regression.

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Results

Timeliness: 60.5% "on-time" (</= 12H) foley removal"

- Morphine route/labor epidural not significant
- 14/484 (2.9%) had blood transfusion
  - 12/14 Late removal, OR =9.8 [0.003]* (2.2 - 45.5)

		Straight Catheterization Status			
		Overall	Not Performed	Performed	Adjusted Odds Ratio [p-value] (CI 95%)
Patients, n (%)		484	438 (90.5)	46 (9.5)	
Delivery to foley removal TIME, mean hours (SD)		12.5 (4.7)	12.5 (4.9)	12.0 (3.6)	
Foley Removal Timeliness, n (%)	**</= 12H**	293	261 (89.1)	32 (10.9)	Ref
	> 12H	191	177 (92.7)	14 (7.3)	0.57 [0.105] (0.29 - 1.1)
Neuraxial morphine route, n (%)	**intrathecal**	289	267 (92.4)	22 (7.6)	Ref
	epidural	195	171 (87.7)	24 (12.3)	0.83 [0.668] (0.36 - 1.9)
Preop labor epidural, n (%)	**No**	336	314 (93.4)	22 (6.5)	Ref
	Yes	148	124 (83.8)	24 (16.2)	**3.2** [0.006*] (1.4 - 7.5)
Blood transfusion for PPH, n (%)	**No**	470	426 (90.6)	44 (9.3)	Ref
	Yes	14	2 (14.3)	12(85.7)	2.3 [0.310] (0.46 - 11)

Foley reinsertion in 11/484 (2.3%)

- Trend towards </=12H removal (9/11), not significant

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Discussion:

- ERAC implementation ≠ element compliance (60.5%)
- Blood transfusion ► 9.8 (OR) late foley removal
- Foley removal </=12H was NOT associated with statistically significant ↑urinary interventions in the setting of neuraxial morphine
- Straight cath and foley reinsertion rates were low overall (9.5% and 2.3%, respectively)
- Labor epidurals associated with ↑straight catheterization (16.2%) after cesarean delivery

Limitations

- Did not address patient demographics
- Postpartum hemorrhage (PPH) identified by documentation of blood transfusion

Conclusions

- Urinary catheter removal </=12H after cesarean delivery should be emphasized

Future work

- Further address barriers to </=12H foley removal
- Examine relationship of labor epidurals and ↑straight catheterization