BC WOMEN'S HOSPITAL+ HEALTH CENTRE
Provincial Health Services Authority

Intraoperative pain during cesarean delivery and impaired quality of recovery: a retrospective cohort study.

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Background and Aims

- Caesarean delivery (CD) is one of the most common surgical procedures worldwide
- Despite neuraxial anaesthesia being preferred, **11–22% of patients** report intraoperative pain[1]
- Physician assessment often **underestimates** pain[2] — patient-reported measures are essential
- ObsQoR-10 is a **validated tool** measuring patient-reported functional recovery after CD[3]
- **Gap in the literature:** The link between intraoperative pain and ObsQoR-10 at 24 hours post-CD is not yet understood
- **Aim:** Explore this relationship using patient-reported survey data.

1. Anesthesiology. 2025;143(1):156-167
2. Eur J Pain. 2022;26(1):219-226
3. J Clin Anesth. 2020;63:109781

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Study Design and Methods

Design: Retrospective review of QA survey data following local REB approval

Setting: Tertiary teaching hospital QA initiative, launched November 2025

Data collection: ObsQoR-10 and intraoperative pain survey completed 24h postpartum via REDCap

Inclusion: Patients ≥19 years, cesarean delivery at ≥37 weeks' gestation

Exclusions: Substance use disorder, general anaesthesia as a primary technique, NICU admission/stillbirth, incomplete or duplicate responses

Obstetric Quality of Recovery-10 (ObsQoR-10©) Scoring Tool

Instructions: Below is a list of problems that women can experience after childbirth. Please read each problem carefully and indicate how much you have been bothered by that problem in the in the **past 24 hours**:

Questions 1 – 4
Please score the **severity** of the below symptoms in the past 24 hours: (Please choose one score (0-10) for each symptom)

		Worst Imaginable					Moderate					None
		10	9	8	7	6	5	4	3	2	1	0
1	Pain											
2	Nausea or vomiting											
3	Dizziness											
4	Shivering											

Questions 5-10
Please score the following aspects of your recovery in the past 24 hours: (Please circle one score for each item)

		No / Never					Sometimes / with help					Yes / Always
5	I have been comfortable	0	1	2	3	4	5	6	7	8	9	10
6	I am able to mobilise independently	0	1	2	3	4	5	6	7	8	9	10
7	I can hold a baby without assistance	0	1	2	3	4	5	6	7	8	9	10
8	I can feed / nurse my baby without assistance	0	1	2	3	4	5	6	7	8	9	10
9	I can look after my personal hygiene / toilet	0	1	2	3	4	5	6	7	8	9	10
10	I feel in control	0	1	2	3	4	5	6	7	8	9	10

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Results

- Preliminary analysis for 35% (n=174) of our intended sample size (n=500) revealed an intraoperative pain incidence of 6.9% (n=12).
- In patients with intraoperative pain, median ObsQoR-10 score was 67.5 [57.5-79.0]
- In patients without intraoperative pain, median ObsQoR-10 score was 73.5 [65.0-85.0]
- This difference was not statistically significant (p=0.1963)
- Higher parity was associated with increased risk of intraoperative pain (p=0.0005)

Table 1: Risk Factors Associated with Feeling Sharp Pain at Any Point During C-Section Surgery

Variable	Yes (n=12)	No (n=163)	Total (n=174)	P-Value
ObsQoR Scores				
Total ObsQoR score	67.5 [57.5–79.0]	73.5 [65.0–85.0]	73.0 [65–85]	0.1963
Symptomatic ObsQoR score (Q1–Q4)	33 [25.5–34.5]	31 [27.0–36.0]	31.5 [27–36]	0.73
Functional ObsQoR score (Q5–10)	36.5 [31.5–45.0]	44.5 [37–51]	44 [36–56]	0.0932
Demographics				
Age	35.08 (±3.75)	34.79 (±4.52)	34.81 (±4.46)	0.8769
BMI	29.57 (±4.26)	29.99 (±4.97)	29.95 (±4.90)	1
GA weeks	38.58 (±0.90)	38.89 (±1.24)	38.87 (±1.22)	0.4384
Parity, n (%)				**0.0005**
0	4 (33.33%)	102 (62.96%)	106 (60.92%)	
1	3 (25.00%)	48 (29.63%)	51 (29.31%)	
2+	5 (41.67%)	12 (7.41%)	17 (9.77%)	
Surgical Factors				
Repeat Cesarean Delivery — No	5 (41.67%)	108 (66.67%)	113 (64.94%)	0.0799
Repeat Cesarean Delivery — Yes	7 (58.33%)	54 (33.33%)	61 (35.06%)	
Emergency Case — No	8 (66.67%)	77 (47.53%)	85 (48.85%)	0.2007
Emergency Case — Yes	4 (33.33%)	85 (52.47%)	89 (51.15%)	
Quantitative blood loss	503.75 (±329.04)	538.72 (±268.96)	536.26 (±272.61)	0.4003
Total surgical duration (min)	49.42 (±17.13)	45.11 (±14.49)	45.41 (±14.67)	0.3587
Anesthesia				
Spinal or CSE (CSE n=3)	12 (100.00%)	110 (67.90%)	122 (70.11%)	**0.0191**
Epidural	0 (0.00%)	52 (32.10%)	52 (29.89%)	
IV opioid supplementation — No	7 (58.33%)	150 (92.59%)	157 (90.23%)	**0.0001**
IV opioid supplementation — Yes	5 (41.67%)	12 (7.41%)	17 (9.77%)	
Dose of IT morphine	100 (±0.00)	106.31 (±16.67)	105.74 (±16.00)	0.2155
Dose of IT fentanyl	13.63 (±2.34)	12.99 (±2.46)	13.05 (±2.45)	0.4073
Total opioid use in 24h	3.90 (±2.92)	3.35 (±2.68)	3.41 (±2.68)	0.6705

Discussion

- Intraoperative pain was associated with **lower 24h ObsQoR-10 scores**, but this did not reach statistical significance

- **Higher parity** may be an important predictor — women with parity ≥2 were more likely to report pain

Limitations:

- Low pain event rate limited statistical power
- Retrospective pain recall bias from survey design
- Higher intrathecal bupivacaine doses used locally (12.5–13.5 mg) vs other centres (9.5–12.5 mg) may limit generalisability

1. Anesthesiology. 2025;143(1):156-167

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Conclusion

- **Key Takeaway**
  - Intraoperative pain may impair recovery after CD, but a **larger, adequately powered study** is needed to confirm this signal.

- **Clinical Implication**
  - Lower-than-expected pain rates at our centre may reflect **higher intrathecal bupivacaine doses** — a modifiable factor worth investigating.

- **Next Steps**
  - Complete recruitment to **n=500** to achieve adequate power.
  - Examine parity, anaesthesia technique, and individual ObsQoR-10 domain associations.