

Regional survey of anaesthetic technique for a parturient with high body mass index undergoing elective Caesarean section.

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Introduction

Regional anaesthesia (RA) is the preferred anaesthetic technique for high body mass index (BMI) parturients undergoing Caesarean section (CS), in order to avoid high risk general anaesthesia (GA) [1]. Advantages of a combined spinal epidural (CSE) technique include titratability of the sensory block and facilitated insertion of the spinal needle through the Tuohy needle. Disadvantages include longer time in the sitting position (which may lower the spinal block), use of an untested catheter, risk of catheter failure and risk of postdural puncture headache. Advantages of a single shot spinal (SSS) include simplicity and familiarity of technique. Disadvantages include lack of opportunity to raise or extend the sensory block. The possibility that spread of spinal anaesthesia may be enhanced in those with a BMI of more than 50kg/m² has not been ruled out [2]. Anaesthetists in the north east of England who provide obstetric anaesthesia, were surveyed to ascertain how they would provide anaesthesia for such a patient.

Method

An electronic, anonymised survey was sent to all grades of anaesthetists who provide obstetric anaesthesia, in all eight obstetric units in the region. The survey consisted of a small number of questons relating to a hypothetical scenario.

Participants have agreed to publication of the anonymised survey data.

This survey has been registered and approved by the Trust Audit Department and approved by the Trust Research and Innovation Department.

Hypothetical Scenario

You are asked to provide anaesthesia for a patient for elective Caesarean section in three days time. The patient has the following characteristics: Parity: G1P0, indication for CS: reduced foetal growth, gestation: 38+0 weeks, height: 160cm (5’3”), term weight: 188kg, term BMI: 73.4kg/m², co-morbidities: gestational diabetes mellitus, on insulin, large for gestational age baby, no symptoms of snoring or obstructive sleep apnoea, normal bicarbonate, no anticipated airway issues, Mallampati class 1 with a full range of neck movements.

Discussion

Amongst anaesthetists in the north east region of England, the first choice technique for elective CS in a high BMI parturient is predominantly equally divided between SSS and CSE. Although we did not specifically ask whether spinal dose would be reduced, no anaesthetist suggested that they would do this. The majority of anaesthetists would ask for assistance at the beginning of the case. The backup plan weighs towards GA. Information from spinal ultrasound is considered beneficial in the majority of anaesthetists. Therefore, possession of this skill would be an asset when managing this subgroup of parturients. The preferred location following RA is the postnatal ward. The preferred location following GA is labour ward HDU.

Questions

What is your grade?

Consultant/SAS/Specialist Trainee/CT3-4

How many years have you been in post?

0-3 4-7 8-11 12-15 16+

What is your first-line anaesthetic plan (with reasons)?

SSS? CSE? Epidural? GA?

Would you request assistance?

At start? If failure of technique?

What is your backup plan?

SSS? CSE? Epidural? GA?

What additional equipment would you request (if any)?

Free text responses

Would you ultrasound the spine if you (or an assistant) were able to?

Y/ N

If Y, what information would you be looking for?

Free text responses

Where would you send the patient post-operatively (assuming no complications)?

General HDU/Labour ward HDU/Postnatal ward
- After regional anaesthesia
- After general anaesthesia

Any other comments?

Free text responses

Results

	Consultant (n=46)	SAS (n=11)	Specialty Trainee (n=29)	CT3-4 (n=9)	All grades (n=95)
First-line anaesthetic plan					
SSS	46%	27%	55%	44%	46%
CSE	46%	73%	41%	44%	48%
Epidural	4%	0%	0%	0%	2%
GA	0%	0%	0%	0%	0%
No answer	4%	0%	4%	12%	4%
Would you request assistance?					
At start	59%	100%	72%	89%	71%
If failure of technique	30%	0%	21%	0%	21%
No answer	11%	0%	7%	11%	8%
Backup plan					
SSS	17%	27%	14%	0%	16%
CSE	7%	9%	21%	0%	10%
Epidural	15%	9%	10%	11%	13%
GA	57%	55%	52%	78%	57%
No answer	4%	0%	3%	11%	4%
Would you use ultrasound if you (or an assistant) were able to?					
Yes	63%	91%	76%	33%	68%
No	33%	9%	21%	56%	28%
No answer	4%	0%	3%	11%	4%
Postoperative care following regional anaesthesia					
General HDU	7%	9%	0%	0%	4%
Labour ward HDU	41%	36%	35%	11%	36%
Post natal ward	48%	55%	62%	78%	56%
No answer	4%	0%	3%	11%	4%
Postoperative care following general anaesthesia					
General HDU	15%	27%	0%	45%	15%
Labour ward HDU	46%	55%	86%	33%	58%
Post natal ward	35%	18%	10%	11%	23%
No answer	4%	0%	4%	11%	4%

Of all the 95 responses received, the most common items of additional equipment requested were: ramping pillow (57), videolaryngoscope (51), long needles (35), ultrasound (34) and high flow nasal oxygen (21).

Of all those respondents that would use ultrasound, information sought was: depth of the interspace (73%), the midline (64%) and the interspace itself (53%).

References

- Patel SD, Habib AS. Anaesthesia for the parturient with obesity. BJA Educ. 2021; 21:180-6.
- Lamon AM, Einhorn LM, Cooter M, Habib AS. The impact of body mass index on the risk of high spinal block in parturients undergoing cesarean delivery: a retrospective cohort study. J Anesth. 2017; 31:552–8.