Emergency caesarean section under subarachnoid block in a severely underweight parturient

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01 Introduction

Low maternal body mass index (BMI) has been shown to increase the risk of preterm birth and low birth weight [1]. This case report presents the perioperative anaesthetic management of a parturient who weighed 33.6 kg at the time of delivery.

03 Discussion

The challenges faced in this case related to the performance of central neuroaxial blockade in a grossly underweight parturient in a unit not accustomed to paediatric spinal anaesthesia. Conventional doses would likely have been too large for her, leading to complications, thus the consideration of paediatric dosing in the management of this patient [2].

Drug and Concentration	Dose (mg/kg)
(child < 5 kg) Hyperisobaric bupivacaine 0.5%	1.0
(child 5–15 kg) Hyperisobaric bupivacaine 0.5%	0.4
(child >15 kg) Hyperisobaric bupivacaine 0.5%	0.3

Fig 1. Adapted from ASRA/ESRA recommendations for a local anaesthetic dose for spinal anaesthesia in children

02 Case Report

A 39-year-old woman, Gravida 2, Para 0+1, with a singleton pregnancy was admitted to our maternity unit at 27+5 weeks gestation with uterine tightening. Her past medical history included osteoporosis secondary to anorexia nervosa, anxiety and emetophobia. She had recently been discharged from a tertiary maternity unit where she had received magnesium sulphate and steroids after suffering preterm premature rupture of membranes.

She was assessed by a consultant obstetric anaesthetist, who documented her epidural space depth at the L4/5 level to be 35 mm from the skin, after scanning her lumbar spine with ultrasound. On the third day of admission, she required a category three caesarean section due to increasing inflammatory markers and abnormal cardiotocography.

At this time, the maternal weight was recorded at 33.6 kg (BMI 14.3 kg/m2). A subarachnoid block was performed by the duty consultant anaesthetist, administering 1.9 mL of 0.5% heavy bupivacaine and 300 mcg diamorphine via a 27-gauge NRFit Sprotte needle at the L4/5 level. This achieved an adequate degree of sensory blockade for surgery.

A live female infant was born with APGAR scores of seven, nine and ten at one, five and ten minutes; despite the uterus containing thick pus-like fluid which required lavage with saline before closure.

The patient received standard intraoperative care consisting of uterotonics, antibiotics and a rectus sheath block administered by the surgeon. Intraoperatively she remained normotensive and pain-free, however she was given 1 mg of midazolam as well as ondansetron and cyclizine. This helped manage her extreme emetophobia, which manifested as repeated requests for "ondansetron!".

Blood loss was estimated at 750 mL and the patient was transfused with two units of packed red cells due to her diminutive size and low starting haemoglobin level.

References

1. Han Z, Mulla S, Beyene J, et al. Maternal underweight and the risk of preterm and low birth weight: a systematic review and meta-analysis. International Journal of Epidemiology. 2010: 40(1), 65-101
2. Merella F, Canchi-Murali N, Mosseti V. General principles of regional anaesthesia in children. British Journal of Anaesthesia Education. 2019: 19(10), 342-348