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Regional anaesthesia and analgesia for the super morbidly obese parturient

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Introduction

Obesity in pregnancy is associated with an increase in obstetric, fetal, medical and anaesthetic complications[1]. In recent years, the incidence of super morbidly obese (BMI>50) women on our labour ward has increased and we examined the anaesthetic techniques used in this cohort.

Methods

- Following Caldicot guardian approval a retrospective review of electronic patient records (Cerner and K2 Guardian System) between 2010 and 2018 was used to identify all super morbidly obese women who delivered within the maternity unit. Mode of delivery, anaesthetic techniques for anaesthesia and analgesia, and their complications were assessed in detail.

Results

- Eighty-three super morbidly obese patients were identified. Their mean BMI was 54 (range 50 -71).
- The mean dose of heavy bupivacaine was 12.3mg (2.46mls) and 300mcg of diamorphine was used in all spinals.
- All spinals and all but one CSE had a 'good' block reported for caesarean. The one patient reported their block as 'adequate'. No additional supplementation was given to any patient.

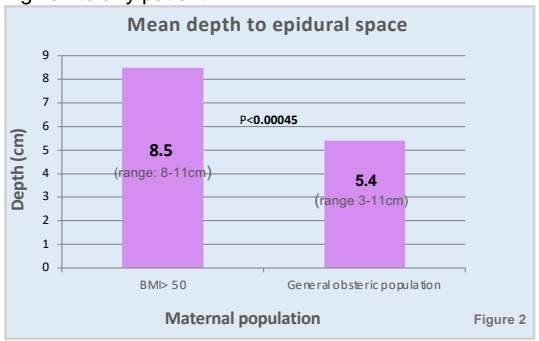


Figure 2

	No. of women	Percentage (%)
Delivered by caesarean • **Elective** • **Emergency**	55 23 22	67.5 (50) (50)
Vaginal delivery	28	32.5
Regional anaesthesia/analgesia performed	64	77
Epidural sited in labour	23	46
Epidural 'topped up' for caesarean	11	48
Spinal sited for caesarean • **Ultrasound assisted**	29 3	53 11
Combined spinal epidural sited for caesarean • **Ultrasound assisted** • **Epidural utilised**	12 4 0	22 33
Failed regional converted to GA	1	1
Adverse events	0	0

Figure 1: Table to show the method of delivery, the regional techniques used, and complications in the BMI >50 cohort

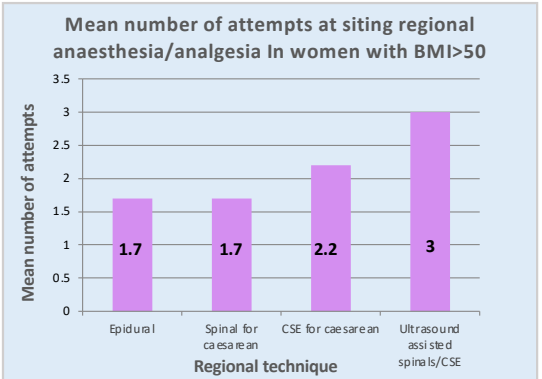


Figure 3: Epidurals=1.7 (Median 2.2 range 1-5) spinal for cesarean = 1.7 (Range 1-5), CSE for cesarean = 2.3 (Median 2.5, Range1-4) ultrasound assisted spinal and CSE 3 (Median 3 , range1-4.

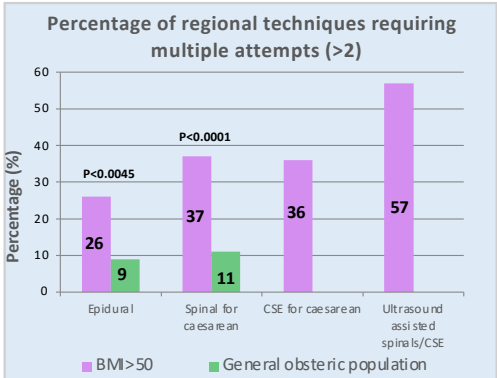


Figure 4

Discussion

- The mean depth to epidural space of 8.5 cm raises the question of whether an 11cm Tuohy needle should be the initial needle of choice as standard, in order to reduce the number of attempts.
- Some anaesthetists reduce the dose of intrathecal mix in the morbidly obese parturient[2]. Our data shows that a mean dose of 12.3 mg 0.5% heavy bupivacaine had 'good' effect and no high spinal events.
- Spinal anaesthesia was more likely to require multiple attempts than epidural analgesia, which further strengthens the recommendation for an early labour epidural in this cohort.
- Research has demonstrated that time from start of anaesthesia to sufficient block was significantly longer with CSE compared to spinal[3]. Given that none of our patients during caesarean required or used the epidural component of the CSE, perhaps more consideration should be given to spinals which are quicker, cheaper, and associated with fewer complications[4].
- Ultrasound was under-utilised in the cohort, only a select few anaesthetists use it and often as a rescue technique, which may explain why there were multiple attempts in this group. Further training and education to increase use may be of benefit.

References

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2. Lamon AM, Habib AS. Managing anaesthesia for cesarean section in obese parturients: current perspectives. Local Reg Anesth, 2016; 9:45-57.
3. Klimek, M., Rossaint, R., an de Velde, M. et al. Combined spinal-epidural vs. spinal anaesthesia for caesarean section: meta-analysis and trial-sequential analysis. Anaesthesia, 2018; 73: 875-888.
4. NAP3 report Major complications of central neuraxial blocks in the UK. 2009; http://www.nationalauditprojects.org.uk/NAP3_home