Labor Epidural Anesthesia Neuraxial Outcomes in Super Morbidly Obese Patients as compared to General Population

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Introduction

When placed successfully, epidural anesthesia does not carry significant risk in cesarean sections and immediate newborn health (1). While neuraxial anesthesia is often difficult to place in obese patients, it allows the patient to avoid general anesthesia which reduces airway manipulation, curtails the risk of aspiration, and decreases volatile anesthetic exposure to both the fetus and the parturient. (2)

The present study aims to present and analyze the neuraxial outcomes in the super obese patients who received labor epidural anesthesia.

Materials & Methods (Operative Course)

We conducted a retrospective review of patients who presented with BMI≥50.0 upon admission for delivery at a single hospital institution. We collected data from the electronic medical records at to identify patients who were admitted for delivery of a viable fetus between 2015-2021. We reviewed 342 patient encounters, of which 108 received epidural analgesia (32% of the observed population). Data collected included the parturients' demographic information and their anesthesia information for each L&D admission.

Results

Table 1 details the demographics of the patient population and their anesthetic outcomes. Of the 108 patients, maternal age averaged at 28.33 with a SD of 5.97 and maternal BMI averaged at 55.47 with an SD of 5.92. Of the 108 epidurals replaced, 0.90% (1/108) required faculty intervention, 11.65% (12/108) required replacement, 3,70% (4/108) resulted in failure, 2.78% (3/108) were suspected of having dural puncture and 3.70% (4/82) reported post dural punctual headaches. Overall, 24.07% (26/108) of epidurals had complications.

Table 1. Super Obese Parturients Who Received Epidural Anesthesia Outcomes

Subjects Included (n)		108
Maternal Age (years)	Mean	28.33
	SD	5.97
	Minimum	17
	Maximum	42
Maternal BMI (kg/m2)	Mean	55.47
	SD	5.92
	Minimum	50.1
	Maximum	92.23
Neuraxial Outcomes (n) (of 81 charts)	US Guidance Used	2
	Required Faculty Intervention	1
	Neuraxial Failure Requiring Anesthesia Mode Change (ie to Spinal, CSE, or GETA)	4
	Required Epidural Replacement	12
	Suspected Dural Puncture	3
	Post Dural Puncture Headache	4

Discussion

Although some of the epidurals placed in our obese population resulted in complications, most were placed successfully without complications. Reducing the number of epidural complications can improve a patient's labor experience by reducing the number of headaches experienced, minimize the use of extra equipment that has to be used in neuraxial replacement, and prevent use of general anesthesia and volatile anesthetics in C-sections.

Discussion (cont.)

Moving forward, we would need to obtain a control group that is truly representative of the general population to see if the number of complicated cases that we obtained is statistically significant in comparison. If our sample showed statistical significance, the next step would involve investigation of the effect of additional interventions, such as ultrasound and other assist devices, on the reduction of epidural complications.

References

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