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ANESTHETIC MANAGEMENT OF A MORBIDLY OBESE PARTURIENT UNDERGOING CESAREAN SECTION

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ABSTRACT

Morbid obesity in pregnancy is a great challenge to medical practice especially when the patient requires caesarean section. We report a case of 38 years old woman with 40 weeks of gestation and two days post dated, 175 kg weight, 162 cm height for planned caesarean section under spinal anaesthesia, which was technically difficult. Duration of surgery was 3 hours. Morbid obesity is a challenge to both obstetric and anaesthetic practice, multidisciplinary approach is necessary in reducing both maternal morbidity and mortality.

Key words: Morbid obesity, Caesarean section, Spinal anaesthesia.

INTRODUCTION

Obesity has reached an epidemic proportion globally with a comparable rise in prevalence among women in the reproductive age [1]. Obese parturient are at increased risk of having either concurrent medical problems or superimposed antenatal diseases including pre-eclampsia and gestational diabetes [2]. Complications during labor such as fetal distress, failure to progress, abnormal presentation necessitating instrumental delivery and cesarean section are more common [3]. In addition there is an increased incidence of deep vein thrombosis, hypoxemia, and wound infections. Successful management of the morbidly obese parturient requires a multidisciplinary team approach initiated early in pregnancy [1].

CASE REPORT

A 27-year old woman, Gravida 2 Para 0, at 40 weeks of gestation and two days post dated. Her body weight was 175 kg and height was 162 cm (body mass index = 67 kg/m²). She had a history of snoring. She was known case of gestational diabetes since 4 months of

amenorrhea and for that she was on Inj. Human insulin 4U before breakfast and 2U before dinner subcutaneously. There was history of previous LSCS before 3 years under spinal anesthesia. Baby was expired. The patient's airway appeared unremarkable (Mallampati II, thyromental distance >6 cm) and venous access looked obtainable. Typical anatomical landmarks of the spine were not palpable. Her echocardiogram showed normal cardiac function with a left ventricular ejection fraction of 65%. Other investigations were within normal limit. (Hb - 10mg%, Blood Sugar 123 mg%, HbA1c 7.2) Following multidisciplinary discussions involving the obstetrician, anesthesiologist and neonatologist, the plan was made for elective LSCS under single shot spinal anesthesia. Venous access was achieved with 20G IV cannula. Preloading was done with 500 ml of RL and 500 ml of NS. ECG, NIBP, SPO₂, was applied and vitals were noted (Pulse 80/min, Blood Pressure 130/90 mm of Hg, SpO₂ 98%). Urine output was also noted. Premedication in the form of Inj Ranitidine 50 mg IV and Inj. ondansetron 6mg IV was given.

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Spinal anaesthesia was given in L 2-3 space after local infiltration of inj. Lignocaine 2% 2ml with all antiseptic and aseptic precaution in sitting position. Lumbar puncture was done with 23G spinal needle. Sub arachnoid space located at 8cm distance from skin after four attempts. Inj Bupivacaine heavy 0.5% 2ml injected into subarachnoid space. Block was achieved up to T6 dermatome within 4 min. Oxygen was given via ventimask. Induction delivery time was 35 min. The patient's oxygen saturation was maintained 98-99% throughout the procedure. Delivery of baby was done by forceps.

After delivery of baby, inj. Carboprost 0.5 ml IM was given and inj. Oxytocin (40 U) infusion was started. Total duration of surgery was 3 hours. Inj. Diclofenac sodium was given as post operative analgesia. She was observed for 48 hours in post operative ward. She was discharged from the hospital after 7 days without any complications.

DISCUSSION

Obesity now characterised as a pandemic by WHO not only increases maternal risk but also foetal and neonatal risks [4]. Morbid obesity accentuates the physiological changes associated with pregnancy [1].

Higher chances of failure to progress, prolonged second stage of labour and failed induction of labour [5]. They require more instrumental deliveries and caesarean section thus requiring more anaesthetic interventions [1]. They are also having co existing medical problems, possibility of obstructive sleep apnoea, hypertension, IHD, gastroesophageal reflux. Patients should also assessed for PIH, gestational DM. The supine hypotensive syndrome can be greatly exaggerated [5].

Also presents practical problems like difficult to find appropriate size BP cuff, difficult venous access, regional anaesthesia is more technically challenging. Special operating theatre beds are required and adequate personnel's are also require for shifting of patients [1].

The physiological and anatomical changes caused by both obesity and pregnancy increase the potential of an unanticipated difficult airway, impossible mask ventilation and rapid desaturation during the apnoeic phase. Difficult or failed intubation both of which are associated with higher incidence of aspiration. Incidence of failed intubation is 8 times higher. Majority of death occurred under GA because of airway management problems [5].

We can avoid difficult airway in regional anaesthesia technique. The challenges in regional anaesthesia are technical problems include appropriate positioning of the patient, identification of the midline

and spinal space because of obscured anatomical landmarks. Strapping excess fat away from the midline might be necessary. Multiple attempts are common. Sitting position is preferable [6].

Single shot spinal anaesthesia remains the most common type of anaesthesia employed for delivery of the foetus by CS. The advantage of using subarachnoid block includes a dense reliable block of rapid onset.

Therefore our patient has received spinal anaesthesia increased length from skin to subarachnoid space. A recent study in pregnant patients has shown a positive correlation between BMI and the distance to skin to the lumbar puncture.

In obese parturient Conventional needle may be too short for spinal anaesthesia requiring varied needle lengths.

Obese pregnant patient having spinal anaesthesia with low doses of hyperbaric bupivacaine, experienced higher sensory blocks than non obese patients because Increase cephalad spread of local anaesthetics .

Hodgkinson & Hussain demonstrated that height of block of local anaesthetic agent is proportional to BMI and weight But not height [5]. Surgery may be technically challenging may take longer time than expected. Proposed benefit of a transverse incision are more secure closure, less fat dissection, pain facilitating, earlier ambulation and in the post operative period.

Higher risk of having prolonged incision delivery time. Also increased risk of wound infection, endometritis and dehiscence, post partum hemorrhage.

Maternal obesity associated with large for gestational age infants, increased risk of macrosomic foetus, shoulder dystocia , infant birth defects, still birth, also technically difficulty in foetal monitoring [5].

Post op. close monitoring. Early mobilization, thromboprophylaxis, aggressive chest physiotherapy and adequate pain control are corner stones to successful post op obstetric care [1]. In the recovery room critical respiratory events (desaturation, hypoventilation, and airway obstruction occur twice as commonly in the obese [7].

CONCLUSION

As the anaesthetic and surgical care of the morbidly obese patient is challenging early and meticulous multidisciplinary planning involving senior anaesthesiologist, surgeons, nurses, and the provision of special equipment is mandatory.

Single shot spinal anaesthesia is safe and effective technique for obese parturient.

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