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Morbid Obesity in Pregnancy

Anjani Dixit[1*], Anju Singh[1] and Monica Vohra Pandit[1]

[1]Department of Obstetrics and Gynaecology, Dr. Hedgewar Arogya Sansthan, New Delhi, India.

Authors' contributions

This work was carried out in collaboration among all authors. Author AD designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Author AS managed the analyses of the study. Author MVP managed the literature searches. All authors read and approved the final manuscript.

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Case Study

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ABSTRACT

Aim: Changing lifestyle and late age of conception has led to rising incidence of obesity in pregnancy. We present a case report of perioperative management of a morbidly obese pregnant woman and the problems we faced during its management.

Case Presentation: A 35 years old, morbidly obese, unbooked, gravida 3 para 2 living 2, with post-dated pregnancy presented in labour. On investigation it was found that she was hypothyroid, diabetic, hypoproteinemic and moderately anaemic. She underwent Caesarean section due to fetal distress. Operation was difficult and an additional assistant was recruited at the operation table to retract the panniculus of anterior abdominal wall which extended to approximately 10 cm from mons veneris. She had one episode of sudden hypotension on second post-operative day which was managed conservatively. On day nine she developed a 5 x 4 cm sloughed area in the pannus near stitch-line. Wound debridement and healing occurred with secondary intention.

Discussion: Morbid obesity presents several challenges but our case highlights the additional problems due to unbooked and uninvestigated state with post-dated term pregnancy in labour. Here, Obstetrician is the first point of contact and has to deal with all the associated problems that are present and also has to envisage the complications that can ensue. In our case we had to deal with post-dated pregnancy, macrosomia, diabetes, anemia, hypoproteinemia on top of obesity.

Conclusion: Our case highlights the importance creating awareness in people for prenatal, routine antenatal visits, and importance of having institutional delivery. It also highlights unprecedented problems that can be faced by Obstetricians in dealing with such cases.

**Corresponding author: E-mail: doc.anjani@gmail.com;*

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1. INTRODUCTION

Changing lifestyle and late age of conception has led to a rising incidence of obesity in pregnancy. This brings its own set of unique problems. By definition overweight is defined as body mass index (BMI) between 25-29.9 kg/sq m and obese is with BMI greater than or equal to 30 kg/ sq m^2 [1].

Based on an observational study conducted by Rasmussen and Yaktine in 2009 [2], it is recommended that women with normal BMI (18.5-24.9) should gain 11.5-16 kg during pregnancy. Overweight women (BMI 25-29.9) should gain 7-11.5 kg and obese women (BMI greater than 30) should gain only 5-9 kg. Even a relatively small gain of 1-2 BMI units (kg/sq m) between pregnancies may increase the risk of gestational hypertension and gestational diabetes, including women who are not overweight or obese [3,4].

Here we describe case of morbid obesity with pregnancy and problems we faced while managing it.

2. CASE PRESENTATION

A 35 years old, morbidly obese, gravida 3 para 2 living 2, unbooked patient, with post-dated pregnancy (POG of 41 weeks) presented to our casualty with labour pains. She was resident of Delhi but had only 2 antenatal visits during 2nd trimester in her entire pregnancy.Her reports done in second trimester (at 17+6 weeks POG) showed moderate anaemia (Hb 8.2 gm/dl) but she had not taken iron, calcium or other medication. She only had complete blood count, blood group, viral markers and urine routine reports. She had a normal anomaly scan for the fetus. She did not get her thyroid profile, oral glucose tolerance test (OGTT) and other related tests. Her recent scan done on same day showed fetus in utero with cephalic presentation with estimated fetal weight of 4 kg and amniotic fluid index 13.7 cm. According to the patient, she had two previous full term vaginal deliveries at home 4 years and 2 years earlier with no complications. No records were available of earlier deliveries. According to the patient, the two previous deliveries were uneventful and then also she did not take any medication during antenatal and postnatal period.

On examination, her weight was 120 kg and height 1.6 meters making a BMI 46.87 kg/m^2. Her vitals were stable. On per abdomen examination, uterus was palpated with difficulty because of obesity, was term size and had cephalic presentation with mild contractions. Fetal heart rate tracings was pathological/non-reassuring on non-stress test. Perineal examination was difficult which showed meconium stained liquor. On per vaginal examination, internal os was 3 cm, modified Bishop Score of 6 and high presenting part (cord prolapse excluded).

On investigation her hemoglobin was 7.5 gm/dl, TSH- 6.8 mIU/L, her random blood sugar was 222 gm/dl, HbA1c was 8.9%, her serum electrolytes levels and renal function tests were normal. In her liver function test report, her albumin levels were low, i.e.1.8 gm/dl but rest of the parameters were in normal limit. She was taken up for emergency caesarean section in view of meconium stained liquor with pathological fetal heart tracings. She underwent caesarean section under spinal anaesthesia. An additional assistant was recruited at the operation table to retract the panniculus of anterior abdominal wall which extended to approximately 10 cm from mons veneris. Suprapubic transverse skin incision was given. Skin incision to baby delivery time was 25 mins. A live female baby of birth weight 4 kg was delivered with difficulty with APGAR score of 6,7,9 at 0,1 and 5 minutes. Abdomen was closed in layers. Fat was closed in double layers. Total operating time was 1 hour and 10 minutes with average blood loss of around 500 ml. Intraoperative and immediate postoperative periods were uneventful.

On post-operative day two, she had sudden hypotension. At that time, her pulse rate was 98/min, blood pressure 90/50 mm Hg, respiratory rate of 18/min and oxygen saturation of 99% on room air. Uterus was well retracted and on local examination blood loss was minimal. Per speculum and per vaginal examination was also normal. She was kept on intensive monitoring and received two unit packed cell. She was started on levothyroxine replacement, oral hypoglycaemic agents and was discharged on postoperative day five in stable condition. She was advised oral antibiotics, iron & calcium supplementation, medical nutritional therapy along with high protein diet and exercise.

On postoperative day 9, she presented to emergency with complain of soakage of dressing. On removal of dressing, a 5 x 4 cm sloughed area was seen in the pannus, approximately 1.5 cm above stitch line. She was admitted and wound debridement was done. Extensive wound care was done for 8 weeks till healing occurred with secondary intention.

3. DISCUSSION

It is well known that morbid obesity presents with several challenges to the medical practitioner but our case highlights the additional problems due to unbooked uninvestigated state with post-dated term pregnancy in labour. Here obstetrician is the first point of contact and has to deal with all the associated problems that are present and also has to envisage the complications that can ensue.

Our case report presents some important aspects in management of morbidly obese pregnant women.

First aspect is challenges faced during caesarean section of such patients. Obesity itself acts a risk factor for increased incidence of caesarean deliveries and wound infection [5,6], [7,8]. Meconium stained liquor with fetal distress was cause of caesarean delivery in our case. We opened via Pfannenstiel skin incision. Though transverse incision is difficult in obese patient due to thick panninculus fold but it should be considered [9]. It has also been described in literature that vertical abdominal incision has a higher rate of wound complications than transverse incision and transverse incision should be encouraged [10]. However, there is lack of high quality evidence to support the use of one surgical approach over the other [7,8]. Skin to baby-delivery time as well as total operative time was more than expected. Extra assistance was needed to retract the pannus and facilitate ease during procedure. Uterus was opened via transverse incision over lower uterine segment. There was some difficulty in delivery of the baby due to deviated uterine axis and good size baby. We learned that difficulty during delivery of baby should be anticipated beforehand. This difficultly can be overcome by correcting uterine axis, keeping forceps ready and presence of a senior obstetrician.

The sloughed area is most probably due to pressure necrosis by the digital pressure of the assistant during retraction of the panniculus. Additional exacerbating factors were hypoprotenemia, anemia and diabetes. Viegas CM et al. reported a similar case in which they proposed a simple device made of Doyen`s retractor and hooks for panniculus retraction. They observed this device is helpful in preventing ischemic damage [11]. However Royal College of Obstetrics and Gynaecology (RCOG) recommends avoiding barrier retractors, negative pressure dressing therapy or subcutaneous drains to reduce risk of wound infection [7].

4. CONCLUSION

Our patient lived in a first tier city like Delhi but had two home deliveries and in her third delivery she presented at the last moment. It's an alarm bell for all of us that there is still lack of understanding on the importance of routine antenatal visits and importance of having institutional delivery. A morbidly obese woman should have prenatal visits where important aspects like weight control, thromboprophylaxis, gestational diabetes, pre-eclampsia, hypothyroidism, congenital anomalies, macrosomia, stillbirth, neonatal death, need for contraception etc. can be addressed. We also have to find a better way to deal with panniculus while operating on such morbidly obese cases to as to avoid wound sloughing in post-operative period. We call upon our fellow obstetricians to report their successes in dealing with cases of wound necrosis in caesarean section of morbidly obese patients.

CONSENT

As per international standard or university standard, patient's consent has been collected and preserved by the authors.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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