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The Biggest Baby Ever Delivered In Our Centre – A Case Report.

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ABSTRACT

Fetal macrosomia is a major contributor to obstetric morbidity. It is an important cause of maternal and perinatal morbidities. Fetal macrosomia is not always predictable either clinically or through ultrasound. It calls for close attention during labour and delivery .

We report the case of the 6.8kg male baby which was delivered in our centre through an emergency caesarean section at the gestational age of 42 weeks.

She was a 22 year old primigravida who booked antenatal care at the gestational age of 17 weeks. At booking her booking parameters were, booking weight of 69kg, height of 160cm, body mass index was 27kg/m^2, Blood pressure was 110/70mmHg, Urine analysis was normal and random blood sugar was 97mg/dl.

Pregnancy was uneventful until 33 weeks gestation when she had glycosuria (+1) and she was requested to do glucose challenge test, however she absconded and presented at the gestational age of 42 weeks through the emergency obstetric ward of our Centre with the history of liquor drainage of seven hours duration and ultrasound report with fetal weight estimation of 4.4kg and a repeat ultrasound scan at presentation, showed fetal weight estimation of 5kg.

She had an emergency caesarean section and the outcome was a live male neonate with good Apgar score and birth weight of 6.8kg. The baby was admitted in the special care baby Unit for 24 hours and was discharged to the mother at the lying in-ward. Mother was discharged after five days. Both mother and baby are still doing well.

Fetal macrosomia is a serious medical concern, hence the need to report the biggest baby ever delivered in our Centre.

INTRODUCTION:

Fetal macrosomia is defined as the birth weight greater than 4000g(4kg) or fetal birth weight above 90th percentile for the gestational age. (3). It is a major contributor to obstetric morbidity and it is a major cause of maternal and perinatal morbidities. (1,4)

The risk factors for fetal macrosomia are not all known, however obesity, over weight, Diabetes mellitus, gestational diabetics, Excessive weight gain in pregnancy, multiparity, history of previous fetal macrosomia and male sex have all been reported in various literatures as risk factor for fetal macrosomia. (5)

The prevalence of fetal macrosomia varies and it ranges between 8.1% to 9%, however in Sub-Sahara African, prevalence as low as 1.9% has been reported in Ethiopia in some literature and prevalence as high as 14.6% has been reported in Nigeria.(5) The incidence of fetal macrosomia in multiparous women was 7.6%, but the recurrent rate of fetal macrosomia in multiparous women was 27.2%. (4, 5) A longer gestational age in subsequent pregnancy was reported as an independent risk factor for fetal macrosomia. (6)

Pregnant women are screened for gestational diabetic in some centres at the gestational age of 24 – 28 weeks. (4,5) Some centres also screen all parturient with body weight above 90kg. The screening for gestational diabeticsis usually done with a 75g, 1hour glucose challenge test and the parturient who failed in this test are recommended to be on a standard euglycaemic diet and they are recommended to have glucose monitoring at home for fasting and postprandial glucose level. (6,7) It is important to note that pregnant women who do not meet up with specific diagnosis for gestational diabetics mellitus may still have glucose mediated fetal macrosomia. (8) Excessive pregnancy weight gain is also reported as an independent risk factor for fetal macrosomia in women with intermediate gestational blood glucose. (8)

Fetal macrosomia is associated with both maternal and fetal complications.(5,6) The maternal complications include dysfunctional uterine contraction, prolonged labour, uterine rupture, increase risk for caesarian Section, spontaneous symphysiotomy, Obstetric neuropathy and lower genital tract laceration. Fetal and neonatal complications include shoulder dystocia, Erb'sPalsy, fracture of the clavicle or humerus, neonatal Asphyxia, hypocalcemia, hypoglycaemia, hypomagneseamia and hyperbilirubinaemia. (8,9)

Perinatal diagnosis of fetal macrosomia can be made either clinically or through ultrasound, various clinical method of fetal weight estimation have been reported.(9) The clinical methods of fetal weight estimation include, the Johnson's, Dare's, Dawn's, Onan's, etc.(9) The clinical methods are simple, safe, cheap and readily available; however they depend on the skill of the clinician.(9) These clinical methods of fetal weight estimation arealso subjected to various degrees of Intra-observer and inter-observer errors. (10)

Both Clinical and ultrasonographic method of fetal weight estimation are not always predictable.(11)The heaviest baby recorded in the Guinness book of records weighed10.2kg and this baby was born in Italy in 1955. It was also recorded that the second biggest baby weighted 7.3kg and the baby was delivered in Brazil. (11)

Fetal macrosomia is a serious medical concern and it is said to have a great burden to the health facilities. (12) The knowledge of risk factors for fetal macrosomia in our environment may reduce the prevalence during antenatal care and consequently reduce the complications associated with fetal macrosomia.

Health education and preconceptional care should be conducted for multiparous women with the history of fetal macrosomia, aimed to promote maintenance of optional pre-pregnancy body mass index thereby preventing excessive weight gain in pregnancy and by so doing, reducing the prevalence of fetal macrosomia in our environment.

FIGURE 1: Macrosomic Baby

CASE REPORT

She is a 22 year booked primgravida Nigeria woman who booked antenatal care in our institution at the gestational age of 17 weeks; pregnancy was spontaneously conceived and confirmed with Urine pregnancy test after 8 weeks of amenorrhoea.Prior to booking for antenatal care, pregnancy was uneventful. At booking, the booking parameters were – pulse rate of 80beats/minute, Blood pressure was 110/80mmtts, the body weight was 69kg, height of 160cm, body mass index was 27kg/m2, urine analysis was normal, random blood sugar was 97mg/dl, Blood group is O Rhesus positive and the Genotype is AS.She had intermittent preventive therapy for

malaria at 24 weeks and 28 weeks respectively with sulphadoxine – pyamethamine; she also received tetanus immunization accordingly.

At a gestational age of 26 weeks, she had an Obstetrics ultrasound scan who showed a single active fetus in variable lie, Estimated gestational age of 26 weeks and expected date of delivery was 12/12/2022. She had glycosuria (+1) at the gestational age of 33 weeks and she was requested to do Glucose challenge test, however, she absconded and only for her to present at the Obstetric emergency ward at the gestational age of 42 weeks with the history of liquor drainage of seven hours duration and ultrasound report with fetal weight estimation of 4.4kg and a repeat ultrasound Scan at presentation showed a fetal weight estimation of 5kg.

She was booked for emergency caesarean Section, two Units of whole blood were provided, the anesthetist and the neonatologist were informed.

The outcome of the surgery was a live male neonate with good Apgar score, the birth weight was 6.8kg, Birth length was 57cm, head circumference was 36cm and umbilical cord length was 100cm. The baby was admitted at the special baby Unit for 24 hours and thereafter discharges to the mother at the lying in-ward to commence breast feeding. The patient was discharged after five days. Both mother and baby are still doing well.

DISCUSSION

Fetal macrosomia is defined as the birth weight greater than 4000g (4kg) or birth weight of 90thpercentile for the gestational age.(1)

The perinatal diagnosis of fetal macrosomia could be by clinical estimation or through ultrasound. The clinical methods of fetal weight estimation include Johnson's method, Dawn's method, Dare's method, Onan's method, etc.(1,2) These clinical methods of fetal weight estimation use the external measurement of the mother.(4,5) The advantages of clinical method of fetal weight estimate are that they are simple, safe, cheap, non invasive, convenient and they can be applied on poor resource settings where ultrasound is not available.(1,2)

The demerits of clinical methods of fetal weight estimation are that they depend on the clinical skill of the clinician, results are notreproducible and intra-observer and inter-observer errors are common.(2,3) Consensus has not been reached amongst various methods of clinical methods of estimating fetal weight and this could have helped to improve on the reproducibility and reliability of the results.(4)

Both clinical and ultrasound method of fetal weight estimation are not predictable, in our index patient, ultrasound estimation was 4.4kg, whereas the actual weight at birth was 6.8kg.Some studies showed that ultrasound estimation of the fetal weight is a better predictor of the actual birth weight. While other studies showed that the reliability of ultrasound estimation of fetal weight to detect large babies is poor, as it is observed on our index patient, the study went further to state that ultrasound measurement has the tendency to over-estimate the weight of small babies while underestimating the weight of large babies of diabetics mellitus, (13) hence such objective measurement of suspected fetal macrosomia should be handled with caution as this may lead to unnecessary obstetrics interventions. (12,13) Therefore it is important to correlate ultrasound estimation of fetal weight with the clinical estimation.(13) It has also been reported in some literatures that some clinical methods of fetal weight estimation have been shown to be as accurate as the ultrasonographic estimation especially in poor resource setting where ultrasound is not available.(14)

The risk factors for fetal macrosomia include obesity, over weight, multiparity, history of previous macrosomia, diabetics mellitus, gestational diabetics, male sex and excessive weight gain in pregnancy.(14)

However, our index patient is a primigravida and she is over-weight evidenced by the body mass index of 27kg/m^2, the patient was not confirmed to have gestational diabetics, she had no family history of diabetic mellitus. It is possible that the macrosomia may be due to post term as the baby was delivered at the gestational age of 42 weeks. Since she had glycosuria in index pregnancy, it is also possible that the macrosomia may be due to glucose mediated. The sex of the baby delivered is male, is it possible that male sex may have correlation with the weight of the baby, however some studies have shown that there is a correlation between the fetal weight and sex.(15) The umbilical cord length of the baby was 100cm and the sex of the baby was male. This case report may be supporting the studies which stated the fetal umbilical cord length has correlation with birth weight and sex of a baby.(16) The complications associated with fetal macrosomia could be maternal or fetal.(1,2) The maternal complications include dysfunctional uterine extraction, prolonged labour, uterine rupture, increase risk for caesarean section, spontaneous symphysiotomy, lower genital tract laceration and Obstetric neuropathy.(8,9) Most of these complications were averted by booking the patient for emergency caesarean section. This goes to support that fetal macrosomia is associated with high incidence of caesarean section (15-18).

The fetal complications include shoulder dystocia, birth trauma and electrolyte Imbalance especially hypoglycemia.(15,16) The baby delivered by our index patient had hypoglycaemis shortly after delivery and this was corrected at the special case baby Unit.

The prevalence of fetal macrosomia varies in sub-Sahara Africa and in Nigeria, the prevalence is as high as 14.6%. ((5) This is a serious medical concern and the increasing incidence of fetal macrosomiaim poses a great burden to health facilities.(14-16) Therefore the knowledge of risk factors for fetal macrosomia and conducting preconceptional care for

the women at risk will reduce the prevalence of fetal macrosomia and other attendant complications.(5-7)

CONCLUSION

Fetal macrosomia is an important cause of maternal and perinatal morbidities. It imposes a great burden to health facilities. Fetal weight estimation perinatally cannot be predicted accurately with either by ultrasound or clinical method, though ultrasound estimation of fetal weight is a better predictor of fetal weight but correlating ultrasound estimation with clinical estimation could prevent unnecessary Obstetrics intervention. Health workers in poor resource setting should be trained on the clinical methods of fetal weight estimation to prevent complications associated with fetal macrosomia.

Researchers should be explore scientific approaches in fetal weight estimation by clinical methods should work towards a consensus to improve on the reliability and reproducibility of the formulae, taking into some of the draw backs using ultrasound. This will prevent complications of fetal macrosomia in poor resource settings.

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