



## CASE STUDY

### A RARE CASE OF FETAL MACROSOMIA: WITHOUT MATERNAL DIABETES OR HYPOTHYROIDISM

**\*Dinesh Kumar, R. K. Praneshwari Devi, L. Somen Kumar Singh, L. Ranjit Singh, M. Rameswar Singh, N. Romita Devi, Zirasangliana Chhange and Keni Riba**

Department of Obstetrics and Gynecology, RIMS Imphal (Manipur), India

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#### ABSTRACT

Foetal macrosomia is a rising challenge in present obstetrics. It is more common in the infant of the diabetic mother, but it occur in non- diabetic pregnancies. In modern obstetrics, fetal macrosomia is a major contributor to obstetric morbidity. Increasing birth weight is known to predispose to a more difficult delivery and increasing rates of caesarean delivery. Women with a history of one macrosomic infant are at significantly increased risk of another macrosomic infant in a subsequent pregnancy. We reported a rare case of primigravida, 39 weeks gestation with breech in labour with big baby without any association of diabetes or hypothyroidism. By clinical examination baby was big and there was fetopelvic disproportion. She was planned for emergency caesarean section. She delivered a single live male, 6.1kg baby by emergency lower segment caesarean section.

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## INTRODUCTION

Macrosomia is described as a newborn with an excessive birth weight. Fetal macrosomia has been defined in several different ways, including birth weight of 4000–4500 g (8 lb, 13 oz to 9 lb, 15 oz) or greater than 90% for gestational age after correcting for neonatal sex and ethnicity (90th percentile). Fetal macrosomia is encountered in up to 10% of deliveries (Martin *et al.*, 2006) Factors associated with fetal macrosomia include genetics, duration of gestation, presence of gestational diabetes, and diabetes mellitus types I and II. Genetic, racial, and ethnic factors influence birth weight and the risk of macrosomia, (Okun *et al.*, 1997) Macrosomia occurs with higher frequency in newborns of Hispanic origin. Increasing birth weight is known to predispose to a more difficult delivery and increasing rates of neonatal injury including clavicular fracture and damage to the nerves of the brachial plexus. The macrosomic newborn is at risk of both hypoxic (severe birth asphyxia with encephalopathy) and traumatic birth injuries inclusive of which are brachial plexus injuries, shoulder dystocia, clavicular fractures. The incidence of shoulder dystocia was found to range

between 19.9% and 50% of pregnancies complicated by diabetes. (Chatfield, 2001) Other neonatal complications include hypoglycaemia, polycythaemia, hyperbilirubinaemia and respiratory distress syndrome. (Berk *et al.*, 1989) Women with a history of one macrosomic infant are at significantly increased risk of another macrosomic infant in a subsequent pregnancy. For women with two or more macrosomic infants, the risk is even greater. (Walsh *et al.*, 2007) Most effective way to manage macrosomia is by prevention i.e. by improving modifiable risk factors like obesity and gestational diabetes.

#### Case report

A Joyshree, 26 year Primigravida reported in opd at regional institute of medical science, Imphal, as a case of primigravida, 39 weeks gestation with breech in labour with fetopelvic disproportion (big baby) on 28 August 2015. By per abdomen examination baby was big and there was fetopelvic disproportion by pv examination. She delivered a single live male, 6.1kg baby by emergency lower segment caesarean section. Baby did not cry immediately. Neonatal resuscitation done and baby admitted in NICU. Baby's, temperature, spo2 and blood glucose monitoring results were within normal limit except tachypnoea. Neonatal resuscitation done and investigated properly. There was no association with diabetes and hypothyroidism. During ANC checkup mother's blood

**\*Corresponding author: Dinesh Kumar,**

Department of Obstetrics and Gynecology, RIMS Imphal (Manipur), India.

suger was in normal limit, fetus weight was 3.7kg at 38wks and result of GTT was against impaired glucose tolerance/diabetes. Mother's thyroid profile antenatly and after delivery was not favouring for any hypothyroidism. There was no history of diabetes of first degree or second degree relatives in family and consanguinous marriage. Parents were on an average built (not over weighted) and pregnancy was not postdated (39 wks POG). Glucose tolerance test and thyroid profile were within normal limit after delivery. Pt was followed up and advise for genetic counslng and further examination for higher centre as chances of macrosomia in future pregnanacy are there.



**Pic. of newborn Macrosomia**

## DISCUSSION

Foetal macrosomia is defined conventionally as newborn weight exceeding 4000gm. Various maternal and foetal factors predispose to foetal macrosomia. The incidence of foetal macrosomia is increasing, and has highlighted the management dilemma of vaginal delivery. In modern obstetrics, extremes in fetal weight have attracted immense attention because of the associated increase in perinatal morbidity and mortality. Clinical assessment and ultrasound can diagnose macrosomia but the precise determination of foetal weight can be done only after delivery. For suspected foetal macrosomia, the accuracy of estimated foetal weight using ultrasound biometry is no better than that obtained with clinical palpation (Leopold's maneuvers). The incidence of macrosomia varies according to ethnicity, genetic differences and anthropometric discrepancies between populations. Foetal macrosomia is an upcoming

obstetrical challenge because not only the task of identifying women is at risk for delivering macrosomic infants difficult, but our ongoing dilemma in managing such infants is to balance a theoretical high fetal risk of vaginal delivery against a high maternal risk of cesarean delivery. If patient is going for vaginal delivery, the obstetrician must be prepared for the possibility of increased risk of prolonged labour, maternal haemorrhage and perineal trauma. Macrosomia is associated with multiple maternal and foetal complications. These include prolonged obstructed labour due to fetopelvic or cephalopelvic disproportion. Neonatal complications such as shoulder dystocia, neonatal asphyxia, skeletal and nerve injuries such as Erb's palsy, Klumpke's palsy etc may lead to childhood and adult disability as well as death. Such injuries could be avoided or at least decreased by using appropriate techniques to deliver the fetus safely.

It is more common in the infant of the diabetic mother, but it occur in non- diabetic pregnancies. It may be because of constitutional reasons without any diabetes or hypothyroidism. In modern obstetrics, fetal macrosomia is a major contributor to obstetric morbidity. It is an important cause of perinatal morbidity and mortality. Mortality in this condition is associated with co-existing complications. Macrosomia is associated with birth injuries, increased incidence of neonatal morbidity and mortality, caesarean deliveries and maternal injuries, like prolonged labor, shoulder dystocia and injury to infant following instrumental delivery for mid-cavity arrest are the major fetal risks. (Meshari *et al.*, 1990) According to ACOG committee measure risk factor of macrosomia are as follows in the decreasing order of importance; a history of macrosomia, maternal prepregnancy weight, weight gain during pregnancy, multiparity, male fetus, gestational age > 40 weeks. Elective cesarean delivery has been advocated by many authorities when the estimated fetal weight is  $\geq 4500$  g, for reducing the incidence of dystocia and traumatic injury, with possible long-term sequelae and even fetal death. There is no consensus regarding the most appropriate route of delivery for macrosomic infants, which is influenced by physician bias and patient preference. It should be noted that the majority of large infants are constitutionally large and do not require special intervention, which will result in adverse perinatal outcome. Pre-conceptual Counseling and screening should be done for pre-gestational diabetes, and applying appropriate treatment and management, this can have a major beneficial effect in the two conditions that can go hand in hand: diabetes (gestational and pre-gestational) and obesity. The obstetrician must be prepared for the possibility of shoulder dystocia and be able to use appropriate techniques to deliver the fetus safely. The American College of Obstetricians and Gynecologists Practice Bulletin #22 states that a prophylactic cesarean delivery "may be considered" for an estimated BW>4500 g in diabetic mothers. (American College of Obstetricians and Gynecologists, 2000)

In our case we reported pt in opd as a term pregnancy, breach in labour with fetopelvic disproportion (big baby). She immediately planned for caesarean section. She did not come for antenatal check up properly. During ANC checkup mothers blood suger was in normal limit, fetus weight was 3.7kg at 38wks by ultrasound and result of GTT was against impaired

glucose tolerance/diabetes. Mother, s thyroid profile antenately and after delivery was not favouring for any hypothyroidism. Macrosomia is mostly associated with diabetes or thyroid disfunction, but in our case, there was no association with these disorder. It may be because of constitutional macrosomia.

### Conclusion

Foetal macrosomia is a rising challenge in present obstetrics. Macrosomia is associated with many complications and is considered to be a high risk group that requires an intensive care in most cases. A proper counselling should be done for future pregnancies and a proper guide line should be made for management of macrosomia in pregnancy.

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