

Frequency of Intrapartum Complications in Macrosomic Fetuses

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ABSTRACT

Objective: To study the frequency of intrapartum complications of macrosomic fetuses.

Study design: Descriptive case series

Settings: This study was conducted in the department of Obstetrics and Gynaecology Fatima Memorial Hospital Lahore for a period of six months from October 2011 to March 2012.

Methods: This study included 80 patients with diagnosis of macrosomic fetus. All the patients were evaluated for the presence of intrapartum complications (caesarean section, shoulder dystocia and perineal lacerations) which was described as frequency and percentage. The data was collected in specially designed Performa.

Results: Majority of the patients were between 26-30 years, i.e. 38.75%(n=31) mean \pm sd was recorded as 30.85 \pm 4.27 years, 30%(n=24) were with 0 para, 38.75%(n=31) were between para 1-2 and 31.25%(n=25) were with para >2, mean \pm sd was 1.9 \pm 0.84, 61.25%(n=49) with 41⁺¹ weeks of gestation, while 38.75%(n=31) were recorded with 41⁺³ weeks of gestation, mean \pm sd was 41.15 \pm 0.17 weeks, frequency of intrapartum complications of macrosomic fetus was recorded in 63.75%(n=51) with perineal tear, 33.75%(n=27) with caesarean section and shoulder dystocia was recorded in 8.75%(n=7).

Conclusion: The result of the study reveals that frequency of intrapartum complications i.e. (caesarean section, perineal tears and shoulder dystocia) is high among patients with macrosomic fetus.

Key words: Macrosomic fetus, intrapartum complications (caesarean section, perineal tears and shoulder dystocia)

INTRODUCTION

Macrosomia is generally defined as birth weight of at least 4000gm. Babies that are of birth weight 4000gm and above are therefore referred to as macrosomic babies. Fetal macrosomia poses a great risk to pregnancy particularly labour and delivery and is associated with increased maternal and perinatal morbidity and rarely mortality¹.

Factors predisposing to macrosomia are diabetes, obesity, post dates pregnancy, multiparty, advanced maternal age, large stature and previous H/O macrosomic baby. Uncontrolled diabetes mellitus leads to macrosomic babies in 32% whereas in controlled diabetes incidence is only 8% as reported in local study². Fetal factors include genetic or congenital disorders.

Incidence of macrosomia is 5.2%. Maternal and perinatal complications associated with macrosomia are postpartum haemorrhage, shoulder dystocia, birth asphyxia and still birth³. Permanent brachial plexus injury and maternal birth canal trauma are also complications associated with fetal macrosomia⁴. The caesarean section rate also

considerably rises with increased birth weight of the baby.

Studies in different centers have shown the occurrence of these complications in relation to a fetal macrosomia. The complications like shoulder dystocia in macrosomic babies was reported 10%. Perineal trauma and postpartum haemorrhage 60% and caesarean section due to non progress of labor and fetal distress was seen in 30% of cases as reported in recent local study⁵.

In my setting, where proportion of women delivering macrosomic babies is quite high, calculating the frequency of intrapartum complications of macrosomic fetuses will be beneficial because if found to be high, it will be possible for us to modify our current labor monitoring policies and to implement changes so that such pregnancies are properly monitored in labor. Anticipating all possible complications and resort to caesarean section when indicated will be useful for patients in decreasing maternal morbidity and perinatal morbidity and mortality. Patients will be benefited or their hospital stay and financial cost on treatment of complications will be reduced and they will be able to take healthy babies back home.

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MATERIALS AND METHODS

This was a descriptive case study conducted on 80 patients in department of Obstetrics and Gynaecology Fatima Memorial Hospital Lahore for a period of six months from October 2011 to March 2012. Patients included in the study were between 20 – 40 years of age, with post dates pregnancy with a single fetus and estimated fetal weight of 4000 gm or more on ultrasound. Patients with history of previous caesarean sections, maternal height 4 feet 6 inches and below and cephalopelvic disproportion were excluded from the study. They were studied for intrapartum complications including perineal trauma (Perineal tears involving anal sphincter complex and rectal mucosa assessed clinically), shoulder dystocia (Inability to deliver shoulders just after delivering of fetal head, during delivery) and delivery by C section.

Data collection and analysis: The cases fulfilling the inclusion criteria were included in the study after obtaining informed consent. The demographic information like name, age, address was obtained. Patients were delivered according to usual protocol of the department and we looked after the intrapartum complications as mentioned in inclusion criteria like perineal tear, shoulder dystocia and caesarean section. Patients with complications were managed actively according to standard protocol. The collected data was entered in the SPSS version 10 and analyzed through its statistical package. The quantitative variables including age, parity and duration of pregnancy were presented as mean and standard variation. The qualitative variables including perineal trauma, shoulder dystocia and caesarean section were presented as percentage and proportions. Since it is a descriptive study so no test of significance was applied.

RESULTS

In this study, a total of 80 patients were recruited after fulfilling the inclusion/exclusion criteria to study the frequency of intrapartum complications of macrosomic fetus. Majority of the patients were between 26-30 years, i.e. 38.75%(n=31), 33.75%(n=27) were between 20-25 years of age, 16.25%(n=13) were between 31-35 years and only 11.25%(n=9) were between 36-40 years of age, mean±sd was recorded as 30.85±4.27 years (Table 1)

Table 1: Age distribution of the patients (n=80)

Age (years)	=n	%age
20-25	27	33.75
26-30	31	38.75
31-35	13	16.25
36-40	09	11.25

Mean and S.D=30.85±4.27

Distribution of the patients according to parity was calculated and presented in Table 2, where 30%(n=24) were with 0 para, 38.75%(n=31) were between para 1-2 and 31.25%(n=25) were recorded with para >2, mean±sd was 1.9±0.84 (Table 2)

Table 2: Parity of the subjects (n=80)

Parity	=n	%age
Para 0	24	30
Para 1-2	31	38.75
Para >2	25	31.25

Mean +sd=1.9±0.84

Duration of pregnancy was calculated which shows 61.25%(n=49) with 42⁺⁶ weeks of gestation, while 38.75%(n=31) were recorded with 43⁺⁶ weeks of gestation, mean±sd was recorded as 42.59±0.17 weeks. (Table 3)

Table 3: Duration of pregnancy (n=80)

Gestational age (in weeks)	=n	%age
41 ⁺¹	49	61.25
41 ⁺³	31	38.75

Mean+sd=41.15±0.17

Frequency of intrapartum complications of macrosomic fetus was recorded in 63.75%(n=51) with perineal tear, 33.75%(n=27) with caesarean section and shoulder dystocia was recorded in 8.75%(n=7) (Table 4).

Table 4: Frequency of intrapartum complications of macrosomic fetus (n=80)

Intrapartum complications	=n	%age
Perineal tear	51	63.75
Cesarean section	27	33.75
Shoulder dystocia	07	8.75

DISCUSSION

Fetal macrosomia, commonly defined as a birth weight above the 90th centile for gestational age (GA), is associated with increased risks for the mother, including caesarean section and trauma to the birth canal, and for the baby, including shoulder dystocia and consequent brachial plexus or facial nerve injuries, fractures of the humerus or clavicle and birth asphyxia⁶⁻¹¹.

In our setting, where proportion of women delivering macrosomic babies is quite high calculating the frequency of intrapartum complications of macrosomic fetuses was beneficial because of modification of current labour monitoring policies and to implement changes so that such pregnancy may be properly monitoring in labour on the basis of results. Anticipating all possible complications and resort to caesarean section when

indicated may be useful for patients in decreasing maternal morbidity and perinatal morbidity and mortality. Furthermore patients may be benefited as their hospital stay and financial cost on treatment of complications will be reduced and they will be able to take healthy babies back home.

Majority of the patients were between 26-30 years, i.e. 38.75%(n=31), mean±sd was recorded was 30.85±4.27 years, parity was calculated and as 30%(n=24) with 0 para, 38.75%(n=31) were between para 1-2 and 31.25%(n=25) were recorded with para >2, duration of pregnancy was 61.25%(n=49) with 41⁺¹ weeks of gestation and 38.75%(n=31) with 41⁺³ weeks, mean±sd 41.15±0.17 weeks, intrapartum complications were 63.75%(n=51) perineal tear, 33.75%(n=27) cesarean section and shoulder dystocia was 8.75%(n=7).

These results are in agreement with Iftikhar R⁵ who recorded 60% had perineal trauma, 30% cesarean section and 10% shoulder dystocia.

Another study by Kraïem J¹² reviewed the difficulties in prediction of fetal macrosomia, assessed trial of labor results, and confirmed the increased risk of perinatal complications. The incidence of shoulder dystocia was 13.5%. Thus there was increased risk of shoulder dystocia and it was believed that cesarean delivery was justified in all cases of fetal weight estimation > 4500g.

Bérard J and co-workers¹³ evaluated maternal and fetal complications of macrosomic fetuses according to the mode of delivery, shoulder dystocia occurred fourteen times (22% of vaginal deliveries) and it was the most frequent complication in the series. Maternal complications with vaginal delivery of macrosomic infants included a high incidence of lacerations requiring repair (11%). No complications were noticed in the patients who had a C- section.

Another study by Lipscomb KR¹⁴ at Division of Maternal Fetal Medicine, Los Angeles County + University of Southern California, described the maternal and neonatal outcome of macrosomic infants weighing at least 4500g. The overall cesarean rate was 30.8% (70 of 227). Shoulder dystocia occurred in 18.5% of vaginal deliveries with macrosomia. Maternal complications included increased risk of lacerations requiring repair (especially third- or fourth-degree lacerations) when vaginal delivery was complicated by shoulder dystocia (relative risk [RR] 5.4, 95% confidence interval [CI] 3.1-9.4).

The above discussion is of the view that frequency of intrapartum complications among pregnant women with macrosomic fetus is higher which emphasizes us to modify our current labor monitoring policies and to implement changes so that

such pregnancies may be properly monitored in labor. Anticipation of all possible complications and resort to caesarean section when indicated may be useful for patients in decreasing maternal morbidity and perinatal morbidity and mortality.

CONCLUSION

The result of the study reveals that frequency of intrapartum complications i.e. (cesarean section, perineal tears and shoulder dystocia) is high among patients with macrosomic fetus. So, it is recommended that every patient who present with macrosomic fetus, should be sorted out for intrapartum complications. However, it is also required that every setup should have their surveillance in order to know the frequency of the problem.

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