

Triplet births via caesarean section

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ABSTRACT

Multiple birth occurs when more than one fetus born in a single pregnancy at term. Depending on the number of offspring, different names are used for the multiple births. Common multiples are two and three which is known as twins and triplets. Non identical triplets occurs one out of 8000 pregnancies. An identical triplet occurs when a single fertilized egg splits into two and then one of the resulting two eggs splits again. This event occurs one out of every 500,000 pregnancies.

A 24 year primigravida delivered triplets via lower segment caesarean section at 35 weeks of gestation with excellent perinatal outcome and without any postpartum complication in Chitwan Medical College Teaching Hospital.

Key Words: multifetal births, triplets,

INTRODUCTION

Management of multiple births is very challenging to obstetricians. A well equipped neonatal intensive care unit and a competent gynecologists and an obstetricians is needed to provide advanced care of high risk obstetric cases. Recently a high risk triplet pregnancy was managed with an excellent maternal and neonatal outcome in Chitwan Medical collage, Teaching Hospital.

When one mother delivers 3 children in a single pregnancy, it is called triplet delivery. Non identical triplets' delivery occurs 1 out of 8000 pregnancies. Newborns were non identical triplets. One child was female two were male. Delivery was done via caesarian section. Indication for caesarean was premature rupture of membrane with breech presentation. There was neither

postpartum hemorrhage nor puerperal sepsis and neonatal complications.

Case History

A 24-year primigravida non-diabetic non- hypertensive was admitted to the hospital with the history of leaking per-vagina for 8 hours. She perceived satisfactory fetal movement without labour pain and bleeding per vagina. Triplet pregnancy was diagnosed by USG at 14 weeks of gestation. She was in regular antenatal visits which were uneventful.

On examination she was not pale, her blood pressure and pulse was within normal range.

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Abdominal palpation revealed huge, multiple fetal parts were palpable.

There was neither uterine contraction nor tender. Fetal heart sounds were regular with normal variation.

Caesarean section was performed. First triplet was delivered by breech, the second by cephalic and third again by breech. There were two placentas. First and second baby had a common placenta separated by chorion but third had separate placenta and chorion. There were 2 males of 1.5 & 2 kg respectively and a female of 2 kg. Triplets were admitted in NICU for proper care which was uneventful. Intra-partum and post partum periods were also uneventful.

DISCUSSION

In our opinion, it is very relevant to discuss about all aspects of multiple births in this case report. Multifetal birth occurs when more than one fetus are born in a single pregnancy at term¹. Different names for multiple births are used, depending on the number of offsprings. Common multiples are two and three, known as twins and triplets. Multiple birth siblings are either monozygotic or dizygotic. Monozygotic birth results from a single fertilized egg or zygote splitting into two or more embryos, each carrying the same genetic material. Siblings created from one egg are almost always the same sex except in very rare cases and are commonly called identicals.

Dizygotic or fraternal multiples result from multiple ova being ripened and released in the same menstrual cycle by woman's ovaries, which are then fertilized to grow into multiples. In this

case the zygosity was polyzygotic. They are no more genetically alike than ordinary full siblings. Multiples called polyzygotic represent some combination of fraternal and identical siblings. For example, a set of triplets may be composed of identical twins from one egg and a third sibling from a second egg. The most common form of multiple births for humans are twins.

- Monozygotic – multiple (typically two) fetuses produced by the splitting of a single Zygote.
- Dizygotic – multiple (typically two) fetuses produced by two zygotes
- Polyzygotic – multiple fetuses produced by two or more zygotes

Terms used for the order of multiple births are largely derived from the latin names for numbers. Two offspring (twins) is the most common form, nine (nonuplets) or more being the rarest.

1. Two offspring – twins
2. Three offspring – triplets
3. Four offspring – quadruplets
4. Five offspring – quintuplets
5. Six offspring – sextuplets
6. Seven offspring – septuplets
7. Eight offspring – octuplets
8. Nine offspring – nonuplets
9. Ten offspring – decaplets
10. Twenty offspring – vigintuplets

Identical triplets occur when a single fertilized egg splits in two and then one of the resulting two eggs splits again. This event occurs in 1 out of every 500,000 pregnancies.

High orders of multiple birth (three or more offspring in one birth) may result in a combination of fraternal (genetically

different) and identical (genetically identical) siblings. Genetically identical are also called super twins. For example, a set of quadruplets may consist of two sets of identical twins; in such a case each child has one identical and two fraternal siblings.

Identical triplets or quadruplets are very rare and result when the original fertilized egg splits and then one of the resultant cells splits again (for triplets) or, even more rarely, a further split occurs (for quadruplets). Alternatively the original fertilized egg can split twice (to produce four embryos) and all four may survive, to produce identical quadruplets or one of the embryos may not survive and result in triplets.

Twins, the most common kind of multiple births among humans, occur in about 1 out of every 80 pregnancies. Multiple pregnancies in humans are invariably born prior to 40 weeks of gestation. The average period of gestation for twins is 36 weeks, 34 weeks for triplets and 32 weeks for quadruplets.

Human multiple births can occur either naturally or as a result of infertility treatment such as in vitro fertilization (IVF) several embryos are often transferred to compensate for lower quality. Fertility drugs used in the treatment can cause multiple eggs to mature in one ovulatory cycle.

In general, twins occur naturally at approximately the rate of 1/80 of singleton births, triplets at 1/160 the rate of twin births, and so on. This rule is called Hellin's Law. Older the woman more likely is the chance of natural multiple birth. Theoretically, this is due

to the higher sensitivity of ovarian follicles with follicle stimulating hormone in older age. However this may not be true in all cases as ovarian response to follicular stimulating hormone declines with advanced age. A traditional approximation of the incidence of multiple pregnancies is as follows:

- Twins 1:80
- Triplets $1:80^2 = 1:6400$

The number of multiple births has increased over the last decades. For example, in Canada between 1979 and 1999 the number of multiple birth babies increased 35%. Before the advent of ovulation-stimulating drugs, triplets were quite rare (approximately 1 in 8000 births) and higher order births much rarer still. Much of the increase in birth order can probably be attributed to the impact of fertility treatments, such as in vitro fertilization. Younger women who undergo treatment with fertility medication containing artificial FSH, followed by intrauterine insemination, are particularly at risk for multiple births of higher order.

Factors that are more likely to increase the chance of multiple births are:

- Mother's age: women over 35 are more likely to have multiples than younger women.
- Mother's use of infertility drugs. Approximately 35% of pregnancies arising through the use of fertility treatments such as IVF involve more than one child

The increasing use of fertility drugs and consequent increased rate of multiple births has made the phenomenon of multiples increasingly visible in the public eye.

Mode of delivery in higher-order gestation

With cephalic presentation, vaginal delivery, the first neonate is usually born spontaneously or with little manipulation. Subsequent fetuses however, are delivered according to the presenting part. This often requires complicated obstetrical maneuvers such as total breech extraction with or without internal podalic version or even caesarean section. Associated with malposition of fetus is an increased incidence of cord prolapse. Moreover reduced placental perfusion and haemorrhage from separating placenta are more likely during delivery. For all these reasons, many clinicians believe that pregnancies complicated by three or more fetuses are best delivered by caesarean section.

Premature birth and low birth weight

Babies born from multiple-birth pregnancies are more likely premature birth than those from singleton pregnancies. Fifty one percent of twins and 91% of triplets are born preterm, compared to 9.4% in singletons. Likewise 14% of twins and 41% of triplets are even born very preterm, compared to 1.7% in singletons. The preterm births also result in multiples tending to have a lower birth weight compared to singletons.

Some evidence indicates that only 1.10% of singletons are born with a very low birth weight and 10.12% twins and 31.88% triplets were found to be born with very low birth weight.

Cerebral palsy

The statistics from England showed that Cerebral palsy is more common among multiple births than single births, being 2.3 per 1,000 survivors in singletons, 13 in twins, and 45 in triplets².

Incomplete separation

Multiples may become monochorionic sharing the same chorion resulting in risk of twin-twin transfusion syndrome. Monochorionic multiples may even become monoamniotic, sharing the same amniotic sac, resulting in risk of umbilical cord compression and entanglement. In very rare cases, there may be conjoint twins, possibly sharing function of internal organs.

Mortality rate (stillbirth)³

Multiples are also known to have a higher mortality rate. It is more common for multiple births to be stillborn, while for singletons the risk is not as high.

Fertility therapy problems and selective reduction^{4,5,6}

Today many multiple pregnancies are the result of fertility therapy. Another procedure that the medical world is using today is known as selective reduction, i.e. the termination of one or more, but not all, of the fetuses. Though selective reduction seems to be working, mothers of multiples who undergo this procedure are at a higher risk of miscarrying compared to that of an unreduced twin pregnancy.

Birth process and neonatal intensive care^{7,8}

When it comes to the birthing process of multiples, mothers are more likely to receive a Caesarean section (C-section) delivery than vaginal. Caesarean delivery rate for mothers of multiples increased from 21.9% to 27%.

Multiple-birth infants are usually admitted to neonatal intensive care immediately after being born.

CONCLUSION

Complications such as preeclampsia, premature delivery, intrapartum and post partum hemorrhage are more common in multiple pregnancy. Special antenatal, intranatal and post natal care is must to them. Well-equipped neonatal intensive care unit and obstetric expertise is necessary for the management of neonates of multiple births. This achievement is possible in Chitwan Medical College.

REFERENCES

1. Alexander G, Kogan M., Martin J, and Papiernik E. What are the fetal growth patterns of singletons, twins, and triplets in the United States? *Clinical Obstetrics and Gynecology* 1998; 41(1):114-125.
2. Pharoah PO, Cooke T. Cerebral palsy and multiple births. *Archives of Disease in Childhood-Fetal and Neonatal Edition* 1998; 75: 174-177.
3. Hammond K. Multifetal pregnancy reduction. *Journal of Obstetrics and Gynecological and Neonatal Nursing* 1989; 27(3):338-343
4. Elsner C., Tucker M., Sweitzer C., Brockman W., Morton P., Wright G., and Toledo A. Multiple pregnancy rate and embryo number transferred during in vitro fertilization. *American Journal of Obstetrics and Gynecology* 1997; 177(2):350-355
5. Armour K, Callister L. Prevention of triplets and high order multiples: Trends in reproductive medicine. *Journal of Perinatal and Neonatal Nursing* 2005; 19(2):103-111
6. Antsaklis A., Drakakis P, Vlazakis G., and Michalas S. Reduction of multifetal pregnancies to twins does not increase obstetrics or perinatal risks. *Human Reproduction* 1998; 14(5) :1338-1340
7. Kogan M., Alexander G., Kotelchuck M., Macdorman M., Buckens P., Martin J., and Papiernik E. Trends in twin birth outcomes and prenatal care utilization in the United States, 1981-1997. *The Journal of American Medical Association* 2000; 284(3):335-341
8. Kaufamn GE, Malone FD,Harvey-Wilkes KB, Chelmow D, Penzias AD, D' Alton ME. Neonatal morbidity and mortality associated with triplet pregnancy. *Obstetrics and Gynecologists* 1998; 91:342-348.