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RESEARCH ARTICLE

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Spontaneously Conceived Quadruplet with Three Viable Babies & A Papyraceous Fetus: A Case Report

Onyekpa I.J[1,2*], Odugu B.U[1,2], Okafor I.I[1,2], Nevo C[1], Omeke C.A[1], Ortuanya K[1], Ofonere C[1,2], Udeozor V[1], Ezeora N[1], Nwachukwu B.C[2] and Onyekpa C.S[3]

[1]Department of Obstetrics & Gynaecology, Enugu State University of Science & Technology Teaching Hospital/College of Medicine, Enugu.
[2]SEMINO Specialist Hospital, Abakpa-Nike, Enugu.
[3]Department of Nursing Services, Enugu State University of Science & Technology Teaching Hospital, Enugu.

ABSTRACT

Background: High order multiple gestations are an uncommon occurrence. The incidence of multiple gestation continues to decrease as the number of fetuses increase as calculated using Hellin's rule: incidence = $1:80^{n-1}$ births, where n is the number of fetuses. Thus, the expected incidence of quadruplets is estimated at 1 in 512,000 births. All these have changed with the advent of reproductive technology. However, the occurrence of quadruplets as a natural process has remained rare globally.

Objective: To report a case of a successful spontaneously conceived quadruplet with the death of one of the fetuses and delivery of 3 live fetuses and a twin papyraceous fetus at the 36^{th} week of gestation.
Methods: We report a case of a 28-year-old para-2 woman who had a spontaneous conception resulting in a quadruplet. She had an ultrasound diagnosis of death of one of the fetuses at 25 weeks of gestation. She was admitted twice in the course of the pregnancy and subsequently delivered at the 35^{th} week of gestation.

Results: A successful caesarean delivery of 2 fem ales and 1 male with a male papyraceous fetus.

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Spontaneously, Conceived, Quadruplets, Case-report.

Introduction

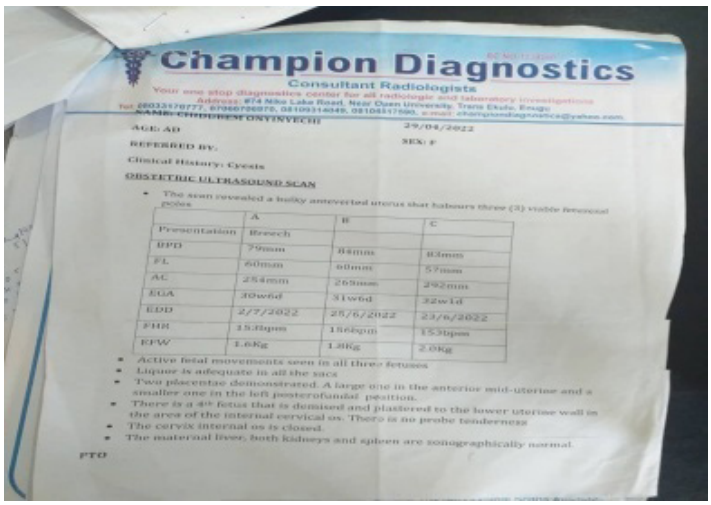
Spontaneous quadruplet pregnancy is very uncommon. The incidences of higher order multiple pregnancies range from 0.01% to 0.07% of all pregnancies [1]. Some other studies put the incidence at 1 in 512,000 to 1 in 677,000 births [2,3]. Multiple pregnancies and especially, higher order multiples are rare. However, the incidence of such pregnancies is increasing owing to assisted reproductive technology (ART) and ovulation induction therapies with agents like clomiphene citrate. It is estimated that 60% of triplets, 90% of quadruplets and 99% of quintuplets are from fertility treatments and ART [4]. It can also occur following cessation of clomephene citrate, the so-called 'sustained effect' [5]. Quadruplet as if other higher order multiple pregnancies pose a lot of management challenges and complications. Such pregnancies have a higher risk of miscarriages, preterm labour and delivery, operative delivery and postpartum haemorrhage. Others include placenta praevia, abruptio placentae, stillbirth and perinatal death. The risk of medical complications in pregnancy is also high in such pregnancies [6]. Of all the challenges in the management of higher order multiples; preterm labour and delivery have been the most pressing. There may be need for more hospital admissions and intensive monitoring and follow-up. Some people had made a case for routine cerclage for higher order multiple pregnancies but the results are equivocal [7-10]. Patients with high order multiple pregnancy are considered a high-risk pregnancy and this should reflect on the intensive monitoring and evaluation to produce a favourable outcome.

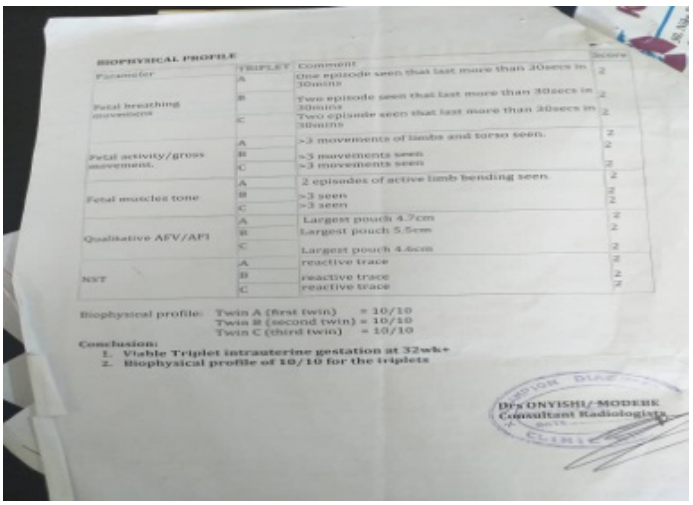
Case Report

We report a case of a 28-year-old gravid-2 para-1 who booked in our centre at 20 weeks of gestation with ultrasound diagnosis of spontaneously conceived quadruplet gestation. The pregnancy was actually unplanned as the patient was trying to round off her Master's Degree program in the university at that time.

She had missed her period and afraid of being pregnant sought contraceptive advice. She was then sent for ultrasound scan to rule out pregnancy and the report confirmed a quadruplet with 4 viable fetuses and dichorionic-tetraamniotic placenta. There was no exaggerated pregnancy symptom prior to booking. At booking her blood pressure was 155/100mmHg, urinalysis, normal and the symphisio-fundal height was 28cm. Her packed cell volume was 30% and the virology tests and clotting studies were normal. She was started on tablet Methyl-DOPA 250mg tds, haematinics and anti-malarial prophylaxis.

Contact Onyekpa Ifeanyi Johnson ✉ Department of Obstetrics & Gynecology, Enugu State University of Science & Technology Teaching Hospital/College of Medicine, Enugu, Phone: +2348064086359.





Figures 1 & 2: Ultrasound & BPP reports.

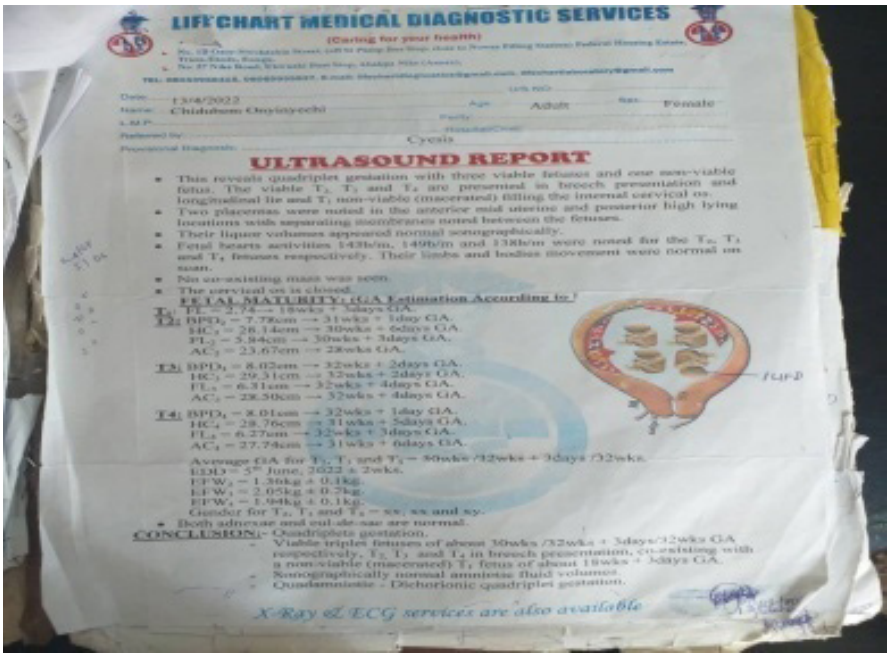


Figure 3: Ultrasound reports.

Figures 4-8: The patient before surgery, the 3 babies and the papyraceous fetus.

She had no family history of twinning, hypertension or diabetes mellitus. At 25 weeks of gestation, she presented with intermittent abdominal pain without any drainage of liquor or vaginal bleeding and repeat ultrasound scan showing demise of one of the fetuses. She was admitted into the ward as a case of preterm contraction with a quadruplet gestation and gestational hypertension. After 6 days on admission and treatment with tocolytics and antibiotics, she was discharged. She had frequent hospital visits. Repeat clotting studies and ultrasound scan were unremarkable. She was readmitted at 34 weeks because of raised blood pressure, which was treated, until her delivery. At 35 weeks, a repeat ultrasound scan and biophysical profile (BPP) were done and the scores for the BPP were good for each of the viable fetuses. Their weights were estimated to be 1.6kg, 1.8kg and 2.0kg for the three fetuses respectively. She had elective caesarean delivery at 35 weeks and 4 days with an outcome of 2 female neonates and one male neonate that weighed 1.7kg, 1.9kg and 2kg respectively with good Apgar scores; and a male papyraceous baby. Intravenous carbetocin 100 microgram was used intra-operatively to prevent postpartum haemorrhage. The babies were admitted into the neonatal intensive unit for early neonatal care. The newborn admission was uneventful as they were discharged after 7 days on admission.

The patient herself was discharged after 5 days post-surgery without any complications at blood a pressure of 140/90mmHg. She was seen at the post-natal clinic 6 weeks postpartum with no complaints. The babies were essentially normal and weighed 2.6kg. 2.7kg and 3.0kg respectively. She was discharged to cardiology clinic and family planning unit.

Discussion

Quadruplet pregnancy occurs when 4 fetuses are present in the uterus at the same time. It is a rare occurrence and even rarer for it to occur naturally [1-3]. In this case, report, the conception was spontaneous and undesired. That ruled out any possibility of ovulation induction whatsoever. It is not uncommon to have a single fetal death in a multiple gestation, but the data especially concerning quadruplet is scarce. The death of one of the fetuses in a purely monochorionic placenta places the life of the surviving fetus in a grave danger. The placentation in this index case was tetrachorionic and tetraamniotic, which may explain the little or no significant affectation of the surviving fetuses. However, the ultrasound done at 20 weeks made a diagnosis of dichorionic-tetraamniotic placentation. However, the ultrasound diagnosis at that gestational age is not very reliable. The management of quadruplet pregnancy poses a challenge to the obstetrician because all the complications of pregnancy, labour and delivery are exaggerated [11]. Disseminated intravascular coagulation is a major maternal complication especially with prolonged interval of death to delivery of the fetus, greater than 5 weeks [12]. Our patient had death to delivery interval of greater than 5 weeks but did not develop coagulopathies perhaps due to the fact that the demise occurred early in the gestation. Routine prophylactic tocolysis is not recommended in high order multiple pregnancy but treatment of preterm contraction that is a major complication of such pregnancies with tocolysis and bed rest has given some results [13]. Our patient benefitted from tocolysis with salbutamol initially, thereafter, nifedipine to carry the pregnant to as close to term as possible. Compared with mothers of twin, mothers of triplets, quadruplets and quintuplets are more likely to be diagnosed with preterm premature rupture of membranes, have excessive bleeding, deliver at less than 29 weeks of gestation and have one or more infants die. The median age at delivery ranges from 28-31 weeks [14,15]. Our patient was delivered at 35th week; however, one of the fetuses had died earlier reducing the risk of uterine over-distension.

Conclusion

Quadruplets and other higher order multiple pregnancies are rare occurrences, becoming more so, when they occur naturally. They constitute a serious management challenge to the obstetrician requiring intensive antenatal monitoring and evaluation with a view to diagnosing complications early and offering timely intervention to improve overall outcome.

References

1. Nnadi D, Ibrahim A, Nwobodo E. Spontaneous, Monochorionic Tetra-Amniotic Quadruplet Pregnancy at Term. J Basic Clin Reprod Sci. 2013; 2: 57-59.
2. Goldman GA, Dicker D, Peleg D, Goldman GA. Is Elective Cerclage Justified in the Management of Triplet and Quadruplet Pregnancy? Aust NZL J Obstet Gynaecol. 1939; 29: 9-11.
3. Ogonowo T, Oluwole O, Aimakhu CO, Ilesanmi AO, Omigbodun AO. Term Quadruplet: A Case Report. Niger J Surg Rsch. 2004; 6: 56-58.
4. Fellman J, Eriksson WA. On the History of Hellin's Law. Australian Academic Press 2009; 12: 183-190.
5. Doyle P. The Outcome of Multiple Pregnancies. Hum Reprod. 1996; 11: 110-120.
6. Sabina Carrara, Alessandro Caveliere, Santina Ermto, Angela Dinatale, Elisa Maria P, et al. Case Report: Successful of a Spontaneous Quadruplet Pregnancy. Journal of Prenatal Medicine. 2009; 3(1): 10-11.
7. Nail Obeidat, Haifa Alchalabi, Maha Obeidat, Bahauddin Sallout, Shereen Hamadneh, et al. Effectiveness of Prophylactic Cervical Cerlage in Prolonging Higher Order Multiple Pregnancies. Sultan Qaboos Univ Med J. 2017; 17(3): e314-e318.
8. Martin JA, Kung HC, Mathews TJ, Hoyert DL, Strobino DM, et al. Annual Summary of Vital Statistics: 2006 Paediatrics. 2008; 121: 788-801.
9. Refuerzo JS, Momirova V, Peaceman AM, Sciscione A, Rouse DJ, et al. Neonatal Outcome in Twin Pregnancies Delivered Moderately Preterm, Late Preterm and Term. Am J Perinatol. 2010; 27: 531-542.
10. Nwobodo EI, Bobzom DN, Obed J. Twin Births at the University of Maiduguri Teaching Hospital: Incidence, Pregnancy Complications and Outcome. Niger J Med. 2002; 11: 67-70.
11. Rafael TJ, Berghella V, Alfirevic Z. Cervical Stitch (Cerclage) for Preventing Preterm Birth in Multiple Pregnancy and Assisted Reproductive Technologies. Int J Gynecol Obstst. 99; 64: 11-25.
12. Harshini V, Geethanjali, Vijaya R, Prajna. Outcome in Twin Pregnancy with Intrauterine Death of First Twin: A Case Report. Int J Med Health Sci. 2012; 1(4): 72-75.
13. Roger B Newman. Obstetric Management of High Order Multiple Pregnancies. Bailliare's Clinical Obstetrics and Gynaecology.1998; 12; (1): 109-129.

14. Arletaz R Paraskevopoulos E, Bucher H. Triplets and Quadruplets in Switzerland: Comparison with Singletons and Evolution Over the Last Decade'. Journal of Perinatal Medicine. 2003; 31: (3): 242-250.

15. AI Adegbite, Ward BS, Bajoria R. Perinatal Outcome of Quadruplet Pregnancies in Relation to Chorionicity. Journal Of Perinatology. 2007; 27(1): 15-21.