

THE CHALLENGES OF MANAGING QUINTUPLETS IN A DEVELOPING COUNTRY (NIGERIA)

A. I. Omoigberale*, A. A. Okolo*, C. Eregie*, A. B. Ande**, A. O. Obasohan+,
O. Y. O. Asemota**, L. N. M. Odum*

*Departments of *Child Health, **Obstetrics & Gynaecology, +Medicine, and **Anaesthesiology,
University of Benin Teaching Hospital, Benin City.*

SUMMARY

High order multiple deliveries have been reported from a number of developed countries previously but not from a developing country. This report highlights the challenges posed by the management of the second surviving quintuplet delivery in Nigeria at the University of Benin Teaching Hospital Benin, and the subsequent management of the babies. The first was at UNTH in 1988 but the mother took fertility drugs.

The challenges encountered during the antenatal care of the mother included the long stay in the hospital of the mother for bed rest, accurate diagnosis of the number of the babies prenatally, management of the weight of the mother and the acceleration of the maturation of the babies' lungs. During delivery, resuscitation of the babies with the available health professionals, materials and equipment also posed some problems. Continuous ambubagging with oxygen was performed when some of them went apnoeic. Continuous positive airway pressure (CPAP) ventilation with a respirator (ie mechanical ventilation), which was not available during resuscitation or early in their lives, could not be offered. Management consisted of using hot water bottles, perplex glass shield to maintain body temperature instead of incubators and respirators; which also were not available. It is recommended that adequate manpower, equipment and diagnostic procedures be made readily available to cope with such circumstances. This case is highlighted because this is the first known surviving quintuplet delivery in Nigeria by a mother without having taken fertility drugs and to evaluate the management of these babies and their mother in difficult circumstances.

INTRODUCTION

Early in the seventies, hospitals were built and equipped with state of the art equipment. These equipment were also functional. But with subsequent poor political leadership in the country, these infrastructures underwent gradual disintegration and decay, with the result that in the late nineties and in the new millennium, most of these equipments were no longer working and not in serviceable conditions. University of Benin Teaching Hospital is the 5th out of the seven first generation teaching hospitals built in the seventies in Nigeria. This was the state of affairs in Nigeria when the quintuplets were delivered in the hospital.

It is reported that the incidence of twinning is highest among blacks and East Indians followed by North European whites and lowest amongst the Mongolian races¹. Triplets are estimated to occur in 1 of 86² pregnancies and quadruplets in 1 of 86³ pregnancies in the United States. The incidence of females increases with the number of fetal products of a multiple pregnancy. In Nigeria multiple pregnancies and deliveries like twins, triplets and quadruplets have been reported.

Three ethnic groups in Nigeria have been known to be particularly associated with multiple pregnancies. These are the Ibibios of Cross Rivers State, Yorubas of Southwestern States, and the Igbos of Southeastern Nigeria, especially Abia State (personal communications). Early in 2003 a woman (Nigerian) from one of

the Southeastern State was delivered of octuplets (8 babies) in the United States of America (courtesy of CNN, 2001). This index mother has a history of twinning in the family. Her own mother had a set of twins but she is not a twin and she has had five previous deliveries, all singletons. This woman is from Abia State in Southeastern Nigeria where multiple pregnancies are common. This woman was not on any anti-infertility drugs. The only common association was that she comes from an ethnic group associated with multiple pregnancies in Nigeria (the Igbos).

One quintuplet delivery was reported in UNTH in 1987 but not all survived. Recently after this particular occurrence, one was reported in a hospital in Lagos but only two survived (Vanguard Newspaper Nov. 5th 2001). Similarly sextuplets were delivered in a private hospital in March 2003 (Vanguard Newspaper 5th April 2003). However four have already died with two remaining two. To the best of the authors' knowledge and from available literature, there has been no reported case of a quintuplet delivery, all surviving. Since this is the first time this has occurred in Nigeria (a developing country) with the attendant lack of sophisticated equipment and materials to manage these babies in our Special Care Baby Unit (Intensive Newborn Unit), the challenges of the management of these babies are highlighted for the benefit of other physicians in similar circumstances. Hence the presentation of this case report especially in the light of the fact that this is the first time such a delivery has occurred with all the babies surviving to the age of 1½ years at the time of this report.

*Correspondence: Dr. A. I. Omoigberale

CASE REPORT

A set of quintuplets were delivered at the University of Benin Teaching Hospital Benin City on the 10th January 2001. The babies were delivered to a 33 year old Para5⁺, four alive mother, by emergency caesarean section at 33 weeks of gestation for spontaneous rupture of fetal membranes and preterm labour. A set of quintuplets were delivered as against the antepartum ultrasound diagnosis of quadruplets. Mother had antenatal care at a mission hospital where she had booked. At 25 weeks of gestation, ultrasound examination revealed pregnancy with quadruplets while at 31 weeks of gestation she was referred and admitted to the University of Benin Teaching Hospital for bed rest. On admission, the anaesthetic, neonatal and theatre teams were informed and told to remain prepared for an emergency caesarean delivery at any time. Efforts were made to contact at least three members of each team as soon as possible when the need arose.

The obstetrician in charge and his team ensured all preparations for emergency caesarean delivery were kept in place. They also commenced weekly intramuscular dexamethasone in the mother to facilitate lung maturation in the fetuses.

Four babies were expected based on ultrasound report. Consequently the following special arrangements were made. Three obstetricians made up of one consultant and two senior registrars; four anaesthetists, one consultant, one senior registrar and two registrars; four neonatologists, one consultant, two senior registrars one registrar, three midwives were all mobilized and available at the delivery. At 33 weeks of gestation she was delivered by emergency caesarean section following spontaneous rupture of fetal membranes and pre term labour. At delivery one of the anaesthetists had to join the neonatologists for resuscitation on "discovery" of the fifth child as against the four as revealed by ultrasound prenatally. There was only one resuscitaire (radiant warmer) in theatre and this could only take three babies. The other two babies had to be rushed to the special care baby unit (intensive care unit), which is however nearby, for warming and resuscitation. After appropriate suctioning, oxygen was given by face masks to all the babies; while babies II and V were ambu bagged for a short time before resumption of spontaneous respiration. Babies I, III and IV were females and had three placentae which were fused together while babies I and V were males with separate placentae. Babies I, III and IV had good apgar scores of 8/1, 10/5. Babies II and V had moderate birth asphyxia with Apgar scores of 4/1, 10/5.

The babies' weights were baby I, 1.8kg; baby II, 2.0kg; baby III, 1.65kg; baby IV, 1.7kg and baby V, 2.05kg. Baby II and V were appropriate for gestational age (AGA) while the remaining three babies I, III and IV were small for gestational age (SGA).

The estimated gestational age for all the babies done immediately after delivery by Dubowitz et al was 35.5 weeks. Mother was not known to have had any fertility drugs before conception. She had delivered about five times before this index pregnancy with four children alive. These babies were screened for sepsis because they had risk factors for presumed neonatal sepsis, which included prematurity, low birth weight and interventional delivery. Babies II and V during the 2nd week of life manifested features suggestive of Patent Ductus Arteriosus

(PDA) – dyspnoea, tachypnoea and bounding dorsalis pedis pulse. Both babies had pansystolic murmur maximal at the 2nd intercostal space. But the babies were not cyanosed.

Echocardiographic examination showed Baby II had PDA and Baby V had subaortic ventricular septal defect (VSD). Baby V responded to diuretic therapy of lasix given at 1mg/kg 12hrly for 2 weeks. The murmur disappeared after the first week of therapy. Baby II in addition to diuretic had digoxin. The cardiovascular symptoms disappeared after two weeks of therapy but the murmur persisted until the age of four months. When the babies were treated for presumed sepsis and their temperature stabilized, the greatest and most important problem was that of feeding the babies. The babies were fed cautiously and were given mixed feeding – both breastfeeding and breast milk substitutes. Mother alone could not feed the babies with breast milk exclusively. Mother's EBM (Expressed Breast milk) was given. They were unable to suck initially and were then tubefed through nasogastric tubefeeding. As they got older their sucking reflexes became stronger. They graduated from tubefeeding to cup and spoon-feeding until much later when they were all able to suck from the breasts after five weeks of continuous feeding as stated earlier. Aspiration pneumonia was one major complication we were worried about initially when the babies were being tube fed. Fortunately this never occurred. The babies were discharged after five and half weeks on the ward. The babies are now 18 months old and are all doing well.

They are all walking and running around. As a routine procedure in the unit, all preterm and low birth weight babies are prophylactically placed on phototherapy. These babies were all started on phototherapy. All the babies became jaundiced by the seventh day of life. The bilirubin levels were baby I, 9.5mg %; baby II, 10.6mg%; baby III, 8.7mg%; baby IV, 11.4mg% and baby V, 6.5mg%. Since there were only three functioning phototherapy units, intermittent phototherapy was used for the babies. This was done to enable all the babies benefit from phototherapy, which would have limited the number of babies to benefit from the treatment if continuous phototherapy was done. This way, we were able to control the rate of rise of jaundice and prevented its rise to a dangerous level that would have warranted the use of exchange blood transfusion for the management of jaundice. By the 15th day of life most of these levels in all the babies had been reduced by 50%, and phototherapy had to be discontinued except for baby IV who had phototherapy till the 20th day of life before it was discontinued. The babies responded to a combination of intravenous cloxacillin and intramuscular gentamycin for the management of presumed sepsis at 100mg/kg/day and 5mg/kg/day given at 6 hrly and 12hrly for 10 days respectively. These babies were thus effectively managed and discharged. The babies are being followed up in our outpatient consultant paediatric clinic.

DISCUSSION

The challenges of managing quintuplets in a hospital in a developing country with little or no facilities can be very daunting. We had to fall back to doing what we were able to do in the circumstances we found ourselves. That is making use of our local technology instead of relying on sophisticated facilities

available in western world, which were non-existent in our own setting. First of all, the ultrasound done at 25 and 30 weeks of gestation revealed quadruplets as against quintuplets delivered at 33 weeks. This revealed the occasional inaccuracy of the ultrasound examination. This was not surprising since it is known to occur. It is therefore necessary to be eagle-eyed when performing the procedure and its interpretation. Even with the best it shows it can be fallacious. Again, of the quintuplets; there were 2 males and 3 females. This is in keeping with the fact that there is increasing rate of incidence of females with increasing number of fetal products of a multiple pregnancy¹. The mother of these babies comes from one of the ethnic groups (Igbos) in the Southeastern part of Nigeria that is known to have a history of multiple pregnancies and besides this woman has a history of twinning in her own family.

Now the real challenges were actually with the delivery and the management of these babies. At delivery instead of four babies expected, there were five babies. This tended to throw the teams earlier assembled off balance and especially in the face of inadequate resuscitaires. There was initial panic at the "discovery" of the fifth baby. But prompt movement of some of the babies to the SCBU saved the situation. They were all preterm and low birth weight babies and highly prone to the following problems: temperature instability, feeding, difficulties poor suck, sepsis, jaundice, hypoglycaemia, anaemia etc. The most daunting of the problems were temperature instability, sucking, feeding and jaundice. These babies were managed with our local technology as stated earlier. A unit where only one resuscitaire (radiant warmer) exists could as well be described as inadequate. The only available solution open to us was the use of paediatric hot water bottles, which were available. These were used in conjunction with blankets and perplex glass shield. With the above management the babies were able to maintain their body temperatures throughout the period of admission..

With increasing age their sucking reflex became stronger and were thus able to feed. EBM and breastmilk substitutes were used to augment the feeding of these babies. Perhaps if the babies

had grandmothers, while their mother was on admission, these grandmothers may have been sufficiently mobilized and encouraged for re-lactation in order for the babies to benefit from exclusive breastfeeding. As regards management of jaundice, because of the unit policy of prophylactic phototherapy, these babies even though they all became jaundiced; phototherapy alone was sufficient to treat the babies. They were routinely placed on haematinics and care was taken in taking few and small samples from these babies for investigations to prevent iatrogenic anaemia.

In concluding this communication, it is recognized that this is the very first quintuplets delivery in the country with all surviving at 18months in such difficult circumstances. For optimal care in such circumstances occurring in the future the following recommendations are made. Firstly, optimal utilization of available manpower and facility. Sophistication may not be readily available and does not necessarily equate to better outcome. Secondly, interdisciplinary consultations and efforts tend to produce better outcomes especially in resource poor countries. Lastly, a tertiary centre remains the best place for managing high order births because of the available manpower and facilities, hence early and prompt referral is advocated thus giving room for enough time for planning and management.

This communication is to encourage hospitals in similar circumstances or situation to adapt local technology available to reduce neonatal mortality.

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