



Birth of Sextuplets: The Challenges of Their Care in Countries with Limited Resources. About a Case at the Kamenge Military Hospital (Burundi)

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Abstract

The term “multiple births” refers to the presence of more than one fetus in the uterus. The presence of several fetuses increases the risk of complications. The main risk for the fetus is extreme prematurity (less than 33 weeks) and very premature birth (less than 29 weeks), with its consequences on neonatal mortality and the risk of serious neurological morbidity. The prognosis of premature babies is very dependent on perinatal care. Care becomes even more delicate when it comes to multiple births. We report the case of premature sextuplets born at 29 weeks at the Kamenge Military Hospital. The survival of 4 of whom required the implementation requires considerable material and human resources. The presentation of this clinical case aims to show the problem linked to reception and care in the event of multiple births in countries with limited resources.

Subject Areas

Pediatrics

Keywords

Multiple Births, Sextuplets, Neonatal Emergency, Burundi

1. Introduction

The number of twins, triplets and other multiple births has increased over the past

two decades. Up to 1 in 30 deliveries involve more than one fetus [1]. Multiple births carry maternal and fetal risks that increase with the number of fetuses [2]. Multiple pregnancies are regularly causes of prematurity and neonatal death [3] [4]. The birth of a premature newborn is still considered high risk for the child, it is responsible for the majority of neonatal deaths [4]. The prognosis of premature babies is very dependent on perinatal care. The latter becomes even more delicate and more demanding in resource-limited settings when it comes to high-order multiple births. Good collaboration from the healthcare team and commitment from the administration in the care of at-risk newborns in countries with limited resources are essential. In order to show the problem linked to reception and care in the event of multiple births, we report the case of a multiple birth to sextuplets born prematurely, 4 of whom survived thanks to a strategy put in place by the health authorities.

2. Case

These are six premature newborns, three males and three females, born at 29 weeks to a 32-year-old mother, G4P3EV3, without any particular medical history but with a family history of multiple pregnancies, who was hospitalized in the maternity ward of the KAMENGE Military Hospital for approximately 2 months for close monitoring of a high-ranking natural multiple pregnancy. At 27SA, lung maturation with administration of Dexamethasone had been done. The birth took place by cesarean section. The mother went into labor spontaneously. All newborns cried at birth, the Apgar score in all 6 newborns was greater than or equal to 7 and their birth weights (BW) varied between 970 g and 1152 g (S1 with 1.152 kg; S2 with 1.100 kg; S3 with 0.988 kg; S4 with 1.034 kg; S5 with 1.038 kg and S6 with 0.970 kg). The physical examination noted no visible malformation; there was respiratory distress which ranged from mild to severe in all newborns (see **Figure 1**).

The reception of the sextuplets had been carefully prepared and organized as soon as the cesarean section was announced. The reception team was made up of three pediatricians and ten nurses; six incubators had been prepared to welcome them. The newborns did not receive exogenous surfactant because this drug is not available on local market. A purchase of incubators had been essential. Upon admission, the newborns were placed on oxygen therapy and received infusions based on 10% glucose serum. Unfortunately, two of the premature babies (S3 and S4) died in the first 2 days, from complications linked to extreme prematurity (one from respiratory distress and another from hemorrhagic syndrome). For better care of babies, the Ministry responsible for public health has appointed a team of 6 pediatricians and 4 nurses experienced in newborn care from other 3rd reference hospitals in order to strengthen the pre-existing team at Kamenge Military Hospital and thus be able to allow an exchange of experience in the regular and rigorous monitoring of babies. The team got to work on the 3rd day.

The team of pediatricians had the mission of:

- Assess the general condition of babies every day;
- Monitor the weight growth of babies;
- Diagnose complications and ensure their management;
- Adapt the care of newborns every day;
- Ensure the correct implementation of the opinions of the monitoring staff.

She met as a staff every morning to discuss and discuss the current situation and together develop a care plan to propose for the babies. She had to collaborate closely with the Ministry of Public Health and the Fight against AIDS. The government of Burundi and other partners working in the health field provided technical and financial support. The hospital management was particularly involved in all phases of care and coordinated all initiatives intended for the well-being of the babies. All these actions aimed to increase the chances of survival for the 4 remaining premature babies.

Enteral feeding was introduced on the 2nd day of life and was carried out successfully. It had been based exclusively on breast milk for the first week, then mixed breastfeeding after that. Special milk for premature babies had been ordered from abroad by the hospital management.

At the end of the first 2 weeks the babies were stable. However, at the 3rd week, the newborns had presented clinical signs of a neonatal infection (fever, low reactivity; change in skin tone). In our case, it was not possible to isolate the germ of that infection with laboratory tests, it was negative. Antibiotic treatment with imipenem had been successfully carried out during 7 days and anemia requiring a transfusion was occurred. In one of the babies, atrial communication had been diagnosed but there was no significant impact on his clinical condition. In the latter, complete weaning from oxygen therapy was achieved at the 3rd week. The first 2 babies left the Neonatology to be followed in the maternity unit with their mother on D51 of life and the other two on D53. When leaving Neonatology, the weight was around 1850 g. The progress was good for all 4 babies and they left the hospital with a weight varying between 2300 g and 2700 g at 2 ½ months of life (see **Figure 2**).



Figure 1. At birth.



Figure 2. The four newborns who survived upon leaving the hospital.

3. Discussion and Review Literature

The term “multiple pregnancies” applies to double, triple pregnancies, as well as quadruple, quintuple, sextuple pregnancies, etc. [5]. The number of twins, triplets and more has steadily increased in recent years. In addition to the increase in maternal age, ovulation-inducing treatments and medically assisted procreation techniques in the treatment of infertility are the main factors linked to the significant increase in the number of multiple pregnancies [6]. Studies on the frequency of high-order multiple pregnancies highlight their great rarity beyond triple pregnancies [5], quadruple pregnancy has a frequency of 1/500,000 live births in natural conception [3]. As for the birth of sextuplets, it remains an extremely rare event with an estimated occurrence of once in 4.7 billion deliveries [7]. It is not possible to calculate accurately the spontaneous incidence of sextuplets, septuplets, octuplets, and nonuplets [8].

In a study by Mabilia MJR *et al.* in Brazzaville maternity wards over 12 months, double births represented 1.68% and triple births at 0.02% but beyond triplets, no births were observed [1]. The incidence of multiple births after natural conception is generally less than 2% [4].

In our case, it is a natural pregnancy of which an obstetric ultrasound done 22 weeks revealed sextuplets in a G4 P3 EV3 mother aged 32 years. Maternal age over 30 and multiparity are regularly cited as factors favoring the occurrence of multiple pregnancies.

In study done in Sub-Saharan Africa, it was concluded that the relationship between the occurrence of multiple births and selected characteristics (maternal height, age during the first birth, age and parity during the delivery, and household wealth index), was appraised [9].

The birth of sextuplets being a rare event, it is mainly reported in media articles. A few cases are reported in different countries and most of them are births from pregnancies occurring among multiparous mothers around the age of thirty. We find 2 cases in France 32 years apart reported by La Dépêche.fr with AFP on May

16, 2020, a case in 1988 in Normandy and another in 2020 in Strasbourg at 24SA6d [9], a case in Mexico in 2013 at 27 weeks in a 28-year-old mother who already had 3 children (birth weight between 715 and 810 g) reported by L'Orient-Le jour [10], in Poland in 1987 in a 29-year-old mother, mother of a child at 29 weeks published by 20 Minutes and AFP on 20/5/2019 (BW between 890 and 1300 g) [11], a case in Mali in 2013 in a 31-year-old mother of an 11-year-old child [12]. All these births occurred prematurely by cesarean section before 30 weeks, whether in our case or in the other cases of sextuplets. Twins, triplets and other multiple births have a high risk of prematurity [13] [14]. Preterm labor in multiples pregnancies' occurs frequently. Multiple births are likely to affect birth weight, which results in low birth weight of less than 2500 g, possibly, because multiples are more likely to be born prematurely or less than 37 weeks into pregnancy [5] [15].

Adequate management of pregnancy and childbirth is the guarantee of an improvement in the fetal-maternal prognosis, which is often compromised during multiple births, the improved outcome of triplets or others multiples births may be attributed to close antenatal and perinatal care [16].

Adequate management of multiple births involves early detection and prevention of neonatal complications. Welcoming premature newborns in the first hour could have a positive impact on care [17]. The pregnancy was regularly monitored in our case and lung maturation was noted. The sextuplets were immediately received neonatology in the first minutes by a well-prepared team sufficiently reinforced in number, the incubators were ready and the reception team was waiting on site with all the necessary equipment for the care of the babies. The Kamenge Military Hospital management closely followed all stages of care so that newborns could benefit from the optimal care available in the country. A purchase of equipment was made especially for these sextuplets (incubator, caffeine, special milk for premature babies ordered from abroad).

At the Gabriel Touré University Hospital, the news of the birth of the sextuplets mobilized the hospital management and a strong technical team to take care of the parturient and her sextuplets [12]. In Strasbourg, thirty people were mobilized for this extraordinary birth [18]. A good team including pediatricians and nurses was also mobilized for our case.

In the event of multiple pregnancies, relative neonatal morbidity and mortality still remains high; which requires good management of the pregnancy and perfect obstetric and pediatric collaboration. Good collaboration between the obstetrics department and the pediatric department characterized the HMK team when welcoming newborns. She also characterized the team of 6 pediatricians who followed the babies during their hospital stay.

Our premature babies had a low birth weight of around 1000 g, two of them died within the first 3 days. Indeed, children born from a multiple pregnancy are exposed to excess mortality and the causes generally put forward in the literature to explain this excess mortality are low birth weight, prematurity, hypotrophy and the complications inherent to the nature of multiple births [14] [19]. It is true that

such newborns born prematurely from multiple pregnancies in a family with a low socioeconomic level also run other long-term risks, notably growth retardation due to malnutrition and neurodevelopmental disorders, including cerebral palsy. The risk of the latter occurring increases with the number of fetuses [16]. These multiple births cause parental stress and long-term mortality and morbidity rates are significantly increased in children from multiple births, as some authors claim [20]. A good monitoring of somatic and psychomotor growth at least until school age remains essential in order to detect any disorders and provide solutions if possible. It is important to support the development of children born prematurely as soon as possible, knowing that moderate prematurity generates a whole host of difficulties, including sensory, motor, cognitive, behavioral, relational and emotional [21].

4. Conclusion

Newborns resulting from a high-order multiple pregnancy are newborns exposed to multiple risks if optimal care conditions are not available. However, they can survive even in countries with limited resources. There must be a strong commitment from public authorities, a prepared delivery and rigorous regular monitoring of babies from fetal life to the neonatal period by qualified and qualified personnel, engaged. Health authorities should provide well-equipped neonatal units to be prepared for any possible emergency at any time.

Conflicts of Interest

The authors declare no conflicts of interest.

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