

Quintuplet Pregnancy: A Rare Case after Clomiphene Citrate Therapy and Review of Literature

Bambara Moussa¹, Ouedraogo Issa², Yaméogo Relwende Barnabe¹, Tamboura Hassane³, Traore Alain Ibrahim⁴, Nikiema Zakari⁵, Nacro Boubacar⁵

¹Department of Obstetrics and Gynecology, University Joseph Ki-Zerbo, CUHSS, Bobo-Dioulasso, Burkina Faso

²Service of Obstetrics and Gynecology, University Joseph Ki-Zerbo, CHR-OHG, Ouayigouya, Burkina Faso

³Pediatric Department, University Joseph Ki-Zerbo, CHUSS, Bobo-Dioulasso, Burkina Faso

⁴Department of Surgery, University Nazi Boni, CUHSS, Bobo-Dioulasso, Burkina Faso

⁵Department of Radiology and Imaging, University Nazi Boni, CHUSS, Bobo-Dioulasso, Burkina Faso

Email: Mousbambara@yahoo.fr, Oued_issa2002@yahoo.fr, barnayam@yahoo.fr, tamboura14@gmail.com, boubanacro@yahoo.fr, nikiemazakari@gmail.com

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Abstract

Multiple pregnancies are increasing with the progress in Assisted Reproductive Technology. The authors report a case of quintuplet pregnancy after Clomiphene Citrate stimulation. This is a 28-year-old woman, G2, P1 with a 4-year-old child alive, who consulted for maternity desire. She was treated with Clomiphene Citrate at 100 mg daily for five days. The presence of a quintuplet pregnancy at 8 weeks + 5 days was found by ultrasound on 29/12/2018. During the follow up of the pregnancy, she presented pre-eclampsia from 24th week (TA 140/100 mmHg, significant proteinuria, edema of lower limbs). Methyl Dopa treatment was instituted. Tocolytic treatment with Salbumol was prescribed facing uterine contractions at 30 weeks. The patient had premature rupture of membranes at 34 weeks + 4 days, followed by uterine contractions. She had a cesarean section at the same day with the birth of five newborns alive. This is the first reported case in Burkina Faso.

Keywords

Quintuplet Pregnancy, Maternal and Neonatal Consequences

1. Introduction

Multiple pregnancies are universally recognized as pregnancies with a high risk

of complications for the mother and the fetus [1] [2]. Assisted Reproductive Technologies have contributed significantly to increase in the incidence of multiple pregnancies around the world. The risk of perinatal mortality and morbidity is high and often linked to prematurity [1] [3] [4]. This situation is sometimes a difficult problem for parents and obstetricians with the use of reduction techniques to improve the fetal and maternal prognosis [5] [6]. The first case of spontaneous quintuplet pregnancy in Africa was published in 1888 in Dufille in present-day Uganda by A. J. Mounteney-Jephson [7]. We report through this article a review of the literature on multiple pregnancies.

2. Our Observation

Mrs. S.S., 28 years old, G2P1, with a 4-year-old child alive, consulted on 1/10/2017 at the ABBEF (Burkinabe Family Welfare Association) Center of Bobo-Dioulasso for maternity desire.

In its antecedents, there is neither notion of twinning on the maternal side nor family defects.

Gynecological examination and examination of other systems were normal. She was treated with Clomiphene Citrate at 100 mg/day from day 3 to day 7 of the cycle. She was seen again in consultation with delayed menstruations and sympathetic signs of pregnancy. A requested ultrasound revealed a quintuplet pregnancy of 8 weeks + 5 days as of 29/12/2018 (**Figure 1**). It was followed by five prenatal consultations and ultrasound examinations (14 weeks, 22 weeks, 27 weeks, 30 weeks and 32 weeks).

She presented a syndrome of pre-eclampsia from the 24th week (blood pressure 140 mmHg/100 mmHg, significant proteinuria, edema of the lower limbs). A Methyl Dopa treatment was instituted with strict rest at home. Tocolytic treatment with Salbumol was undertaken to face the appearance of uterine contractions at 30 weeks. On 19/06/2018 at 33 weeks + 4 days, she presented a premature rupture of membranes followed by uterine contractions. She was admitted to the maternity of the Teaching Hospital Sanou Souro. On per vaginal examination, cervix was 4 cm dilated, the 1st fetus in breech presentation. She had a cesarean section in the presence of Anaesthesiologist doctor and his team (locoregional anesthesia) and the pediatric neonatologist for the management of newborns. We recorded five births (**Table 1**).

The five newborns were transferred to neonatology unit in the pediatric department for prematurity. The second male twin who weighed 1.000 grams died on the 5th day postoperatively due to neonatal infection.

3. Discussion

3.1. Frequency

The introduction of Clomiphene Citrate in a medical clinic in 1967 revolutionized the treatment of infertility in general and polycystic ovary syndrome in particular. Today, the use of Clomiphene Citrate alone or in combination with



Figure 1. Ultrasound image at 8 weeks + 5 days.

Table 1. Parameters of the quintuplets.

Number	Presentation	Liquor	Sex	Apgar Scores	Birth-Weight (g)
Quin 1	Breech	Clear	M	9/10	1850
Quin 2	Cephalic	Clear	M	9/10	1000
Quin 3	Cephalic	Clear	M	9/10	1900
Quin 4	Cephalic	Clear	F	9/10	1450
Quin 5	Breech	Clear	F	9/10	1800

gonadotropins (HMG) and the FSH hormone increases the number of pre-ovulatory follicles in patients with unexplained infertility [8]. Modern techniques of medically assisted procreation (IVF, ICSI) have significantly increased the frequency of multiple pregnancies nowadays.

Quintuplet pregnancies are associated with a high risk of perinatal complications with significant morbidity and mortality [9]. Their effective follow up requires early diagnosis with regular monitoring. It is estimated that 60% of triplets are due to fertility treatments, 90% of quadruplets to fertility treatments and 99% of quintuplets are due to fertility treatments [10].

Compared to single pregnancies, quintuplet pregnancies are associated with a high risk of hypertension, cervical incompetence, premature rupture of membranes, abruption placenta, placenta previa, first trimester bleeding, premature birth, anemia, stillbirths and perinatal deaths [11]. For our patient, we found pre-eclampsia at 24 weeks, and premature rupture of membranes at 33 weeks + 5 days.

In the literature, cases of spontaneous quintuplet pregnancies have been reported in India, Pakistan and Germany [3] [4] [12] [13] [14].

Many cases of quintuplet pregnancies have been obtained after embryo transfer following in vitro fertilization [15] [16] [17].



Figure 2. Quintuplets babies after cesarean section.

Several studies have reported the use of gonadotropins (HMG) with or without clomiphene citrate for multiple pregnancies, particularly for quintuplet pregnancies [18] [19] [20].

3.2. Maternal and Neonatal Consequences

The consequences of multiple pregnancies on maternal and child health are reported in the literature.

For the mother, there is an increased risk of mortality and morbidity in case of multiple pregnancies. A European study found that the maternal mortality rate during pregnancy, childbirth and the next forty-two days was 3 times higher for multiple pregnancies than for single pregnancies [21] [22].

Hypertensive disorders are common in multiple pregnancies, particularly in quadruplet and quintuplet pregnancies with incidences as high as 40% [23].

Gestational diabetes is also a common complication during multiple pregnancies. The risk of gestational diabetes has been shown to be higher in twin pregnancies than in single pregnancies [24]; women with triplets and more have a very high risk of gestational diabetes compared to women with twin pregnancies.

It also appears that multiple births have a medium and long-term effect on the psychological well-being of women [25]. The risk of developing depression several years after birth is higher in mothers with multiple pregnancies than in singleton mothers [26] [27]. Tiredness, stress, and difficulty meeting the demands of children may be the causes.

With regard to children's health, the risk of prematurity and low birth weight is very high among triplets and quadruplets [28].

In the United States in 2016, 93% of quadruplets (217 cases) and 100% of quintuplets were born before 34 weeks [29]. It is estimated that 25% to 30% of premature deliveries result from premature rupture of the membranes [30]. Cervical cerclage and tocolysis are means of recourse to reduce the number of premature deliveries.

Reduction techniques are widely used in developed countries to reduce the maternal and fetal risks of multiple pregnancies [1] [31] [32]. These techniques are few used in our developing countries and are often poorly accepted by pregnant women (Figure 2).

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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