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Delivery of Twin Pregnancy in African Settings

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Abstract

Introduction: Twin births are high-risk deliveries. Guidelines for managing these deliveries are generally developed by countries with a high economic status. The objective of this study was to evaluate the clinical practice of the department in relation to twin deliveries. **Methodology**: This is a study based on a retrospective analysis of obstetric records from the maternity ward of the Gabriel Touré University Hospital over a 20-year period. **Results**: In this series, 3.7% of deliveries were twin deliveries, 58% of which were premature. The average age of the mothers was 26.6 years. Vaginal delivery was the mode of delivery in 60% of cases. Attempts at vaginal delivery of T1 in breech presentation were successful in 53.3% of multiparous women and 25.5% of nulliparous women. Perinatal mortality was 12% for cesarean sections and 17% for vaginal deliveries. **Discussion**: Similar rates of 3.7% have been reported in several studies in Mali. Vaginal delivery was the main mode of delivery. Scheduled cesarean section improves fetal prognosis. More than half of vaginal delivery attempts for T1 breech presentation were successful. **Conclusion**: Despite the absence of national guidelines in Mali, clinical practice in this department complies with the recommendations of the French National College of Gynecology and Obstetrics (CNGOF) regarding the mode of delivery.

Keywords

Twin Delivery, Clinical Practice, Fetal Prognosis

1. Introduction

Twin births are a common occurrence in delivery rooms around the world. Their frequency varies from continent to continent, ranging from 0.49% to 2.4%. They

are more common in Asia and Africa. Nearly 80% of twin births occur in Asia and Africa. It is lower in European countries, particularly Eastern Europe. The twin birth rate is thought to have increased significantly worldwide during the five-year period 2010-2015 compared to the five-year period 1980-1985 [1]. In Africa, there are also regional variations between 1.3% and 4.94% [2] [3]. Twin pregnancies are high-risk pregnancies, and delivery can be fraught with complications. French recommendations on the delivery of twins favor a planned vaginal delivery combined with active management of the second twin, involving a high rate of obstetric maneuvers, with an interval between the two births usually less than ten minutes [4]. The mode of delivery for twin pregnancies is a subject of controversy in the literature. Twin delivery is a high-risk delivery because fetal accommodation phenomena are more complex. Each fetus must accommodate not only the uterus and pelvis, but also the other fetus. In addition, uterine overdistension is a risk factor for dynamic dystocia. Abnormalities will therefore be more frequent than in single-fetus deliveries. The clinical guidelines available for the management of twin pregnancies and deliveries generally come from countries with high economic levels [5]. The absence of national guidelines in low-resource countries such as Mali leads clinicians to resort to different guidelines from elsewhere. This encourages different practices depending on the external academic relationships of hospitals and obstetrics and gynecology departments. We initiated this study to evaluate the practice of twin deliveries at the Gabriel Touré University Hospital maternity ward, which is one of the three largest hospitals in Mali.

2. Methodology

This is a prospective study based on obstetric records of twin births admitted to the Obstetrics and Gynecology Department of the Gabriel Touré University Hospital Center in Bamako, Mali. This study covers the period from January 1, 2003, to December 31, 2023, *i.e.*, a period of 20 years. We selected the records of all patients whose twin pregnancies were delivered in the department at a gestational age greater than or equal to 28 weeks of amenorrhea or a fetal weight ≥ 1000 g. We excluded from this study cases with incomplete records and cases of intrauterine fetal death. Delivery was considered vaginal if both twins were delivered vaginally and cesarean if both twins were delivered by cesarean section. Delivery was considered mixed if the first twin was delivered vaginally and the second twin by caesarean section. Data were collected using a form, analyzed, and entered using SPSS and Word software. The chi-square test was used to compare proportions with a significance threshold set at 5%.

3. Results

During this study, we recorded 1869 twin births out of 50,564 deliveries, representing a rate of 3.7%. Of these cases, 45 were excluded due to incomplete information and 12 due to intrauterine fetal death. The average age of the mothers was 26.66 years, ranging from 14 to 45 years. Sixty-five percent were between the ages

of 20 and 34. Housewives accounted for 72% with a low level of education; 34% had no schooling and 42% had primary education. 7.3% of patients had a history of twins and in 2.8% of cases the pregnancy occurred following infertility treatment. In 58% of cases, delivery occurred before 37 weeks of amenorrhea. Delivery was vaginal in 60% of cases, by cesarean section in 39%, and mixed (vaginal and cesarean) in 1% of cases (17/1812). The first twin in the order of birth was in cephalic presentation in 80% of cases, in breech presentation in 15% of cases, and in transverse presentation in 5% of cases. The first twin was in breech presentation in 264 cases. Cesarean section was performed routinely in 44 cases (44/264) and vaginal delivery was attempted in 220 cases, with an overall success rate of 40.4% (89/220). The 120 attempts at vaginal delivery involved 120 patients with at least one previous vaginal delivery and 98 nulliparous women. The success rate was 53.3% (64/120) in multiparous women and 25.5% (25/98) in nulliparous women. For the vaginal delivery of the second twin (1095 cases), internal version was performed in 471/1095 cases, breech extraction in 313/1095 cases, the Mauriceau maneuver in 133/1095 cases, the Bracht maneuver in 41/1095 cases, and vacuum extraction or forceps in 106/1095 cases. Thirty-nine maternal deaths were recorded, representing a maternal mortality rate of 2% (39/1812). Hemorrhagic and hypertensive complications were the most common causes of maternal deaths, accounting for 32.8% and 30.2% respectively (**Table 1**).

Table 1. Prognosis for the newborn based on the order and mode of delivery of the twins.

Mode of delivery	Newborn status			
	Twin 1		Twin 2	
	Living	Deceased	Living	Deceased
Cesarean section	667	50	613	108
Vaginal delivery	887	208	914	177
Total	**1554**	**258**	**1527**	**285**

P = 0.000.

503 perinatal deaths were recorded, representing a rate of 14%. This rate was 12% for cesarean sections and 17% for vaginal deliveries.

The perinatal death rate for the first twin was 7% for cesarean sections and 19% for vaginal deliveries. For the second twin, it was 15% for cesarean sections and 16% for vaginal deliveries.

4. Discussions

In this study, twin births were common, with a rate of 3.7% and no clear trend over the last 20 years in this department. Similar or lower rates have been reported in studies conducted in various institutions in Mali and elsewhere in Africa. Buanga J. K. in 2000 in Senegal [2], Traoré C. in 2015 in Mali [6], and Zedini *et al.* in 2020 in Tunisia [7] reported lower rates of 1.3%, 1.3%, and 1.7%, respectively.

Comparable rates were reported in Mali by Camara N [8] at 2.6%, Haidara Y [3] at 4.9%, and Théra [9] at 2.54%. The population in this study was mainly composed of young women, with 53% under the age of 30. The average age was 26.6 years, with extremes of 15 and 45 years. This youthfulness of the reproductive population is noted in the majority of studies conducted in Africa [2] [5] [9] [10]. In our study, 7.3% had either a personal or family history of twins. Other authors in Mali, such as Traoré [6] and Haidara [3], have noted higher rates of twin history, with 32.7% in Bamako in Commune II and 24.2% in Mopti, respectively. Buanga [2] in Senegal reported a history rate of 30%. In 2.8% of cases, the pregnancy occurred following medically assisted reproduction (MAR). The use of medically assisted reproduction was noted by Buanga [2] in Senegal in 2% of cases, and by Haidara [3] and Traoré [6] in Mali in 4.8% and 4.1% of cases, respectively. In 58% of cases, delivery occurred before 37 weeks of gestation, and 34% of the children were transferred to the neonatal unit due to prematurity. This high rate of prematurity was linked to the frequency of maternal complications. Buanga [2] and colleagues reported a premature delivery rate ranging from 25% to 81% depending on the term of diagnosis of twin pregnancy, and Haidara reported a prematurity rate of 33.9% in Mali in 2010, with 31.2% of cases transferred to neonatal care. Vaginal delivery was the most common mode of delivery in 60% of cases. Thirty-nine percent of deliveries were cesarean sections and 1% were mixed deliveries of the second twin by cesarean section and the first twin by vaginal delivery. For breech presentation of the first twin in this series, cesarean section was performed routinely in 17% of cases and vaginal delivery was attempted in 83% of cases, with a success rate of 40.4%. This success rate varied according to parity. It was over 50% in multiparous women and 25.5% in nulliparous women.

In Mali, the systematic practice of scheduled cesarean sections was the consensus in cases of breech presentation of the first twin, regardless of the term of pregnancy and parity. Attempts at vaginal delivery in this study were therefore not scheduled. These were patients admitted during labor. No complications of twin entanglement were recorded during this study. In the literature, in accordance with the recommendations of the French National College of Gynecology and Obstetrics (CNGOF) in clinical practice [10], which do not indicate a systematic route of delivery in cases of breech presentation of J1 regardless of the term of pregnancy; several authors have reported attempts at vaginal delivery with varying success rates: Pascalet M *et al.* [11] reported a higher success rate of 95%; Caprais [8], 65.2% in 2022; 53.7% by Bourtembourg *et al.* [12] in 2012; 50% by Jolly [13] in 2016 and 43.8% by Bats *et al.* [14] in 2006. The delivery of the second twin vaginally was accelerated either by internal version or by breech extraction in 71.6% (784/1095) of cases. We recorded 39 maternal deaths with a mortality rate of 2%. Hemorrhagic and hypertensive complications were the main causes of maternal death. Haidara in Mali [3] reported a lower rate of 1.6%. An improvement in fetal prognosis was noted in cases of cesarean section compared to vaginal delivery. The perinatal mortality rate was 12% for cesarean sections versus 17% for vaginal deliveries (P = 0.000). This situation explains the more frequent use of

routine cesarean sections in cases of T_1 presentation in breech presentation.

5. Conclusion

In the literature, delivery in twin pregnancies is guided by guidelines. This study demonstrated that despite the absence of national guidelines in Mali, clinical practice in this department complies with the recommendations of the French National College of Gynecology and Obstetrics (CNGOF) regarding the mode of delivery.

Conflicts of Interest

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

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