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Delayed Interval Delivery (DID) in twin pregnancy: A rare case report (2 cases)

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Abstract

Background: Multifetal gestations are often complicated by spontaneous preterm birth. When this occurs before or proximate to the lower gestational age limit of ex utero survival, the neonates are at high risk for prolonged hospitalization, serious morbidity, and/or mortality. It is a rare practice aiming at prolonging gestation for second twin in case of pre viable birth of twin one [1]. Our objective was to identify factors related to successful DID of the second twin, among cases in which the interval after delivery of the first twin was above 24 h.

Results: We had total 2 cases of delayed delivery of twins. First case, Mrs. M, admitted at 27+6 weeks with PPROM, expelled twin 1 after 12 hrs of admission. Due to labour inertia, DID planned, delivered twin 2, after 3 days latency period. Twin 1 had neonatal death, twin 2 survived. In second case, Mrs. A, admitted with PPROM at 26+5 weeks, delivered twin 1 after 6 hrs of admission. DID planned, placenta of twin 1 left in situ. Steroids and tocolysis, prophylactic antibiotics given. Emergency LSCS done and delivered twin 2 in view of breech in labour, after 29 days of twin 1 delivery. In both cases twin 1 had NND. In first case, baby delivered with weight of 1.1kg, with 60 days of NICU and discharged with weight of 2.2 kg. In second case baby delivered with weight of 1.1kg, with 45 days of NICU (Because of more exposure to intra uterine environment) and discharged with weight of 2.4 kg.

Conclusion: DID of the second twin may prolong pregnancy and lead to a viable term of birth. There is a need to standardize the management of DID through additional research.

Keywords: Delayed interval delivery; twins; preterm delivery, PPROM

Introduction

Multiple gestation births typically occur within a short interval, but there are instances when this process can be extended for the benefit of the neonates. This delay, known as asynchronous delivery, can significantly improve survival rates and decrease morbidity for babies born later in the process. Asynchronous delivery, where the second twin is born more than 24 hours after the first, is a rare procedure with an incidence rate of 0.14 per 1,000 twin births [1]. This extended interval between births allows for better monitoring and care for each individual baby, ultimately leading to improved outcomes for the neonates involved.

Premature neonates are a common occurrence in twin pregnancies, prompting the need for innovative solutions such as delayed interval delivery. Despite the lack of consensus in existing literature, our experience sheds light on the best management strategies for this complex obstetrical issue.

Case report

Case 1: A 30 year old G2A1 was admitted to the hospital at the 27 weeks 6 days of gestational age with IVF conception, GDM on OHA, with cervical stitch in situ twin dichorionic, diamniotic pregnancy because of premature rupture of the membranes (PPROM) of the first amniotic sac. The patient was treated with bed rest, antibiotics, and corticosteroids. Cervical stitch removed. 12 hrs after admission (16 hrs of PPROM) spontaneously delivered of Twin A - a live BOY baby of weight 1.09 kg. Unfortunately died after 28 days of NICU stay in view of severe respiratory distress. Post delivery pain subsided, in view of labour inertia the delivery of Twin-B was deferred - Steroid prophylaxis continued. Successful attempt was made to ligate the umbilical cord, as high in the cervix as possible, in aseptic condition, and the placenta was left inside the uterus. HVS - showed Klebsiella growth, Urine culture sensitivity - also showed Klebsiella growth, treated mother with antibiotics (Inj. Colistin and Inj. Tigecycline) according

to sensitivity. 36 hrs later, had fever episodes, CRP and WBC elevated Neuroprotection initiated with MGSO4.

Labour was augmented with oxytocin and delivered TWIN B - a live preterm baby BOY of 1.13 kg with APGAR 8, 9 (3 days after delivery of twin 1). For mother Blood Culture and sensitivity on follow-up - no growth. Discharged in stable condition. Twin 2 received full resuscitation and immediate life-support intervention, admitted to the NICU. Discharged 90 days after birth, with discharging weight 2.2kg. On follow-up - Normal cognitive and neurological development.

Case -2

28 years old Primigravida at 26 weeks 5 days with OI conception, DCDA twins & Hypothyroidism admitted with PPROM AND PTL After 6 hours of admission spontaneously progressed and had PTB of Twin A - a live BOY baby weighing 820gm. Unfortunately died after 3 days of NICU stay in view of Intraventricular haemorrhage. As no signs of immediate morbidity to the mother, decision taken for Interval twin delivery, after informed and written consent. Tocolysis, antibiotics, and corticosteroids started. Fetal surveillance for Twin-2 was done with Intermittent NST, restricted mobilization, investigations were repeated as and when required USG monitoring done - suggestive of Twin-2 well-being. Emergency LSCS 21 days later (at 29 weeks 1 day) due to preterm labour and abnormal lie. Delivered a live preterm baby BOY weighing 1.19kg, apgar 5 and. The post operative recovery of the mother was uneventful. Twin 2 Stayed in the hospital for 60 more days and was discharged with weight of 2400g, in stable condition.

Discussion

Intentional Delayed Delivery (DID) was first reported by L. Carson in 1880 [2]. According to the literature, intentional delayed delivery of the second twin in twin pregnancies is of very rare occurrence, and there is an absence of large-scale studies on this topic. Despite its rarity, the incidence of DID has been on the rise due to the growing popularity of assisted reproduction techniques. There is a lack of agreement regarding the best management strategies for DID in twin pregnancies. The absence of large-scale studies makes it challenging to establish standard protocols for the procedure.

Every case presents a unique challenge that requires the most effective solution. Various treatments such as prolonged bed rest, cervical cerclage, tocolysis, antibiotics, and corticosteroids are often used to address complex and frequently debatable issues.

Antenatal complications are a common occurrence in multiple pregnancies, with twins being particularly vulnerable. The incidence of preterm premature rupture of membranes (PPROM) is twice as high in twins compared to singleton pregnancies. PPROM occurring before 26 weeks gestation affects over 1% of twin pregnancies and 0.5% of singleton pregnancies [3].

Preterm neonates born as a result of PPROM are at a high risk for prolonged hospitalization, serious morbidity, and even mortality. One possible reason for the premature rupture of the membranes could be an ascending infection from the vagina or cervix into the uterine cavity. It is crucial to closely monitor and manage antenatal complications in multiple pregnancies to ensure the best possible outcomes for both the mother and the babies. After the premature rupture of the membranes suspicion of an infection based on an increase in temperature, white blood cell count, and C-Reactive Protein (CRP) levels. CRP serves as a valuable prognostic index for early detection of chorioamnionitis [4].

Preterm birth can lead to an increase in the degree of disability, serious cognitive impairment, and neurodevelopmental complications in babies. The survival rate of babies born at 22 weeks is close to zero, but this rate significantly increases to almost 77% at 26 weeks. Gestational Age (GA) plays a crucial role in the survival of preterm babies, with the survival rate increasing by approximately 10% every week that the baby is conserved in utero.

When twin 1 is born before the period of viability, delayed delivery can provide an opportunity to optimize twin-2 with neuroprotection and steroid prophylaxis. This strategic approach can help enhance the health outcomes of both twins and improve their chances of survival and neurodevelopment. By considering the impact of gestational age on preterm birth, healthcare professionals can better tailor their care and interventions to support the well-being of these vulnerable infants.

The survival of the first born twin is strongly correlated with its gestational age and birth weight. For the second born twin, survival is influenced by the delivery interval between the first and second twin. The longer the interval, the higher the chance of survival. Additionally, the presence of obstetric problems during the latency period can impact the survival rate of the second twin [5].

The process of DID associate with Maternal risk factors like Infections, Haemorrhage, Chorioamnionitis, Placental abruption, Hysterectomy. Fetal complications like, distress, Acidosis, brain injury, hypoxia. So should outweighing risk v/s benefits for both mother and fetus while taking decision for delayed delivery [6].

Indications for Delayed Delivery: - DCDA gestations, Spontaneous cessation of contractions - Cervical closure - Absence of obvious signs of infection - Pregnancy is less than 28 weeks (or earlier depending on local NICU capabilities) - Parental approval obtained prior to intervention. Contraindications like monochorionic twin gestation, Complications like abnormal FHR pattern Signs of abruption, Evidence of infection, Operative delivery of the firstborn, fetal anomaly [7].

Attempts for delayed interval delivery should be made with the aim of prolonging the second twin's delivery until the 28th - 32nd week. It is essential to carefully consider the risks and benefits associated with prolonging the pregnancy beyond this timeframe. It is not recommended to continue the pregnancy after the 32nd week, as the high risk of sequels for both the mother and the fetus outweigh the expected benefits. Therefore, it is crucial for healthcare providers to carefully evaluate the appropriate timing for delivery in twin pregnancies [8]. In our case we applied the aforementioned pharmaceutical treatment with successful outcome, although more studies are required for better documentation.

Conclusion

Delayed Interval Twin Delivery is a valuable and feasible therapeutic option for managing the remaining fetus, leading to enhanced neonatal survival rates and reduced morbidity. This procedure has shown to increase the survival rate by around 10% every week that the fetus is retained in utero, making it crucial to select optimal candidates for this intervention. It is important to provide parents with comprehensive counselling about the potential risks and benefits associated with Delayed Interval Twin Delivery. The availability of support for the patient and her family from social services, psychology, and other support groups must be in place.

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