

Previale Premature Rupture of Membranes in Dichorionic Diamniotic Twin Gestation, Loss of Leading Twin, Emergency Cervical Cerclage and Ceaserean Delivery at Term

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Abstract

Introduction: Multiple pregnancies have a higher risk of premature delivery and a weakened cervix has been associated with it. In most cases, emergency cerclage has proved to be beneficial as the birth of the first twin is usually followed by the unavoidable delivery of the second twin and most fetus dies shortly after delivery. Studies have noted that delayed delivery of the second fetus in a twin pregnancy is an effective management choice and the use of cervical cerclage after the first delivery is associated with a longer inter-delivery interval. We present a case of previale premature rupture of membrane of a dichorionic diamniotic twin gestation leading to the loss of the leading twin and subsequently having emergency cervical cerclage for the second twin and caesarean delivery at term. **Case Presentation:** She was a case of a 29 years old, G₆P₁⁺⁴ with 1 living child at a gestational age of 17 weeks plus 5 days who initially was diagnosed with dichorionic diamniotic twin gestation following an early ultrasound but presented with a history of bleeding and passage of liquor per vaginam. Ultrasound done on admission showed cervical funneling and a stable state of the second twin. She subsequently had emergency cervical cerclage after stabilization on account of previale premature rupture of membrane of a dichorionic diamniotic twin gestation with the loss of the leading twin. A repeat ultrasound done prior to discharge showed closed cervical os and a good state of the fetus. She then

had elective caesarean delivery at term with a good fetomaternal outcome. **Conclusion:** Emergency cervical cerclage should be part of the options of management after stabilization in cases of previable premature rupture of membrane in a dichorionic or multichorionic gestation so as to save the viable once.

Keywords

Previable Premature Rupture of Membrane, Cervical Cerclage, Twin Gestation, Multiple Gestation, Multiple Pregnancy, Twin, Preterm Delivery, Cervical Incompetence, Cerclage, Interval Delivery

1. Introduction

Twin gestations are at an increased risk of premature delivery and may be due to a weakened cervix ([1] [2] [3]). Preterm birth is a major cause of perinatal mortality and long-term morbidity and multiple gestations account for 20% of preterm births ([4] [5]). Recurrent premature delivery occurs in 50% - 60% of women with prior premature delivery [6]. However, emergency cerclage placement in multiple gestations has been noted to reduce infant mortality by 77% for patients whose babies had a better chance of surviving preterm birth [3].

There are 2 main approaches in the management of a weakened cervix in pregnancy: Conservative approaches were that you do nothing and application of cerclage, but this latter use is controversial ([1] [2]). There are three main indications for cervical cerclage: histories of cervical incompetence, recurrent mid-trimester pregnancy loss and preterm premature rupture of fetal membranes prior to 34 weeks [5]. Emergency cerclage in a pre-viable pregnancy at extremely high risk of birth is even more controversial but recent data suggest that multiple pregnancies may fare as well as singleton pregnancies in this situation and that overall benefit is seen ([4] [7]).

The birth of the first twin is usually followed by the unavoidable delivery of the second twin and in case of immature birth, most fetus dies shortly after delivery [8]. In selected cases, when one fetus is delivered vaginally very prematurely, the remaining fetus can be retained in utero to hope for a delayed-interval delivery which may improve neonatal survival and decrease neonatal morbidity ([2] [9] [10] [11]). The first report of delaying the delivery of a second twin by 44 days was by Carson [11]. After that first observation, sporadic cases were published, in which a wait-and-see attitude was adopted [10]. However, Thomsen's paper in 1978 marked the change in the obstetric with the employment of tocolytic, cerclage and prophylactic antibiotics, in twin preterm premature rupture of membrane management [12]. Enakpenes *et al.* noted that the rate of preterm birth was lower in patients who receive prophylactic antibiotics and tocolytic than in women who did not prior to cerclage insertion [5].

Studies noted that delayed delivery of the second fetus in a twin pregnancy is an effective management choice and the use of cervical cerclage after the first de-

livery is associated with a longer inter-delivery interval ([1] [2] [10] [13] [14] [15] [16]). Namouz *et al.* noted that cerclage insertion did significantly better than bed rest in mean randomization-to-delivery interval, preterm delivery before 34 weeks, and compound neonatal morbidity [17]. It is on this note that we decided to publish this rare case success to add to available knowledge.


2. Case Presentation

Mrs. O.O was a 29 years old G₆P₁⁺⁴ with 1 living child, who is from Igbo tribe but resides at Enugu State Nigeria. She presented to our facility on 27/9/2021 with a last menstrual period of 23/5/2021, expected date of delivery of 30/2/2022 and gestational age of 17 week plus 4 days. An early ultrasound result [Figure 1] done in our facility at gestational age of 6 weeks plus 3 days which she came with showed dichorionic diamniotic gestation. Before then, she was regular with her routine antenatal care and all visits were uneventful. She complained of history of bleeding and drainage of liquor per vaginam of 3 hours duration. It was sudden and unprovoked. There was history of successive 4 previous pregnancies that ended up in complete abortions at 25 weeks, 23 weeks, 20 weeks and 19 weeks respectively in the last 5 years. There was no history of fever, trauma to the abdomen, abnormal vaginal discharge, urinary symptoms or lower abdominal pain. General examination was satisfactory with stable vital signs. Abdominal examination showed an 18 weeks uterine size with no tenderness and no contractions. Pelvic examination with speculum showed liquor in the posterior fornix, no other abnormality noted. There was no active bleeding. Cervix was open



Figure 1. Ultrasound report prior to the premature rupture of membranes showing twin gestation.

with the leading fetal limbs dangling out of the external cervical os. Delivery of the leading twin and its placenta was done and complete gently. She was admitted into the ward and placed on antibiotics, bed rest and tocolytic while in head down position. Pelvic ultrasound done 24 hours later [Figure 2] showed live singleton fetus with adequate liquor for gestational age, cervical Os was intact, 1.2 cm long, closed with an internal os funneling at 18 weeks gestational age. RVST, HbsAg, HCV and VDRL were negative. Her PCV was 30%, blood group was O Rhesus D+ and Genotype was AA. She was managed as a case of previable premature rupture of membrane on background cervical incompetence and worked up for emergency Cerclage. She subsequently had successful McDonalds Cerclage insertion 3 days later while on admission. Findings were: normal vulva



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Our Ref: _____ Your Ref: _____ Date: _____

Name: OCHOICHE, OLUCHI		Age: AD	Gender: MALE	Scan No:
Sender: SELF		Date: 28-09-2021		
Investigation	OBST. SCAN			

FINDINGS:

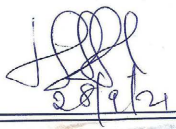
- Singleton intra-uterine and active fetus in breech presentation and oblique lie.
- The placenta is in mid posterior position grade I maturity .
- Fetus showed optimum cardiac pulsation at 141BPM.
- The liquor volume is adequate.
- The adnexa are bilaterally normal.
- The cervical OS is intact and closed with an internal OS funneling shape .



MATURITY:

BPD = 40.6mm	EDD = 26/02/22.
AC = 131mm	EFW = 258g
FL = 29.8mm	
AGA = 18WEEKS + 3DAYS	


IMPRESSION: Singleton Fetus @ 18th week+3days GA.



DR. M.A.S. EZENYIRIOHA (M.B; B.S; F.M.OG; F.I.C.S; KSC.)

Figure 2. Ultrasound report done on admission.

vagina, cervix was 60% effaced and about 1.5 cm dilated, there was mucous discharge covering the cervical os, no traces of blood was seen, the cord, placenta and membranes were not seen and there was no fluid collection in the posterior fornix. She was placed on antibiotics for 4 weeks (intravenous augmentin 1.2 g twice daily for 1 week, then orally for 3 weeks; intravenous metronidazole 500 mg thrice daily for 1 week, then orally for 3 weeks), tablet Drotaverine 80 mg tds for 1 week, tablet Duphaston 10 mg bd for 4 weeks and bed rest in the hospital for 3 days before discharge. In the course of her hospital stay, she was stable, no bleeding and no drainage of liquor and no evidence of pelvic infection prior to discharge. Repeat pelvic ultrasound after 5 weeks [Figure 3] showed live singleton pregnancy with adequate liquor for gestational age; the cervical os was intact

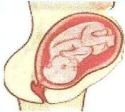


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Name: OCHOCHÉ, OLUCHI	Age: AD	Gender: FEMALE	Scan No:
Sender: PRIVATE	Date: 26 - 10 - 21		
Investigation	OBSTETRIC SCAN		

FINDINGS:

- Singleton intra-uterine and active fetus in oblique lie and cephalic presentation.
- The placenta is mid posteriorly seen.
- The liquor volume is normal for GA.
- Optimum cardiac pulsation of the foetus noted at 143BPM.
- The cervical OS is intact and closed.

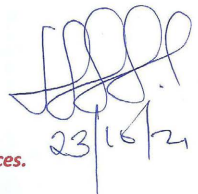


MATURITY:

BPD=54.9mm
AC=195mm
FL=42mm
AGA=23weeks + 1day
EDD= 21/02/2022.
EFW: 0.6Kg Gender: XY.

IMPRESSION: Alive Singleton Foetus @23weeks +GA.

We also offer EEG, ECG, X-RAY and Laboratory Test services.


23/10/21

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Figure 3. Ultrasound report done after cervical Cerclage insertion before discharge.

and closed at 23 week gestational age. She continued antenatal clinic 2 weekly till 36 weeks and weekly till 38 weeks. During the antenatal period she was only on routine hematinics and took antenatal prophylaxis. She was booked and subsequently had cervical Cerclage removal and elective caesarean section at 38 weeks on account of cervical incompetence with bad obstetric history at term. Intra-operative findings were: clean peritoneal cavity, well formed lower uterine segment, normally looking tubes and ovaries, a life male neonate weight 3.6 kg and APGAR score of 9¹, 10⁵, estimated blood loose was 500 mls. She was discharged home on the third day postoperative in good clinical condition. She was seen at 2 weeks and 6 weeks post natal clinic and both baby and mother did well. She subsequently had intrauterine contraceptive device inserted at 6th week post partum and discharged from clinic.

3. Discussion

Our case was a case of dichorionic diamniotic twin gestations that had preterm premature rupture of membrane at 17 weeks with delivery of the leading twin and its placenta. Emergency cerclage was placed to save the second twin; pregnancy was carried to term averting preterm birth and associated morbidities. This collaborated a study that noted that emergency cerclage placement in multiple gestation reduced infant mortality by 77% [3].

Cerclage was placed after stabilization as patient had history of recurrent midtrimester pregnancy loses and preterm premature rupture of fetal membranes. This corresponded to studies that noted emergency cerclage insertion as a management option ([1] [2]) and histories of recurrent midtrimester pregnancy loses and preterm premature rupture of fetal membranes prior to 34 weeks [5] as indications for preterm premature rupture of membrane with viable cyesis in twin gestation. Emergency cerclage in a pre-viable pregnancy is even more controversial but recent data suggest, that multiple pregnancies may fare as well as singleton pregnancies in this situation and that overall benefit is seen ([4] [7]). This was evident as our case recorded a significant success.

The birth of the first twin is usually followed by the unavoidable delivery of the second twin [8], however in our case, the use of cerclage saved the second twin. In selected cases, when one fetus is delivered vaginally very prematurely, the remaining fetus can be retained in utero to hope for a delayed-interval delivery which may improve neonatal survival and decrease neonatal morbidity ([2] [9] [10]). We delayed delivery of the second twin that lead to its survival without any morbidity. Several studies recorded success with use of tocolytic, cerclage and prophylactic antibiotics ([1] [2] [5] [10] [12] [13] [14] [15] [16]) as was observed in our index case leading to the success we are reporting. Namouz *et al.* noted that cerclage insertion did significantly better than bed-rest in mean randomization-to-delivery interval, preterm delivery before 34 weeks, and compound neonatal morbidity [17]. It was on these bases that our patient was discharged home after stabilization and cerclage insertion and we had good success without strict bed after discharge.

4. Conclusion

Emergency cervical cerclage should be part of the options of management after stabilization in cases of previable premature rupture of membrane in a dichorionic or multichorionic gestation so as to save the viable twin.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the editor-in-chief of this journal.

Conflicts of Interest

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

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