SAGE Open Medical Case Reports
Volume 11: 1–4

DOI: 10.1177/2050313X231200121
journals.sagepub.com/home/sco
Sage

Cerclage in complete placenta previa preventing preterm labor: A rare case report

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Abstract

Placenta previa often leads to antepartum hemorrhage, which warrants the patient for emergency room admission. The bleeding occurs mainly due to cervical dilation, which could be caused by cervical incompetence. Cervical cerclage has been considered as the primary treatment for cervical incompetence. However, evidence is lacking for its application in placenta previa. Here, we present a case of a 30-year-old pregnant woman diagnosed with complete placenta previa where a good obstetrical outcome could be achieved. The patient had antepartum hemorrhage during the 21st week of gestational age due to cervical dilation in a complete placenta previa case. An emergency cerclage using McDonald's technique was then performed, which prolonged the pregnancy to the 34th week of gestation. The patient had cesarean section and delivered a healthy baby girl weighing 2190 g. The mother and the baby had an uneventful recovery and were discharged after 2 days of hospitalization.

Keywords

Cervical cerclage, cervical incompetence, placenta previa, antepartum hemorrhage

Date received: 9 April 2023; accepted: 22 August 2023

Introduction

Antepartum hemorrhage (APH) is defined as bleeding that originates from the genital tract during pregnancy after 24 weeks of gestational age (WGA).[1] APH is commonly caused by placenta previa, placental abruption, or local bleeding (vulva, vagina, or cervix).[1–3] Placenta previa is defined as the implantation of a placenta that covers the internal ostium of the cervix, either completely or partially, that can be diagnosed through an ultrasound (US) examination.[4] APH in placenta previa is caused by spontaneous separation of placenta due to cervical dilatation.[5] Pregnancy complicated by placenta previa were more likely to have a preterm birth before 34 WGA (odds ratio 6.12; 95% confidence internal [4.29–8.72]), which might be due to APH.[6]

Cervical incompetence is marked by painless dilation of the cervix or shortening of the cervix before 24 WGA, which can be managed using cervical cerclage.[2] Cerclage involves making a suture or stitch around the cervix in an attempt to prevent early widening of the cervix.[7] One mechanism APH in placenta previa was due to cervical dilation[5] and the early opening ostium was associated with higher risk of massive hemorrhage during cesarean section.[1]

However, the application of cervical cerclage to placenta previa remains controversial.[1–3] In this report, we showed a good obstetrical outcome achieved through cervical cerclage

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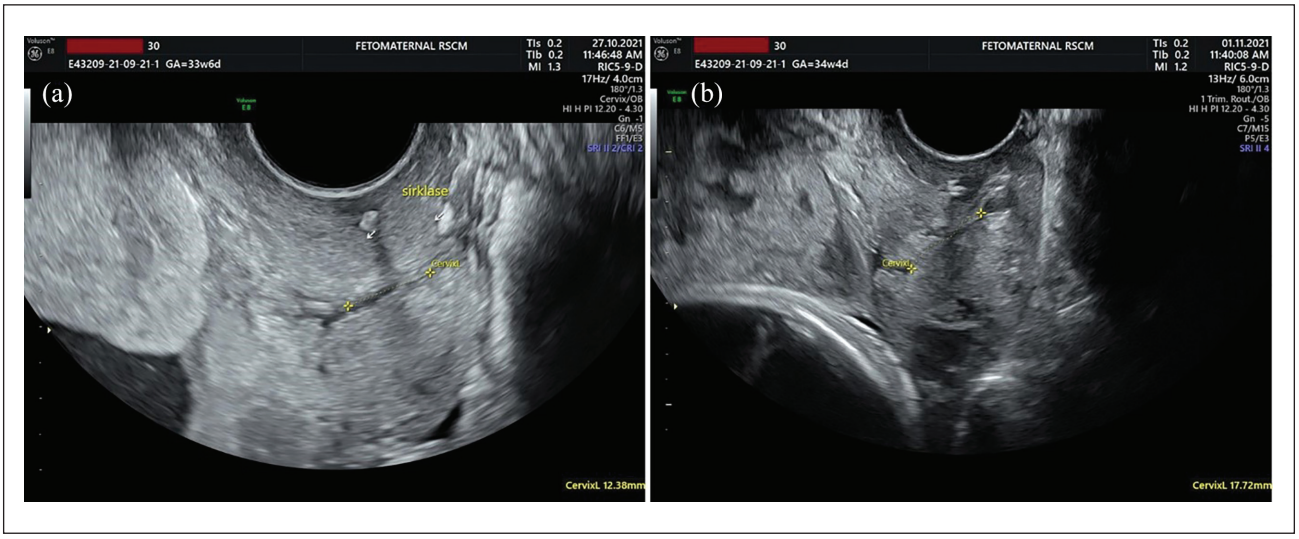

Figure 1. US picture: (a) Taken at 33^{+6} weeks of gestational age, cervical cerclage seen at the edge of the cervix with blood at the internal ostium; (b) taken at 34^{+4} weeks of gestational age, cervical cerclage could not be identified, the patient had spotting 1 day prior to the examination.
US: ultrasound; Sirklase: cerclage.

that was performed to a mother with cervical incompetence that is complicated by complete placenta previa.

Case description

A 30-year-old pregnant woman, G2P0100 21st WGA had a chief complaint of painless vaginal bleeding. Her first pregnancy was born at 27th WGA with a birth weight of 800 g. The patient went to regional hospital and the US examination revealed cervical shortening and placenta covering the internal ostium of cervix (data from medical record). She was diagnosed with cervical incompetence and total placenta previa, and an emergency cervical cerclage (McDonald) was performed at the regional hospital. No progesterone nor other drugs were given to her.

She was then referred to the National Hospital Polyclinic at the age of 33^{+6} WGA. She no longer had complaints of vaginal bleeding nor contraction. Feto-maternal consultant performed an US examination and found the cervical cerclage at the edge of the cervix (Figure 1(a)). She had no prior history of surgery and placenta accreta index score was 0, which excluded the possibility of placenta accreta spectrum.[8] The patient was then discharged.

The patient went for earlier check-up at 34^{+4} WGA due to vaginal spotting. Another US exam was performed, revealing that the cerclage had fallen out (Figure 1(b)). She had stable hemodynamics, no active bleeding, nor any contraction, thus she was discharged.

The following day, regular uterine contractions and bleeding occurred for 3 h prior to admission with a volume equivalent to two menstruation pads. The patient stated that the blood was bright red, no clumps, indicating fresh blood. On examination, the vital signs were within the normal limits, fetal heart rate was 144 bpm. On speculum examination, active bleeding

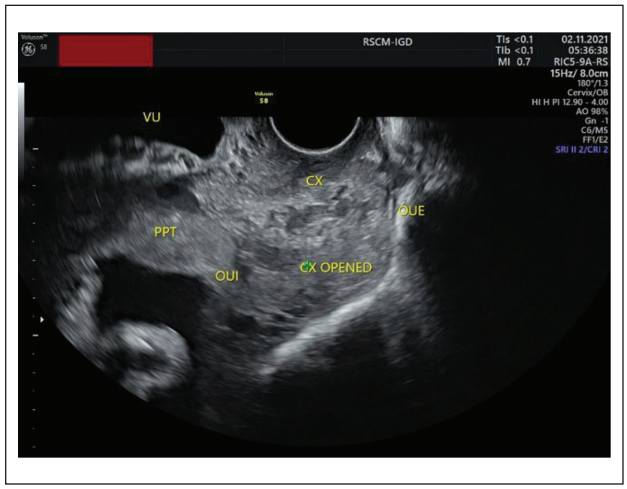

Figure 2. Ultrasound picture showing failure of cerclage and presence of blood clot in the internal ostium.
PPT: total placenta previa; VU: bladder; OUI: internal ostium of cervix; OUE: external ostium of cervix; CX: cervix.

was flowing from the external ostium. Abdominal US examination revealed an estimated fetal weight of 2333 g without any fetal abnormalities. Transvaginal US revealed dilated cervix with blood clot in the canal (Figure 2). The mother was slightly anemic with Hb level of 9.2 g/dL. Emergency cesarean sections were performed, and a healthy baby girl was born with a birth weight of 2190 g and APGAR Score of 9/10.[9] Intraoperative bleeding was 500 cc, with 100 cc of blood clot was found at retroplacental site and the surgery had no difficulties. After cesarean section, the mother and baby were in good condition with uneventful recovery. They were both discharged after 2 days of hospitalization.

Discussion

We reported a rare case that showed APH due to cervical dilation in placenta previa that is complicated with cervical incompetence. The bleeding in placenta previa is classically caused by intercourse, digital examination, or labor.[2] Applying cervical cerclage in placenta previa cases to reduce bleeding and prolong pregnancy has been proposed. However, there is not enough evidence that support the effectiveness of cervical cerclage in placenta previa. RCOG Green-top Guideline No. 27 stated that cervical cerclage is not supported by sufficient data to be recommended about its use as bleeding treatment or prevention outside clinical trials.[2]

Cervical cerclage was classically performed in cervical incompetence patients, but not in placenta previa patients.[10] Cervical cerclage is a relatively safe and effective procedure with no increased risk of APH during the pregnancy itself.[11] Two studies conducted on 18 placenta previa women proved its success in prolonging pregnancy, and no patients needed transfusions.[10,12] A study which included women in their 24th to 30th week of pregnancy with placenta previa applied the McDonald's technique for cervical cerclage and successfully prolonged the pregnancy with no fetal or maternal complications.[10] Another study which evaluated cervical cerclage as a temporary treatment for placenta previa, showed that the cerclage group had a better perinatal outcome and later gestational age at delivery compared with the control group.[12] A meta-analysis of three small randomized control trials in 114 women which evaluated cerclage showed that cerclage reduced the risk of delivery before 34 weeks, but due to lack of evidence, the conclusion has not been made yet.[13]

On the contrary, one study on 39 women with placenta previa showed that there was no difference between patients that were treated with (19 patients) or without (20 patients) cervical cerclage. In the case of prolonged pregnancy, the number of patients, bleeding, birth weight, or hospital stay remained the same between the two groups. Most of the studies stated that because of insufficient data, the recommendation to use cervical cerclage as a treatment for placenta previa remains unclear.[7,13,14]

One study has investigated predictors of cerclage failure and reported that previous uterine instrumentation is an independent predictor of cerclage failure.[15] Both placenta previa and cervical insufficiency increased the risk of premature labor and possible placental detachment from its low insertion, causing vaginal bleeding.[5] In this patient we hypothesize that the cerclage failed due to the process of preterm labor and cervical remodeling that follows. The reoccurrence of bleeding in this patient is suspected to be caused by failure of the cerclage, which leads to cervical dilation. One case report has shown the effectiveness of applying cross double McDonald cerclage which might benefit patients with APH.[16] In essence, this case report showed that cervical cerclage managed to prolong pregnancy by 91 days, which increased the likelihood of better fetal and maternal outcomes.

Conclusion

Bleeding in placenta previa is often caused by cervical dilation. This case report shows that the use of cervical cerclage could be used in cervical incompetence that is complicated with placenta previa as a temporary treatment to prolong gestation.

Author contributions

Y.B.S. and O.A.M. designed this case report and researched literature. V.P. and L.S. were involved in protocol development, gaining informed consent, and writing the article. V.P. wrote the first draft of the article. All authors reviewed and edited the article and approved the final version of the article.

Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

Ethics approval

Universitas Indonesia does not require ethical approval for reporting individual cases or case series.

Informed consent

Written informed consent was obtained from the patient(s) for their anonymized information to be published in this article. The authors have obtained signed informed consent from the patient.

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