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Rupture of the Cervix in Two Arabin Pessary Carriers with Intraamniotic Clinical Infection

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Introduction

Different management strategies have been tried to prevent cervical shortening, including cerclage and progesterone. Different pessary designs originally used for the treatment of genital prolapse have also been used for the prevention of spontaneous preterm birth [1]. In the late 1970s, Arabin designed a round cone-shaped pessary made of flexible silicone. Its dome-like design resembles the vaginal fornix, intending to surround the cervix as close as possible to the internal os. Clinical and ultrasound examinations have suggested that the pessary encompasses the cervix and changes the inclination of the cervical canal [2]. This change might prevent direct pressure on the membranes at the level of internal cervical os and on the cervix itself. As well, pessary supports the cervical mucus plug protecting the intrauterine cavity from ascending infections [2].

Cervical pessaries are thought to be a safe method with very few complications, even in twin pregnancies [3]. However, it is not free from detrimental effects intervention. In this case reports, we would like to report cervical lesions related to pessary use.

Case Report

A 31-year-old woman, twin bichorial-biamniotic pregnancy, gestational age 22 weeks, was admitted due to preterm premature rupture of membranes. She was an Arabin pessary carrier since 19 weeks of gestational age, due to a cervical length of 9 mm as measured by transvaginal ultrasound. Complementary exams show the first twin oligoamnios and infection signs in blood analysis.

The pessary was removed because of suspected clinical intra-amniotic infection. The woman spontaneously went into premature labor followed by the expulsion of both twins. The second placenta was retained even after oxytocin use. The woman was moved to the operating room. Before intervention, the rupture of the cervix was seen during examination (Figure 1.). As repair was not technically possible, a cervical flap was removed after placenta removal.



Figure 1: Cervical Ring Desertion

A 37-year-old woman, singleton pregnancy, gestational age 23 weeks, was admitted due to amniotic sac prolapse. She was an Arabin pessary carrier since week 20 of gestational age, due to cervical shortening (17 mm). The blood tests showed no signs of infection. An emergency cervical cerclage was not performed due to the position of the pessary with the prolapsed sac through it and the woman's desire to maintain the pessary. Intravenous prophylactic antibiotic treatment was initiated.

Two weeks later, 25 weeks and 2 days of gestational age, the woman started with fever (temperature: 39.4°), abdominal pain and malodorous leukorrhoea. An intrauterine fetal death was diagnosed. The pessary was removed and labor began. After fetal expulsion, a rupture of the cervix was observed and repaired.

Discussion

Clinical examinations such as magnetic resonance imaging have shown that the longer the pessary stays in place, the greater chance there is that the cervix will develop edema [4]. If labor starts, pessary must be removed to avoid increasing pressure on the cervix, with the associated risk of lesions or venous congestion. In the case of preterm rupture of membranes, pessary must be removed when chorioamnionitis can't be ruled out confidently even if uterine contractions are not present.

In these two cases rupture of the cervix was associated with pessary use and chorioamnionitis. Kalinka et al. reported a similar case in 2016 with no signs of chorioamnionitis [5]. Cervical damage may have been caused in our two cases due to pessary mechanical effects and uterine inflammation. The confluence of pessary mechanical effects and uterine inflammation may exponentially increase the risk of adverse outcomes.

Obstetricians have to be aware of potential risks associated with pessary use. The insertion of pessaries must follow strict protocols and informed consent must be always obtained from women. In the case of clinical chorioamnionitis, pessaries must be immediately removed.

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Conflict of interest

The authors declare that they have no conflicts of interest.

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