

Uterine cervical elongation and prolapse during pregnancy: An old unsolved problem

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Summary

Prolapse with elongation of the cervix is a rare complication of pregnancy. Prolapse that existed before onset of pregnancy will usually resolve spontaneously by the end of the second trimester, without further complications. A pessary can be used to protect the cervix. Prolapse that develops during pregnancy is usually first noted in the third trimester, and management consists of bed rest in a slight Trendelenburg position. In these cases, pessaries will probably not remain in place or prevent preterm labor. Patient discomfort, urinary tract infection, acute urinary retention, premature labor, and prenatal loss are still major complications, and prolapse usually persists or recurs after labor. Treatment depends on the severity of the condition and the patient's preference.

Key words: Cervical prolapse; Cervical elongation; Premature labor; Cervical trauma.

Introduction

Uterine cervical prolapse during pregnancy has an estimated incidence of one in 10,000-15,000 deliveries [1, 2]. In all, about 250 cases have been described in the medical literature. Only six cases have been reported since 1968 [3-7], and only three since 1990, perhaps owing to a decrease in the parity rate in the last decades.

Complications of cervical prolapse during pregnancy range from minor cervical desiccation and ulceration to preterm labor and, rarely, even maternal sepsis and death [1, 4, 5]. Cervical prolapse usually precedes pregnancy, though there have been reports of its development during pregnancy as well [4, 5]. When it is present before pregnancy, it is usually first noted in the second trimester and persists to the end of the second trimester, when the uterus becomes an abdominal organ and pulls the cervix up into the vagina [5, 6]. Therefore, the incidence of preterm labor in cervical prolapse is relatively low [5, 6]. The prolapse itself may be aggravated by the relatively high levels of cortisol and progesterone during pregnancy, which causes softening and stretching of the pelvic tissues [5]. When prolapse initially appears during pregnancy, it is usually first noted only during the third trimester [4, 5].

The management of cervical prolapse during pregnancy, labor, and delivery varies considerably [1-7]. During pregnancy, management is mainly conservative. The majority of affected patients deliver vaginally, though cesarean section may be indicated in some cases. In the postpartum period, surgical shortening of the cervix or hysterectomy may be necessary [4].

The aim of this report is to review the current literature on the etiology and recommended management of this relatively rare but complicated disorder.

Etiology and risk factors

The supravaginal cervix is normally attached to the tough obturator fascia on the side wall of the pelvis by Mackenrodt's (cardinal) ligament. Cervical prolapse occurs when Mackenrodt's ligament wears down and fails to support the uterus and vaginal vault. In the childbearing years, this is usually due to multiparity. Indeed, cervical prolapse is five times more common in multiparous than nulliparous women [1]. Therefore, the decrease in parity in the United States may account for the recent drop in the incidence of cervical prolapse. In nulliparous pregnant women, cervical prolapse is likely to be secondary to a congenital or developmental weakness of the supportive fascia [3]. Another major reason for cervical prolapse is traumatic labor and difficult or prolonged delivery, as in cases of macrosomic fetuses or operative vaginal deliveries [4, 5, 8].

Race may also be a factor. The incidence of cervical prolapse in India (1 in 547 deliveries) is higher than in the United States [9], and within the United States, African, Asian and Canadian-Indian women have a lower incidence of prolapse than Caucasian women [5]. These differences may be explained by inherited differences in the pelvic architecture, the strength of the supporting pelvic muscles and connective tissue, and the thickness of the fibrous tissue that develops in response to injury [8, 10].

Other causative factors of cervical prolapse are older age, which may contribute to weakening of the pelvic floor [6], and hypertrophic elongation of the cervix [9].

Complications

The main complications of cervical prolapse in pregnancy are as follows:

1. Mechanical cervical trauma due to elongation and hypertrophy of the cervix, often leading to cervical ulceration and infection [4].
2. Urinary tract infection and sometimes retention [11].
3. Spontaneous abortion and fetal death, especially in pre-existing prolapse, due to impaired blood flow induced by trauma and vascular congestion [5].
4. Premature labor and prenatal loss [4, 5], which may be due to the same underlying mechanism as in abortion, although there is no direct evidence that chorioamnionitis is a significant causative factor in prematurity. Cervical loss was associated with an 18% rate of prenatal loss in the studies of both Keettel [1] in 1941 and Piver and Spezia [12] 27 years later. Since then, improvements in perinatal care have successfully lowered the incidence.
5. Maternal sepsis and death are also rare today thanks to modern aseptic techniques and antibiotic therapy [4]. The last reported maternal death due to sepsis in a woman with prolapse was in 1925 [1].
6. Cervical dystocia may sometimes warrant Dührssen's incision of the cervix to facilitate delivery [12]. Cesarean section may be necessary in cases of a thick, trapped cervix (which can lead to rupture) [4].

Management

The management of cervical prolapse is mainly conservative [6]. Bed rest in a slight Trendelenburg position is recommended to lessen the edema. After resolution of the edema, replacement of the uterus, if possible, will often protect the cervix from trauma and desiccation, and decrease the incidence of preterm labor [4]. Placement of a Smith-Hodge or rubber donut-type pessary may protect the cervix from the local trauma of protrusion and allow the patient to ambulate and continue the pregnancy with minimal discomfort [4, 9]. According to cases reported within the last 20 years, however, prolapse that pre-existed before pregnancy will probably resolve with or without the pessary [5, 6], and prolapse that develops during pregnancy will be detected too late for the pessary to hold or to prevent preterm labor [4, 5]. Furthermore, when the cervix is trapped, the pessary provides little support [4]. Nevertheless, a pessary can prevent repeated prolapse if placed at 18-20 weeks' gestation [4]. In these cases, it can remain in place until labor, though periodic cleaning is advisable. It should be reinserted after labor to support the fascia and ligaments during involution [12]. The prolapsed cervix needs to be kept moist during pregnancy to prevent desiccation and ulcerations [6]. Cervical inflammation and ulceration should be treated with vaginal antibiotic cream [4]. There is no evidence that prophylactic systemic antibiotics are indicated, unless amniotic or systemic infection is clinically present [4].

Course of delivery

The majority of affected patients deliver vaginally; in 1968, Piver and Spezia [12] reported a spontaneous delivery rate of 84.8%, a significant increase from the 34.7% reported by Keettel in 1941 [1]. The use of Dührssen's incisions and forceps delivery in patients with cervical dystocia has markedly decreased in the last three decades, from 52% to 9% [5]. Cesarean section may be indicated for thick, trapped cervixes in order to enable labor and prevent uterine rupture [1]. In all the cases reported in the last 20 years, delivery was spontaneous and uneventful [4-6].

or [4, 5]. Management may consist of a pessary. If this fails to
cervix or hysterectomy (in cases when sterilization is requ-

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