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ELECTIVE CERVICAL ENCERCALGE OR RESCUE CERVICAL ENCERCLAGE: A DILEMMA?

Obstetrics & Gynaecology

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ABSTRACT

A 31-year-old lady with primary infertility of 7 years underwent in-vitro fertilization (IVF). She conceived a singleton pregnancy. She did not have any history of previous hysteroscopy or dilatation & curettage done in the past. Her antenatal course was uneventful. However at 26 weeks of pregnancy she complained of heaviness. She underwent an emergency sonography and was diagnosed with short cervix (2.3 cm). She was monitored by serial transvaginal sonographies (TVS) but had to undergo emergency cervical encerclage at 30 weeks as her internal os was open at that time. She continued till term and delivered a male baby of 2.9 kg with APGAR of 9/10 after removal of encerclage stitch at 37 weeks.

KEYWORDS

BACKGROUND

Cervical incompetence is defined as the inability of the cervix to retain fetus or maintain a pregnancy due to functional or structural defects in the cervix in the absence of uterine contractions or labor (painless cervical dilatation). Cervical insufficiency is a part of a large and more complex spontaneous preterm birth syndrome. This generally happens in the second or early third trimester, depending upon the severity of cervical insufficiency. This condition can be congenital or acquired. Defect during embryological development of Mullerian ducts, Ehlers-Danlos syndrome or Marfan syndrome may cause deficiency in collagen leading to cervical insufficiency. Amongst the acquired causes are cervical lacerations during previous childbirth, any surgery on the cervix like conization or forced cervical dilatation during the uterine evacuation in the first or second trimester of pregnancy or repeated dilatation and curettage or hysterosocpies. In majority of the women there is infection or inflammation leading to preterm labour. (1,2)

Transvaginal ultrasound examination is the gold standard for determining an incompetent cervix as per vaginal examination does not give information about the status of internal os unless the cervix is completely open. Supportive treatment such as cerclage sutures in carefully selected cases based on high index of suspicion can prevent infection and can maintain gestation to term to prevent the dangers of preterm labor.

Case Report

A 31-year-old women presented to us with primary infertility of 7 years due to polycystic ovaries and oligoasthenozoospermia (OATS) in her husband. She conceived with in -vitro fertilization (IVF) and all embryos were frozen. In the subsequent cycle she underwent frozen embryo transfer (FET) and conceived a singleton. She did not have any history of previous hysteroscopy or dilatation & curettage done in the past. Her antenatal course was uneventful with normal nuchal thickness sonography, anamoly scan and other investigations. However she came to the outpatient department (OPD) at 26 weeks of pregnancy with complains of heaviness and discomfort in the lower abdomen and vulva. Bowel bladder habits were normal. On examination her vitals were normal. Per abdomen examination revealed uterus of 26 weeks with no uterine contractions. The fetal heart rate was 140 beats per minute. There was no cervical discharge on per speculum examination and cervix was healthy. She underwent an emergency obstetric sonography along with TVS for cervical length assessment.

On TVS she was diagnosed with short cervix (2.3 cm) but internal cervical os was closed. In view of her symptoms she was started on additional progesterone support (vaginal progesterone suppository 300 mg twice a day) and advised bed rest for one week. She was monitored by repeat TVS after 10 days but the cervical length was same and she was continued on vaginal progesterone. In view of short cervix she was advised cervical length monitoring every 2 weeks by TVS. At 30.2 weeks of gestation her she again complained of heaviness in lower abdomen. Her TVS at that time showed that residual cervical length was only 1.32 cm (Fig 1,2).

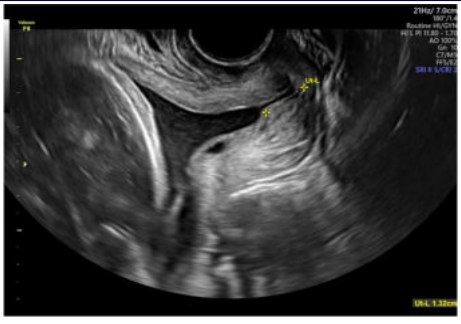

Fig 1: Short cervical length (1.32 cm) with open internal os on transvaginal sonography (TVS)

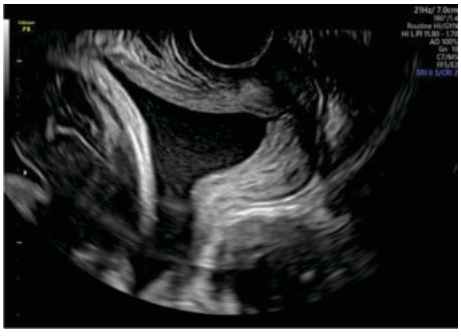

Fig 2: Short cervical length with open internal os on transvaginal sonography (TVS)

Patient was admitted. Head low position of the bed given and patient advised complete bed rest. Intravenous broad spectrum prophylactic antibiotics started along with oral probiotics. She underwent an emergency cervical encerclage the next day. Patient was given spinal anesthesia and put in modified lithotomy position. Anterior vaginal mucosa was infiltrated with normal saline (NS). Mucosa dissected and bladder pushed anteriorly.

Modified shirodkar's cervical encerclage stitch was taken. Cervicla encerclage stitch was taken after dissection of vaginal mucosa with mersilene tape (sterilized polyester fibre tape, 30cm x 5 mm). The knot of mersilene tape was placed posteriorly. Anterior vaginal mucosa sutured with chromic catgut no. 1-0 in interrupted stitches. She was discharged after 2 days and was advised rest for another 10 days.

Her repeat sonography showed that the cervical length was well maintained with the encerclage stitch in situ (Fig 3). She continued till term when around 35 – 36 week, she started having funneling of the cervix again (Fig 4). The encerclage stitch was removed at 37 weeks in the OPD. Following that she went in labour and delivered a healthy male baby of 2.9 kg with APGAR of 9/10. The postpartum course was uneventful.

Fig 3: Cervical with good length and encerclage stitch in situ on transvaginal sonography (TVS), post-surgery (33 weeks)

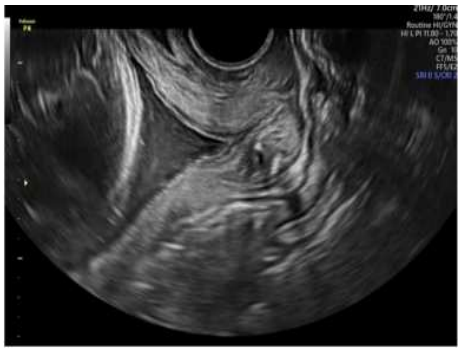

Fig 4: Cervical funneling with encerclage stitch in situ on transvaginal sonography (TVS) at 36 weeks

DISCUSSION

The cervix undergoes many changes throughout the antenatal, intranatal and post natal period. There is a complex remodeling process that happens during pregnancy which involves biochemical changes over a timeframe with interplay between cellular and extracellular sections followed by infiltration of inflammatory cells into the cervical stroma. Any impairment during this time can lead to premature cervical ripening or it's insufficiency ending in preterm labour or miscarriage. Studies have shown that both endogenous and exogenous factors, like uterine contractions or decidual / membrane activation leads to activation of this process of cervical incompetence. (1)

Cervical incompetence is the leading cause of late miscarriages. In majority of the cases diagnosis is often made retrospectively after the women had a second-trimester loss. Many women are assymptomatic during the early second trimester. Some may present with mild abdominal cramping, backache, pelvic pressure or vaginal discharge of whitish to pink colour or spotting. (2) Hence a high index of suspicion is very important. Also one needs to assess the cervix in these cases. A transvaginal sonography is the gold standard for the diagnosis of cervical incompetence during pregnancy.

Cervical incompetence can be diagnosed in these cases: 1) Pregnant women may come with sudden onset of symptoms and signs of cervical insufficiency like pain, bleeding etc. 2) She may come with prior history of second-trimester losses. (3) Incidental diagnosis of cervical incompetence on sonography during routine ultrasound. In majority of the cases, diagnosis is made retrospectively after multiple poor obstetrical outcomes have occurred. (3,1) The challenges in making the diagnosis are that relevant findings in prior pregnancy are often not well-documented and only a subjective assessment. Hence the need for routine transvaginal ultrasonographies in high risk women, those who have undergone previous cervical surgeries or hysteroscopies, D & C.

Previously cervical competence was checked during hysterosalpingography, imaging of balloon traction on the cervix radiographically, assessment with Hegar or Pratt dilators, etc to check for cervical resistance index were based on the functional anatomy of internal os. These were done in the non-pregnant state and are not used currently.

The diagnosis of cervical insufficiency is still challenging due to lack of objective findings and clear diagnostic criteria. Transvaginal sonography (TVS) of the cervical has emerged as a proven, clinically useful screening and diagnostic tool. This is of particular importance in high-risk women, depending on her history of previous second trimester abortions or preterm deliveries. On TVS cervical length is 25mm or lesser with or without funneling. Sometimes there can be ballooning of the membranes into a dilated internal os but with the closed external os as seen in our patient. Immediate management during this crucial period can help in preventing preterm delivery and salvage the life of the newborn.

Various conservative methods like restriction of activity, bed rest have not shown much efficacy. Progesterone supplementation has been tried in a few cases with limited benefits. (1,3) Surgery for cervical incompetence can be done transvaginally or transabdominally (laparoscopic encerclagae). McDonald and modified Shirodkar's cervical encerclage are the two most common vaginal surgeries for cervical incompetence. In McDonald encerclage four or five bites of no. 2 monofilament suture is taken as high as possible in the cervix, trying to avoid injury to the bladder or the rectum, with a placement of a knot anteriorly to facilitate its removal later on. During Shirodkar procedure there is dissection of vesical-cervical mucosa so as to place the encerclage stitch as close to the cervical internal os as possible. During an emergency, if the external os is also open, she is placed in Trendelenburg position. The bag of membranes is deflected cephalad towards the uterus by placing a Foley catheter. (4,5,6) This is inflated with a 30 cc balloon through the cervix. This balloon is deflated gradually as the cerclage suture is tightened. (3,6) Transabdominal cerclage is done in selected cases of severe anatomical defects of the cervix with prior failure. It can be performed laparoscopically also. (11) The disadvantage is that it will require laparotomy for removal of the suture or delivery of the fetus at term. (2,7,8,9,10,11)

CONCLUSION

Cervical incompetence still remains one of the important causes of preterm deliveries or late second trimester abortions. Early identification based on previous history of any cervical surgeries, hysterosocpies or D&C should alarm the clinician. Also the routine use of transvaginal ultrasonography along with the anomaly scan may help us in early identification of this condition in asymptomatic high risk women. (5,6,11) One should also be aware and not ignore of clinical symptoms like heaviness in the lower abdomen, discharge from vagina etc in these pregnant women. (11) These women must undergo clinical examination by an obstetrician as well as TVS for cervical length and status of internal os at the earliest to prevent catastrophe. Early identification of these symptoms and their appropriate management can prevent preterm delivery and prevent neonatal mortality and improve neonatal morbidity. (5,6,11)

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