

Cervical incompetence

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ABSTRACT

Cervical insufficiency is the inability of the cervix to retain fetus, in the absence of uterine contractions or labor (painless cervical dilatation), owing to a functional or structural defect. It is cervical ripening that occurs far from the term. Cervical insufficiency is rarely a distinct and well defined clinical entity but only part of a large and more complex spontaneous preterm birth syndrome. This activity reviews the cause and presentation of cervical incompetence and highlights the role of the interprofessional team in its management.

Keyword: Cervical incompetence

I. INTRODUCTION

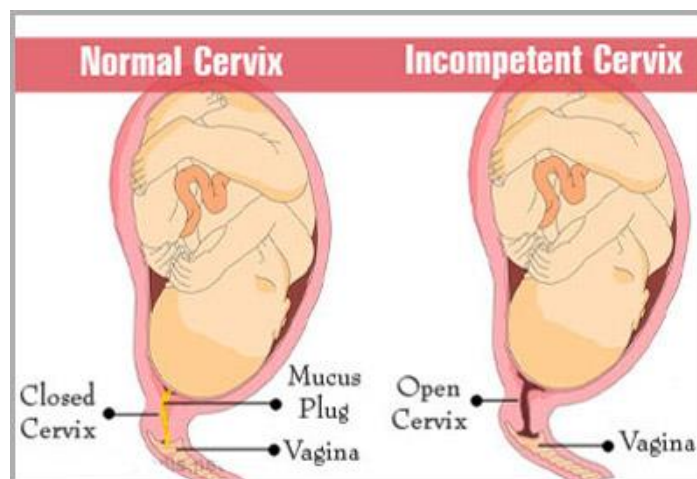
An incompetent cervix happens when weak cervical tissue causes or plays a part in a premature birth or the loss of a healthy pregnancy. An incompetent cervix also is called cervical insufficiency. The cervix is the lower part of the uterus that opens to the vagina. Before pregnancy, it's usually closed and firm. As pregnancy goes on and you get ready to give birth, the cervix slowly changes. It softens, gets shorter and opens. If you have an incompetent cervix, it might begin to open too soon causing you to give birth too early.

DEFINITION

A Cervix that has an abnormal tendency to dilate and so many not be able to keep a fetus from being spontaneously aborted (miscarried).

(Or)

Cervical incompetence is also called cervical weakness or cervical insufficiency, is a medical condition of pregnancy in which the cervix begins to dilate (widen) to efface (thin) before the pregnancy reached term.



INCIDENCE

It is estimated that cervical incompetence will complicate anywhere from 0.1% to 2% of all pregnancies and is thought to be responsible for approximately 15% of habitual immature deliveries between 16 and 28 weeks of gestation.

History and Physical:

Cervical insufficiency is a well -recognized cause of late miscarriage, and the diagnosis is often made retrospectively after a woman has had a second-trimester loss. Most of the women have no symptoms or only mild symptoms beginning in the early second trimester. These include abdominal cramping, backache, pelvic pressure, vaginal discharge which increases in volume, vaginal discharge which changes from clear to pink, and spotting.

The diagnosis of incompetent cervix is usually made in three different settings:

- Women who present with a sudden onset of symptoms and signs of cervical insufficiency
- Women who present with a history of second-trimester losses consistent with the diagnosis of cervical incompetence (history-based)
- Women with endovaginal ultrasound findings consistent with cervical incompetence (ultrasound diagnosis)

The digital or speculum examination reveals a cervix that is dilated 2 cm or more, effacement greater than or equal to 80%, and the bag of waters visible through the external orifice (os) or protruding into the vagina. The diagnosis is frequently made on the basis of history retrospectively after multiple poor obstetrical outcomes have occurred.

Evaluation

Cervical incompetence is primarily a clinical diagnosis characterized by recurrent painless dilatation and spontaneous midtrimester birth, usually of a living fetus. The presence of risk factors for structural cervical weakness supports the diagnosis. The challenges in making the diagnosis are that relevant findings in prior pregnancy are often not well-documented and only a subjective assessment.

Most of the earlier reported tests for cervical incompetence including hysterosalpingography and imaging of balloon traction on the cervix radiographically, assessment of the patulous cervix with Hegar or Pratt dilators, balloon elastance test, and graduated cervical dilators which are used to calculate a cervical resistance index were based on the functional anatomy of the internal os in the non-pregnant state are of historical interest and because none have been validated, none of these tests are in common use.

The diagnosis of cervical insufficiency is challenging because of the lack of objective findings and clear diagnostic criteria. Cervical ultrasound has emerged as a proven, clinically useful screening and diagnostic tool in the selected population of high-risk women based on an obstetrical history of a prior (early) spontaneous preterm birth. The transvaginal ultrasound typically shows a short cervical length, less than or equal to 25 mm, or funneling, ballooning of the membranes into a dilated internal os but with the closed external os.

RISK FACTORS FOR CERVICAL INCOMPETENCE

Many women don't have a known risk factor. Risk factors for cervical insufficiency include:

Cervical trauma. Some surgical procedures used to treat cervical abnormalities associated with an abnormal Pap smear can result in cervical insufficiency. Other surgical procedures such as a TD&CT could also be associated with cervical insufficiency. Rarely, a cervical tear during a previous

Labor and delivery could be associated with an incompetent cervix

Race. Black women seem to have a higher risk of developing cervical insufficiency. It isn't clear why.

Congenital conditions. Uterine abnormalities and genetic disorders affecting a fibrous type of protein that makes up your body's connective tissues (collagen) might cause an incompetent cervix. Exposure to diethylstilbestrol (DES), a synthetic form of the hormone estrogen, before birth also has been linked to cervical insufficiency.

CAUSES

The cause of cervical incompetence is unknown.

However, it is associated with:

- Trauma to the cervix during Dilation and Curettage
- Induced abortion
- Congenital weakness of the cervix
- Conization
- Cauterization
- Fetal exposure to stilbestrol in utero.

DIAGNOSIS

Attempts to make a more precise diagnosis of cervical incompetence have not been successful.

However, the following may be done to diagnose cervical incompetence:

- Documenting a more widely dilated internal cervical os than is normal.
- Hystography– radiography of the uterus after instillation of a contrast medium.
- Pull through techniques using inflated folley’s catheter balloons which is readily accepted without resistance.
- Uterine ultrasonography – this may only exhibit moderate success.
- Repeated PPROM- Spontaneous rupture of membranes in pregnancy may indicate cervical incompetence.
- Cone biopsy – of the cervical tissue may indicate congenital weakness of cervix.
- Habitual abortions – these occurs commonly in the second trimester or early third trimester.

Investigations

Premenstrual hystrocervicography (US)

- It mainly shows typical funnelling of the internal os

Non-pregnant state:

- The internal os allows the passage of No.8 Hegar’s cervical dilator or Folley’s catheter filled with 1 ml water without resistance

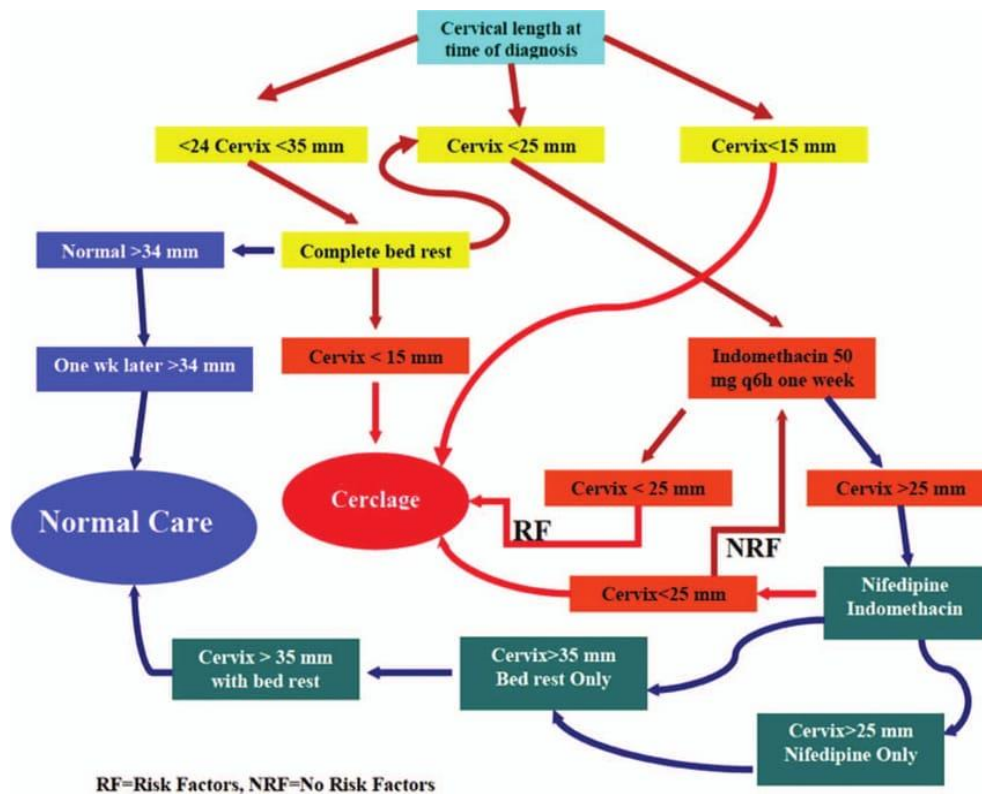
In pregnancy:

- Transvaginal ultrasound is the ideal method to follow up and detect early incompetence

Treatment /Management

❖ **Prevention of preterm delivery:** several techniques have been applied in attempts to prolong multifetal gestations.

❖ These include bed rest, especially through hospitalization, prophylactic administration of betamimetic drugs, and prophylactic cervical cerclage.



❖ The treatment of cervical incompetence is surgical, consisting of reinforcement of the weak cervix by some type of purse-string suture.

❖ The rationale for surgery is that cerclage compensates for inherent cervical weakness.

❖ Bleeding, uterine contractions, or ruptured membranes are usually contraindications to surgery.

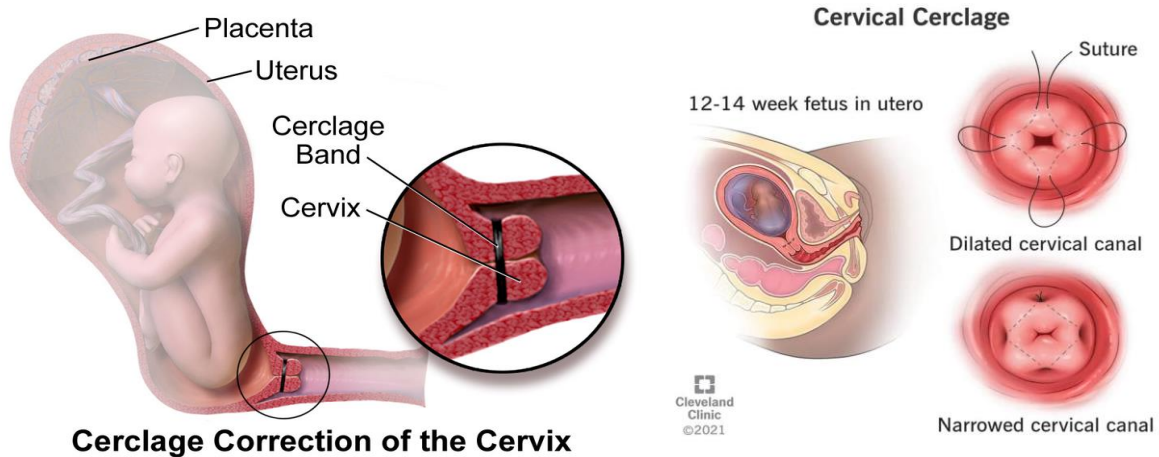
- ❖ Corticosteroids: A course of corticosteroids is administered to women at 24 to 34 weeks of gestation to decrease the risk of complications associated with preterm delivery.

Preoperative evaluation

- ❖ Cervical cerclage refers to a variety of surgical procedures in which sutures, wires, or synthetic tape are used to reinforce the cervix and thereby maintain its competence
- ❖ Cerclage should generally be delayed until after 14 weeks so that early abortions due to other factors will be completed.
- ❖ There is no consensus as to how late in pregnancy the procedure should be performed.
- ❖ The more advanced the pregnancy, the more likely surgical intervention will stimulate preterm labor or membrane rupture.
- ❖ For these reasons, some clinicians prefer bed rest rather than cerclage some time after midpregnancy.
- ❖ Waiting until 13 to 16 weeks of gestation also permits evaluation for some fetal anomalies and chorionic villus sampling prior to the procedure, if indicated.
- ❖ A prophylactic procedure is usually performed by 16 weeks of gestation.
- ❖ We usually do not perform cerclage after 24 to 26 weeks.

Cerclage procedures

- ❖ Cerclage and restriction of activities: These are the treatment of choice for incompetent cervix.
- ❖ A variety of suture materials including a 5-mm Mersilene band can be used to create a purse-string type of stitch around the cervix, using either the McDonald or Shirodkar method.
- ❖ Cerclage should be undertaken with caution when there is advanced cervical dilation or when the membranes are prolapsed into the vagina.
- ❖ Cervical cultures for gonorrhoeae, chlamydia, and group B streptococci should be obtained before or at the time of cerclage
- ❖ Three types of operations are commonly used during pregnancy.
 - One is a simple procedure recommended by **McDonald (1963)**
 - The second is the more complicated **Shirodkar operation (1955)**
 - The third is the **modified Shirodkar procedure**
- ❖ There is less trauma and blood loss with both the McDonald and modified Shirodkar procedures than with the original Shirodkar procedure.
- ❖ Success rates approaching 85 to 90 percent are achieved with both McDonald and modified Shirodkar techniques
- ❖ The modified Shirodkar procedure is often reserved for previous McDonald cerclage failures and structural cervical abnormalities.
- ❖ Success rates are higher when cervical dilatation was minimal and membrane prolapse was absent.
- ❖ Transabdominal cerclage placed at the level of the uterine isthmus has been recommended in some instances, especially in cases of anatomical defects of the cervix or failed transvaginal cerclage
- ❖ Cerclage removal: The cerclage is removed electively at 37 to 38 weeks or immediately with the onset of premature labor to avoid cervical laceration and/or uterine rupture.
- ❖ A McDonald cerclage usually can be cut and removed in the office without analgesia
 - ⇒ Management is surgical by means of a cervical cerclage (stitch). The diagnosis is difficult, and the surgery is often performed unnecessarily.
 - ⇒ Sonography should be done prior to cerclage to confirm live fetus and to rule out anomalies



Differential Diagnosis

- Abruptio placentae
- Fetal growth restriction
- Multifetal pregnancy
- Preeclampsia
- Premature rupture of membranes
- Preterm labour

Complications

- ❖ Infections tend to be much less frequent when cerclage was performed by 18 weeks.
- ❖ When performed much after 20 weeks, there was a high incidence of membrane rupture, chorioamnionitis, and intrauterine infection.
- ❖ With clinical infection, the suture should be cut, and labor induced.

Reference

- [1]. Lee KN, Whang EJ, Chang KH, Song JE, Son GH, Lee KY. History-indicated cerclage: the association between previous preterm history and cerclage outcome. *Obstet Gynecol Sci.* 2018 Jan;61(1):23-29
- [2]. Negrete LM, Spalluto LB. Don't be short-sighted: cervical incompetence in a pregnant patient with acute appendicitis. *Clin Imaging.* 2018 Sep-Oct;51:35-37. [[PubMed](#)]
- [3]. Gonzales SK, Adair CD, Torres C, Rodriguez ED, Mohling S, Elkattah R, DePasquale S. Robotic-Assisted Laparoscopic Abdominal Cerclage Placement During Pregnancy. *J Minim Invasive Gynecol.* 2018 Jul-Aug; 25(5):832-835. [[PubMed](#)]
- [4]. Brown R, Gagnon R, Delisle MF. No. 373-Cervical Insufficiency and Cervical Cerclage. *J Obstet Gynaecol Can.* 2019 Feb;41(2):233-247. [[PubMed](#)]
- [5]. D. C. Dutta, *Textbook of Obstetrics*, 9th edition, Jaypee brothers publications
- [6]. Tyan P, Mourad J, Wright B, Winter M, Garza D, Smith R, Brink J, Wei C, Moawad G. Robot-assisted transabdominal cerclage for the prevention of preterm birth: A multicenter experience. *Eur J Obstet Gynecol Reprod Biol.* 2019 Jan; 232:70-74. [[PubMed](#)]
- [7]. Wang HL, Yang Z, Shen Y, Wang QL. [Clinical outcome of therapeutic cervical cerclage in short cervix syndrome]. *Zhonghua Fu Chan Ke Za Zhi.* 2018 Jan 25;53(1):43-46. [[PubMed](#)]