

Kofinas Perinatal

Providing Care to the Unborn ®

CERVICAL INCOMPETENCE MANAGEMENT GUIDELINES

Alexander D. Kofinas, MD

Director, Kofinas Perinatal

Associate Professor, Clinical Obstetrics and Gynecology

Cornell University, College of Medicine



Diagnosis of cervical incompetence

1. Patients with history of cerclage in a previous pregnancy
2. Patients with history of two or more midtrimester pregnancy losses in the absence of prior documented labor or placental separation.
3. Well documented second trimester pregnancy loss (12 to 24 weeks gestational age) following progressive painless cervical dilatation with or without preterm premature rupture of membranes (P-PROM)^{**} i.e. documented cervical changes by sonogram in previous examination during the current pregnancy.
4. Well-documented second trimester pregnancy loss (12 to 24 weeks gestational age) following spontaneous rupture of membranes in the absence of labor.
5. Patients with ultrasonic findings consistent with cervical incompetence † (prior to 28 weeks gestation):
 - 5.1. Cervical shortening with development of funneling.
 - 5.2. No evidence of measurable cervix with or without dilatation.

**** Caution!! Fetal demise documented with ultrasound with subsequent spontaneous abortion at any time between 12 and 26 weeks gestation should not be considered a risk factor for incompetent cervix.**

† Patients with cervical shortening by ultrasound but no funneling are at increased risk for preterm delivery but not incompetent cervix. These patients are more likely to do well with preterm labor management and not by means of cerclage.

Conditions associated with increased risk for incompetent cervix and requiring close pregnancy follow-up:

1. Poorly documented second trimester pregnancy loss not consistent with the typical presentation of incompetent cervix.
2. Second trimester pregnancy loss with painful contractions (many patients with incompetent cervix develop labor after the cervical dilatation was established in a painless fashion. Also, many patients have a combination of preterm labor and incompetent cervix).
3. Patients with history of DES (diethylstilbestrol) exposure while in utero.
4. Preterm delivery of a viable fetus.

Kofinas Perinatal

Providing Care to the Unborn ®

5. History of precipitous labor.
6. Known cervical trauma after delivery.
7. Second trimester induced abortion or multiple induced first trimester abortions.
8. History of cervical conization.
9. Maternal Thrombophilia
10. Patients with history of infertility
11. Patients suffering from PCO syndrome and excess androgen production

All patients diagnosed with an incompetent cervix should be offered a cerclage at the time defined by the following classification:

1. All patients with known history of cervical incompetence should have an “**elective cerclage**” between 12 and 14 weeks.
 - 1.1. A transvaginal ultrasound should be performed at 11-12 weeks to confirm viability and r/o major congenital anomalies.
 - 1.1.1. NT and ultra-screen test (screening for Down syndrome) should be offered to all patients prior to cerclage.
 - 1.2. Patients at risk for chromosomal abnormalities should be offered CVS (chorionic villus sampling) at 11-12 weeks and have the cerclage after the results are known.
2. All patients with progressive cervical changes documented by transvaginal sonography in the absence of other risk factors should have an “**urgent cerclage**” within the next 24 to 72 hours.
3. All patients with a dilated cervix in the absence of PTL prior to 28 weeks gestation with or without protruding membranes may be candidates for an “**emergency cerclage**”.
4. All patients with cervical shortening not responding to Indomethacin should have a cerclage within the next 2-3 days.

Usage of tocolytics in the management of incompetent cervix with preterm labor

Kofinas Perinatal

Providing Care to the Unborn ®

To achieve optimal care, all patients undergoing urgent or emergency cerclage should receive tocolysis prior to the procedure; the choice of the tocolytic may be left to the managing physician:

Recommendations

1. Indomethacin:

1.1. 100 mg rectally on call to OR followed by 50-mg p.o. every 6 hours for 72 hours.

If the patient has been on Indomethacin prior to the cerclage, then treatment will be decided according to ultrasound and Doppler findings (amniotic fluid volume and fetal ductus arteriosus).

1.1.1. If needed, higher doses can be used and/or for longer than 72 hours. In these extreme cases, fetal ductus arteriosus Doppler is indicated to r/o premature ductal closure. If such closure is identified indomethacin should be decreased or discontinued immediately.

2. Magnesium Sulfate as per preterm labor guidelines

2.1. Magnesium may be used for 24 to 48 hours with inpatients if oral tocolysis is contraindicated for any reason.

3. **Outpatient management:** Because most of the patients with short cervix that require cerclage placement experience preterm labor, we treat all our patients with a combination of Indomethacin alternating with Procardia XL according to the Kofinas Perinatal preterm labor protocol. In select patients, we may use 17-a-hydroxyprogesterone caproate intramuscularly weekly as an adjunct treatment.

Usage of prophylactic antibiotics during the perioperative period for use in patients undergoing emergency cerclage

The following conditions may warrant the use of prophylactic antibiotics during the perioperative period:

1. Cervical dilatation with exposure of the membranes to the vaginal environment.
2. Cervical dilatation with hour-glassing membranes.
3. Patients with copious and malodorous vaginal discharge.
4. Patients with evidence of chronic cervicitis.

Kofinas Perinatal

Providing Care to the Unborn ®

5. Patients with history of prior genital infection in the absence of a negative current culture.
6. Patients with positive Group B streptococci history or culture.

Parenteral antibiotics may be used during hospital stay and oral antibiotics for as long as 3-4 days after the procedure if clinically indicated. The antibiotics of choice are:

1. Ampicillin 2 gm IVPB prior to surgery (at induction) and q 6 hours there after.
2. Gentamicin (according to established guidelines by the Pharmacy and Therapeutics Committee) STAT and q 8 hours.
3. Clindamycin 600 mg IVPB STAT and q 6 hours.
4. A combination of Ampicillin with Erythromycin is also appropriate.

Post-op follow-up

All patients with cerclage should be scheduled to have transvaginal sonography in the next 24 to 96 hours to assess the quality of placement of the cerclage and document the cervical length. Subsequently, the patients should:

1. Be at complete bed rest until changed by the perinatologist.
2. Have weekly transvaginal sonographic evaluations of the cervix to determine cervical stability.
3. Patient mobilization may be tailored to each patient's life style (personal needs and capabilities); if the cervix remains stable, as demonstrated by sonography, patient's activities may then be modified to normal if appropriate.
4. Cerclage revision may be performed up to 3 times if clinically warranted and the cervix is judged to be sufficient
5. Remember that cerclage failure may be attributable to preterm labor and more attention should be paid to this as a contributing factor of cerclage failure.

Kofinas Perinatal

Providing Care to the Unborn ®

Appendix A

Risks associated with cerclage placement to be used during the informed consent process

The specific risk for pregnancy loss based on the table provided in appendix B should be clearly explained to the patient in order for her to compare it with the risks of the cerclage placement:

Procedure related risks:	Disease related risks:
Usual Anesthetic risks (Minor with spinal anesthesia which is preferable)	Pregnancy loss
Minor Vaginal bleeding	Premature rupture of membranes
Maternal soft tissue injury (rare to none)	Infection (chorioamnionitis)
Cervical injury from the suture in case of uncontrollable preterm labor	Preterm labor requiring hospitalization
Increased incidence of cesarean section (soft tissue dystocia from scar tissue)	Extreme prematurity

Kofinas Perinatal

Providing Care to the Unborn ®

Appendix B

THE LENGTH OF THE CERVIX AND THE RISK OF SPONTANEOUS PREMATURE DELIVERY

In 2915 pregnant women examined by transvaginal sonography, the average cervical length was found to be 35.2 ± 8.3 mm (10th % =22 mm and the 90th%=48 mm) and 33.7 ± 8.5 mm at 24 and 28 weeks respectively. The cervical length was normally distributed in both gestational ages. The overall rate of preterm delivery prior to 35 weeks gestation in the group was 4.3 %. With this as a reference point relative risks and absolute percent risks are given in the following table for patients examined at 24 weeks:*

Cervical length (mm)	RR for delivery <35 wks	% Risk for delivery <35 wks
<40	1.98	8 %
<35	2.35	10 %
<30	3.79	16 %
<26	6.19	26 %
<22	9.49	40 %
<13	19.99	86 %

In patients examined at 28 weeks and beyond, the relative risk is 2.80, 3.52, 5.39, 9.57, 13.88, and 24.94 respectively.

*Patients examined earlier are most likely at even higher risk than those examined at 24 weeks.

Revised from N Engl J Med 1996;334:567-72