GUIDELINE SYNTHESIS

Cervical Cerclage

Guidelines Being Compared:

1 American College of Obstetricians and Gynecologists (ACO

Cerclage for the management of cervical insufficiency.

2014 Feb 01

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2 Society of Obstetricians and Gynaecologists of Canada (SOGC)

Cervical insufficiency and cervical cerclage.

2013 Dec 01

View Summary >

Areas of Agreement and Difference

A direct comparison of recommendations presented in the above guidelines for the use of cervical cerclage for the management of cervical insufficiency is provided in the tables. Diagnosis of cervical insufficiency and conservative (non-surgical) management of cervical insufficiency are beyond the scope of this synthesis.

Areas of Agreement

in women with a history of spontaneous loss or preterm birth if the ultrasonographically measured cervical length is ≤25 mm before 24 weeks of gestation. There is further agreement that cerclage is not indicated in singleton pregnancies in women *without* a history of preterm birth or spontaneous loss who have an incidentally identified short cervix of ≤25 mm.

Transabdominal Cerclage

ACOG and SOGC agree that transabdominal cerclage may be considered in women with cervical insufficiency and a previous failed transvaginal cerclage; the guideline developers also cite previous trachelectomy as an indication.

Cerclage in Special Populations

The guideline developers agree that neither history- nor ultrasound-indicated cerclage is recommended for women with **multiple gestations**, even when there is an increased risk of preterm delivery.

Emergency Cerclage

According to SOGC, emergency cerclage (also known as rescue or physical examination-indicated cerclage) may be considered in women in whom the cervix has dilated to <4 cm without contractions before 24 weeks of gestation. ACOG states that after clinical examination to rule out uterine activity and intraamniotic infection, physical examination-indicated cerclage placement (if technically feasible) in patients with singleton gestations who have cervical change of the internal os may be beneficial.

Operative Issues

ACOG and SOGC agree that the most commonly used transvaginal cerclage methods are the McDonald and Shirodkar techniques (or variations thereof). There is further agreement that the superiority of one approach over another has not been established and that the choice of technique should be at the discretion of the surgeon. The guideline developers also address the placement of a second suture in addition to the primary cerclage, with both agreeing that no benefit of this approach has been demonstrated. With regard to the use of perioperative

Cerclage Removal

The guideline developers agree that a transvaginal cerclage is removed electively before labor, typically between 36 and 38 weeks gestation (ACOG specifies 36–37 weeks; SOGC 36–38 weeks). For women undergoing elective cesarean section at or beyond 39 weeks of gestation, ACOG states that removal can be delayed until this time. The developer cautions, however, that the possibility of spontaneous labor between 37 and 39 weeks of gestation must be considered. ACOG also notes that if there is cervical change, painful contractions or progression of vaginal bleeding in women presenting with symptoms of preterm labor, cerclage removal is recommended. SOGC states that the onset of premature labor unresponsive to tocolysis and or a strong suspicion of sepsis are indications for emergency removal of the cerclage.

With regard to whether cerclage should be removed in women with PPROM, ACOG states that a firm recommendation cannot be made, and either removal or retention is reasonable. Regardless, if a cerclage remains in place with preterm PROM, prolonged antibiotic prophylaxis beyond 7 days is not recommended, notes ACOG. SOGC advocates a policy of cerclage removal within 48 hours in this situation (allowing time for corticosteroid administration if appropriate). SOGC notes that c-reactive protein estimation may be used as a predictor of chorioamnionitis following preterm membrane rupture and may therefore aid the decision between immediate or delayed (<48 hours) suture removal.

Areas of Difference

History-Indicated Transvaginal Cerclage

While SOGC recommends insertion of a history-indicated cerclage (also called a prophylactic cerclage) for women with a history of **three or more** previous second trimester pregnancy losses or preterm births, ACOG states that it can be considered in a patient with a history of **one or more** second-trimester pregnancy losses related to painless cervical dilation in the absence of labor or abruptio placentae.

Comparison of Recommendations

(2014)	**evidence (Level A)**: • Although women with a current singleton pregnancy, prior spontaneous preterm birth at less than 34 weeks of gestation, and short cervical length (less than 25 mm) before 24 weeks of gestation do not meet the diagnostic criteria for cervical insufficiency, available evidence suggests that cerclage placement may be effective in this setting. Cerclage is associated with significant decreases in preterm birth outcomes, as well as improvements in composite neonatal morbidity and mortality, and may be considered in women with this combination of history and ultrasonographic findings. • Cerclage placement in women without a prior spontaneous preterm birth and a cervical length less than 25 mm detected between 16 weeks and 24 weeks of gestation has not been associated with a significant reduction in preterm birth. **The following recommendations are based on limited or inconsistent scientific evidence (Level B):** • Certain nonsurgical approaches, including activity restriction, bed rest, and pelvic rest have not been proved to be effective for the treatment of cervical insufficiency and their use is discouraged. • The standard transvaginal cerclage methods currently used include modifications of the McDonald and Shirodkar techniques. The superiority of one suture type or surgical technique over another has not been established. • Cerclage may increase the risk of preterm birth in women with a twin pregnancy and an ultrasonographically detected cervical length less than 25 mm and is not recommended. • Neither antibiotics nor prophylactic tocolytics have been shown to improve the efficacy of cerclage, regardless of timing or indication. • A history-indicated cerclage can be considered in a patient with a history of unexplained second trimester delivery in the absence of labor or abruptio placentae.

	• Cerclage should be limited to pregnancies in the second trimester before fetal viability has been achieved. • Transabdominal cervicoisthmic cerclage generally is reserved for patients in whom a cerclage is indicated based on the diagnosis of cervical insufficiency but cannot be placed because of anatomical limitations (e.g., after a trachelectomy), or in the case of failed transvaginal cervical cerclage procedures that resulted in second-trimester pregnancy loss. • After clinical examination to rule out uterine activity, or intraamniotic infection, or both, physical examination-indicated cerclage placement (if technically feasible) in patients with singleton gestations who have cervical change of the internal os may be beneficial. • In patients with no complications, transvaginal McDonald cerclage removal is recommended at 36 to 37 weeks of gestation. • For patients who elect cesarean delivery at or beyond 39 weeks of gestation, cerclage removal at the time of delivery may be performed; however, the possibility of spontaneous labor between 37 weeks and 39 weeks of gestation must be considered. • In most cases, removal of a McDonald cerclage in the office setting is appropriate.
SOGC (2013)	<u>Management of Cervical Insufficiency</u> **Prophylactic Transvaginal Cerclage** • In women with a history of cervical insufficiency, urinalysis for culture and sensitivity and vaginal cultures for bacterial vaginosis should be taken at the first obstetric visit and any infections so found should be treated. (**I-A**) • Women with a history of three or more second trimester pregnancy losses or extreme premature deliveries, in whom no specific cause other than potential cervical insufficiency is identified, should be offered elective cerclage at 12 to 14 weeks of gestation. (**I-A**)

cerclage has been unsuccessful, abdominal cerclage can be considered in the absence of additional mitigating factors. (**II-3C**)

- Women who have undergone trachelectomy should have abdominal cerclage placement. (**II-3C**)

Emergency Cerclage

- Emergency cerclage may be considered in women in whom the cervix has dilated to <4 cm without contractions before 24 weeks of gestation. (**II-3C**)

Conservative Observational Management

Note: See the original guideline document for the five steps of conservative management.

- Women in whom cerclage is not considered or justified, but whose history suggests a risk for cervical insufficiency (1 or 2 prior mid-trimester losses or extreme premature deliveries), should be offered serial cervical length assessment by ultrasound. (**II-2B**)

Cerclage Based on Ultrasound Measurement of Cervical Length

- Cerclage should be considered in singleton pregnancies in women with a history of spontaneous preterm birth or possible cervical insufficiency if the cervical length is ≤25 mm before 24 weeks of gestation. (**I-A**)
- There is no benefit to cerclage in a woman with an incidental finding of a short cervix by ultrasound examination but no prior risk factors for preterm birth. (**II-1D**)

Multiple Gestations

- Present data do not support the use of elective cerclage in multiple gestations even when there is a history of preterm birth; therefore, this should be avoided. (**I-D**)
- The literature does not support the insertion of cerclage in multiple gestations on the basis of cervical length. (**II-1D**)

Schemes

ACOG (2014)	Studies were reviewed and evaluated for quality according to the method outlined by the U.S. Preventive Services Task Force (1989). **I**: Evidence obtained from at least one properly designed randomized controlled trial. **II-1**: Evidence obtained from well-designed controlled trials without randomization. **II-2**: Evidence obtained from well-designed cohort or case–control analytic studies, preferably from more than one center or research group. **II-3**: Evidence obtained from multiple time series with or without the intervention. Dramatic results in uncontrolled experiments also could be regarded as this type of evidence. **III**: Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees. **Levels of Recommendation** **Level A**—Recommendations are based on good and consistent scientific evidence. **Level B**—Recommendations are based on limited or inconsistent scientific evidence. **Level C**—Recommendations are based primarily on consensus and expert opinion.
SOGC (2013)	**Quality of Evidence Assessment*** **I**: Evidence obtained from at least one properly randomized controlled trial **II-1**: Evidence from well-designed controlled trials without randomization

II-3: Evidence obtained from comparisons between times or places with or without the intervention. Dramatic results in uncontrolled experiments (such as the results of treatment with penicillin in the 1940s) could also be included in this category

III: Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees

*Adapted from the Evaluation of Evidence criteria described in the Canadian Task Force on Preventive Health Care.

Classification of Recommendations†

A. There is good evidence to recommend the clinical preventive action

B. There is fair evidence to recommend the clinical preventive action

C. The existing evidence is conflicting and does not allow to make a recommendation for or against use of the clinical preventive action; however, other factors may influence decision-making

D. There is fair evidence to recommend against the clinical preventive action

E. There is good evidence to recommend against the clinical preventive action

L. There is insufficient evidence (in quantity or quality) to make a recommendation; however, other factors may influence decision-making

†Adapted from the Classification of Recommendations criteria described in the Canadian Task Force on Preventive Health Care.

Methodology

Click on the links below for details of guideline development methodology	
ACOG (2014)	**SOGC** (2013)

unpublished data. The guideline developers provide relevant details of the literature search process including the names of databases searched, date ranges applied and inclusion/exclusion criteria that were used. To assess the quality and strength of the selected evidence, the groups weighted it according to a rating scheme and provide the scheme. Methods used to analyze the evidence were similar in that both developers performed a systematic review of the evidence and reviewed published meta-analyses. ACOG and SOGC each employed expert consensus as a method of recommendation formulation and both rate the strength of the recommendations according to a scheme. With regard to issues of cost-effectiveness, neither of the developers reviewed published cost analyses nor performed a formal cost analysis. To validate the guidelines, internal peer review was sought by ACOG and SOGC.

Benefits and Harms

Benefits

ACOG (2014)	Cerclage is associated with significant decreases in preterm birth outcomes, as well as improvements in composite neonatal morbidity and mortality.
SOGC (2013)	Appropriate diagnosis and management of women at greatest risk of having cervical insufficiency and the appropriate use of cervical cerclage

Harms

ACOG (2014)	• Overall, there is a low risk of complications with cerclage placement. Reported complications include rupture of membranes, chorioamnionitis, cervical lacerations, and suture displacement. The incidence of complications varies widely in relation to the timing and indications for the cerclage. A cerclage in the presence of membrane rupture or dilation generally is associated with an increased risk of complications. Life-threatening complications of uterine rupture and maternal septicemia are extremely rare but have been reported

	greater risk of hemorrhage, which can be life threatening, in addition to all the other complications associated with abdominal surgery. Furthermore, it generally precludes the performance of uterine evacuation or vaginal delivery. • In some, but not all studies, cerclage retention with preterm PROM has been associated with increased rates of neonatal mortality from sepsis, neonatal sepsis, respiratory distress syndrome, and maternal chorioamnionitis.
SOGC (2013)	**Complications** • Three randomized clinical trials have shown that cerclage is associated with increased medical interventions and doubles the risk of puerperal pyrexia. The use of tocolytics increases with cerclage, as does the rate of hospital admissions, and one study found a higher rate of Caesarean sections. However, the risk and nature of complications is influenced by whether the cerclage is inserted electively or as an emergency with membranes bulging through the cervix. The complications reported with cerclage include sepsis, premature rupture of membranes, premature labour, cervical dystocia, cervical laceration at delivery (11% to 14%), and hemorrhage. • However, meta-analysis of a number of studies has not confirmed higher rates of chorioamnionitis or preterm pre-labour membrane rupture in women managed with cerclage than in those managed by other means. Although cervical dystocia is frequently cited as a complication of cerclage due to cervical scarring, data do not support its being truly attributable to cerclage; the increased risk of cervical laceration, however, although it appears to be unrelated to the timing of the removal of the cerclage, can be attributed to the cerclage.

Abbreviations

ACOG, American College of Obstetricians and Gynecologists

PROM, premature rupture of membranes

Status

This synthesis was prepared by ECRI Institute on January 30, 2015. The information was verified by RCOG on February 3, 2015, by SOGC on February 11, 2015, and by ACOG on February 26, 2015. This synthesis was revised most recently in February 2017 to remove recommendations from RCOG.