GUIDELINE FOR CERVICAL RIPENING WITH A BALLOON DEVICE

The use of a cervical ripening mechanical option such as a single (Foley®) intrauterine or double (Cook®) intra and extrauterine balloon catheter device can be used as an effective means to soften, efface, or dilate the cervix to increase the likelihood of a vaginal delivery in cases of postdates pregnancies or when an induction of labour is recommended. A balloon device is an acceptable and safe method used for cervical ripening in cases of a planned vaginal birth after a previous cesarean section[1]. Women however, need to be counselled appropriately on the use of the balloon device as a mechanical option for cervical ripening and should be informed that the use of a balloon device may cause vaginal bleeding, pain, and altered fetal presentation (Maslovitz, Lessing, & Many, 2010).

The mechanism of action of a balloon device includes dilation of the cervix from pressure on the internal os or both internal and external os. These devices are simple to use, can be reversed, are less likely to cause side effects such as excessive uterine activity and are cost effective. Balloon device catheters are not associated with increased rates of maternal or neonatal infections and can be used in the outpatient setting.

According to a 2001 Cochrane report, mechanical methods of cervical ripening resulted in less tachysystole with fetal heart changes compared with the use of prostaglandin or misoprostol but with no difference in cesarean section rates. However, when compared with the use of oxytocin alone with women with an unfavourable cervix, the cesarean section rate was reduced with mechanical methods.

It is important that cervical ripening be considered prior to labor induction *in women with an unfavourable cervix.* The less compelling the indication for induction, the more attention should be paid to adequate cervical ripening. The double balloon device for cervical ripening prior to induction with oxytocin in women with a previous cesarean section improves Bishop scores without increasing the rates of complications and decreasing the time for which oxytocin is required (Ferradas, Alvarado, Gabilondo, Diez-Itza, & García-Adanez, 2013).

The cervix is considered *unfavourable for induction* if the Bishop score is ≤ 6 and *favourable* if there is a Bishop score of > 6.

Factor:	***Score:***			
	0	**1**	**2**	**3**
Dilation (cm)	**0**	**1-2**	**3-4**	**≥5**
Effacement (%)	**0-30**	**40-50**	**60-70**	**≥80**
Thickness/Length (cm)	**>3**	**1-3**	**<1**	
Consistency	**Firm**	**Medium**	**Soft**	-
Position	**Posterior**	**Mid**	**Anterior**	-
Station	**Spines -3 or above**	**Spines -2**	**Spines-1 or 0**	**Spines +1 or lower**

[1] In women with a prior uterine incision, a review of the operative report and an obstetrical consultation is expected.

Contraindications

Contraindications to the use of balloon device catheters include but are not limited to the following:

- Contraindication to labour or vaginal delivery
- Placenta or vasa previa
- Cord presentation
- Abnormal fetal lie or presentation such as transverse lie or footling breech
- Prior classical or inverted T uterine incision
- Prior myomectomy
- Active genital herpes
- Pelvic structural deformities
- Invasive cervical carcinoma
- Previous uterine rupture

Relative Contraindications

- Antepartum hemorrhage
- Rupture of membranes
- Genital tract infection
- Cervicitis

Technique

Pretest a size no. 14 -18 balloon catheter device with a 30 ml single balloon or 40 ml double (2x 20 ml) balloon prior to use. The balloon/s catheter is introduced under sterile technique into the intracervical canal past the internal os. The bulb is inflated with 20 to 80 ml[2] of normal saline solution, and the catheter is left in place until either it falls out spontaneously or 24 hours have elapsed. A small degree of traction on the catheter can be applied by taping the catheter to the inside of the leg. The balloon/s must first always be deflated should it become necessary to remove the catheter.

[2] More saline can be pumped into the intrauterine balloon/s according to the package insert or until a maximum volume of 80 ml is reached and less if a woman is experiencing discomfort. The full maximum dose of 80 ml may decrease the effectiveness of cervical ripening due to the balloon becoming cylindrical in shape.

References

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Ferradas, E.R., Alvarado, I.L., Gabilondo, M.A., Diez-Itza, I. & García-Adanez, J. (2013). Double balloon device compared to oxytocin for induction of labour after previous caesarean section. *Open Journal of Obstetrics and Gynecology,* 4(7), 212-216. doi:10.4236/2013.31A039

Maslovitz, S., Lessing, J.B. & Many, A. (2010). Complications of trans-cervical Foley catheter for labour induction among 1,083 women. *Archives of gynecology and obstetrics, 281*(3) 473-477*.*

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