

Massive Postpartum Haemorrhage at Caesarean Section with a Closed Cervix – A Review of Techniques to Deploy a Bakri Balloon

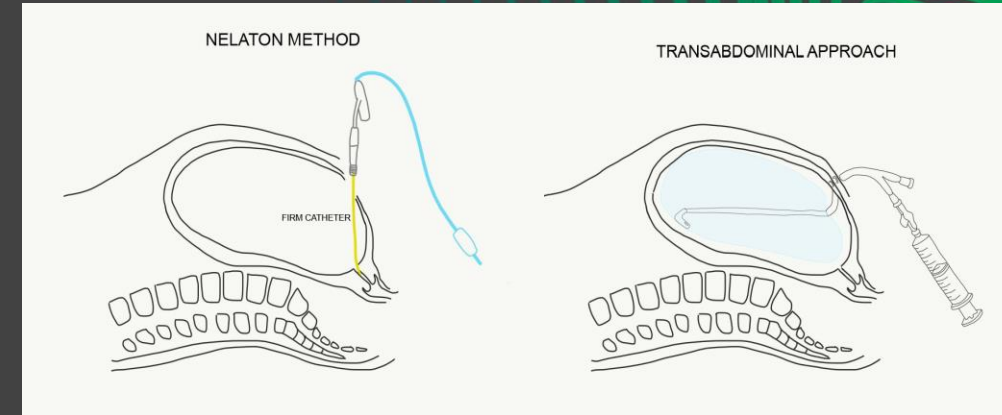
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Background: Bakri balloon tamponade for control of postpartum haemorrhage (PPH) at caesarean section is an effective second line treatment after uterotonics have been exhausted, with a success rate of 76%(1). Easy insertion is however dependent on a patent cervical canal.

Case: A 36 year old multigravida with previous spontaneous vaginal births had a non-labour elective caesarean section for breech presentation. At caesarean section, PPH ensued after manual removal of a morbidly adherent placenta. At abdominal deployment of the Bakri balloon the cervix was found to be tightly closed, impenetrable to digital dilation and unable to pass the Bakri catheter vaginally. Fortunately sterile gauze packing and further uterotonics stemmed the bleeding, allowing for double layer uterine closure. Total blood loss was 2000mL. This poses the question: what alternatives exist to manage the narrowed, closed or stenosed cervix at caesarean section requiring passage of a Bakri catheter for PPH management?

Discussion: Encountering a closed cervix at a caesarean section requiring Bakri balloon placement is a critical obstacle that an obstetrician may need to overcome. The following techniques have been developed and/or suggested:

1. **Mechanical dilation** of the cervix by way of double gloved index finger followed by Hegar dilation as second line method have been suggested, with the Bakri balloon catheter being 24-French (8mm diameter). These have been studied in the context of its potential to reduce post-operative morbidity, with no clear effect on febrile morbidity or endometritis(2).
2. The '**Nelaton method**' utilises a 26-French Nelaton transurethral rubber catheter or something with similar stiffness (in-out catheter) attached to the insufflation end (with stopcock removed) of the Bakri balloon and passing it from the uterine incision through the cervix and into the vagina. The rigid nature of the catheter allows for more direct passage of the distal Bakri catheter down the narrow cervix(3).
3. A **transabdominal approach** has been described with successful passage of the Bakri catheter through a gap between the uterus, rectus sheath and skin(4,5). The Bakri was removed after 24 hours. We would consider this a rescue technique when cervical dilatation by alternative methods is not possible or appropriate.



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5. Kondoh, E., Kawasaki, K., Kawamura, A., Ueda, A., Fujita, K., & Konishi, I. (2013). Successful management of intraoperative hemorrhage from placenta previa accreta: intrauterine tamponade balloons brought out through the abdominal wall. *The Journal of Maternal-Fetal & Neonatal Medicine*, 27(3), 309–311.