**Purpose**
The Bakri postpartum balloon catheter is used to provide temporary management of lower uterine segment bleeding in postpartum hemorrhage when conservative management is warranted.

**Applicability**
The Bakri postpartum balloon catheter can be inserted by Obstetricians with Bakri insertion education or experience in the insertion of Bakri postpartum balloon catheters.

**Responsibility**
The staff in Women’s Health will demonstrate a commitment to the safety of all patients when using this procedure.

**Procedure**
Insertion of the Bakri postpartum balloon for the management of postpartum hemorrhage

**Contraindications:**
- Arterial bleeding requiring surgical exploration or angiographic embolization
- Cases indicating hysterectomy is necessary
- Pregnancy
- Purulent infections in the vagina, cervix or uterus
- Untreated uterine anomaly
- Disseminated intravascular coagulation
• A surgical site which would prohibit the device from effectively controlling bleeding

Warnings:
• The device should not be left indwelling for more than 24 hours
• Always inflate the balloon with sterile liquid. Never inflate with any gas
• The maximum inflation is 500 mLs. Do not over inflate the balloon
• Clinical data to support the safety and effectiveness of the Bakri postpartum balloon in the setting of uterine atony are limited. Patients in whom this device is being used should be closely monitored for signs of worsening bleeding and/or disseminated intravascular coagulation. In such cases, emergency intervention should be followed.
• There are no clinical data to support the use of this device in the setting of DIC

A. Vaginal Delivery – Transvaginal Placement

- Determine uterus is clear of any retained placental fragments, arterial bleeding, or laceration.
- Determine approximate uterine volume by ultrasound or direct examination.
• Insert the balloon portion of the catheter in the uterus; making certain that the entire balloon is inserted past the cervical canal and internal ostium

• **NOTE:** Avoid excessive force when inserting the balloon into the uterus.

• If not already indwelling, place a Foley catheter in patient bladder to collect and monitor urine output.

• To ensure maintenance of correct placement and maximize tamponade effect, the vaginal canal may be packed with iodine or antibiotic soaked vaginal gauze at this time.

B. Cesarean Delivery – Transabdominal Placement

• Determine uterus is clear of any retained placental fragments, arterial bleeding, or lacerations.

• Determine uterine volume by intraoperative direct examination or postoperative ultrasound examination.

• From above (via access of the Cesarean incision), pass the tamponade balloon, inflation port first, through the uterus and cervix.

• Have an assistant pull the shaft of the balloon through the vaginal canal, until the deflated balloon base comes in contact with the internal cervical ostium.

• Close the incision per normal procedure, taking care to avoid puncturing the balloon while suturing.

• If not already indwelling, place a Foley catheter in patient bladder to collect and monitor urine output.
To ensure maintenance of correct placement and maximize tamponade effect, the vaginal canal may be packed with iodine or antibiotic soaked vaginal gauze at this time.

3.0 INSTRUCTION FOR BALLOON INFLATION

**NOTE:** Always inflate the balloon with sterile liquid 500mLs (max).

Never inflate with air, carbon dioxide, or any other gas. Do not over-inflate the balloon.

- Spike a 500 mL IV bag of normal saline with the supplied bag spike attached to 180 cm IV tubing and flush tubing
- Attach red end of IV tubing to red end of stopcock
- Attach Bakri tubing to large leur lock end of stopcock (will only attach one way)
- Attach 60 mL syringe to smaller leur lock end of stopcock (will only attach one way)
• Move blue handle of stopcock so it is open to the syringe (to the Bakri tubing)

• Withdraw 60 mL of normal saline from IV bag into the syringe.

• Close blue handle of stopcock to IV bag. (in line with the Bakri tubing)

• Push the 60 mL of Normal Saline into the Bakri.

• Repeat until the desired volume has been inserted into the Bakri to a maximum total of 500 mL.

  • Apply gentle traction to the balloon shaft to ensure proper contact between the balloon and tissue surface.
  • To maintain tension, secure the balloon shaft to the patient’s leg with included adhesive device.
  • When time permits, you may replace the syringe with a heparin/saline lock device to prevent the Bakri from deflating if stop cock is inadvertently opened.

NOTE: If balloon becomes dislodged due to shaft tension and cervical dilation, deflate, reposition, and re-inflate. Use of vaginal packing may be indicated at that time to aid in balloon placement.
4.0 PATIENT MONITORING

- Once balloon is placed and is inflated, connect the drainage port to a urinary drainage bag to monitor hemostasis.
- Patient should be monitored for signs of increased bleeding, uterine cramping, or a deteriorating condition.
- Monitor drainage output from Bakri q1h and record on intake and output record while patient remains in Labour and Delivery or until the Bakri removed by physician.
- Patient monitoring should include, but not be limited to: blood pressure, pulse, urine output, cramping, pallor, and active vaginal bleeding.

IMPORTANT: Signs of deteriorating or non-improving conditions should indicate more aggressive treatment and management of patient uterine bleeding. Notify primary care physician.

IMPORTANT: This device is not a substitute for surgical management and fluid resuscitation of life-threatening postpartum hemorrhage.

5.0 BALLOON REMOVAL

To be removed by a physician or designate only.

- Maximum indwell time is twenty-four (24) hours. Balloon may be removed sooner upon physician determination of hemostasis or need to apply more aggressive treatment.
- Remove tension from balloon shaft.
- Remove any vaginal packing.
- Using an appropriate syringe, aspirate the contents of the balloon until fully deflated.
- Gently retract the balloon from the uterus and vaginal canal and discard.
- Continue to monitor the patient for signs of uterine bleeding.

6.0 POSTPARTUM CARE

Patients with a Bakri tamponade device must be monitored for:
- Increasing lochia drainage into the urine drainage bag attached to the Bakri
- By-passing blood flow from the vagina
- No or little drainage from the Bakri and an increasing fundal height (possibly indicating a clotted drainage port)
- Vital signs reflecting blood loss (tachycardia, hypotension)
1. Upon transfer to postpartum, report will be given by the labour and delivery nurse to the postpartum nurse regarding the reason for placement, time of placement and amount of saline in the Bakri balloon.

2. Initial assessment of the patient will be provided as with any new admission to postpartum, paying particular care to the Bakri, ensuring all ports are tightened, a saline lock device is placed and the urine drainage bag is attached, noting the amount of flow in the bag on arrival.

3. Assessment of the ports will be done every shift.

4. The Bakri drainage will be measured each every 4 hours (or more often as needed) and documented on an In/Out record.

5. Vital signs (pulse, BP and temperature) as well as fundal and flow checks will be performed every 4 hours while the Bakri device is insitu or as ordered/directed by patient condition or physician.

6. If the Bakri device shows minimal or no drainage and the patient’s fundus is rising, the nurse caring for the patient will notify the attending/on call physician and include the latest fundal and vital signs information.

7. * The Bakri device is not to be flushed by any nurse or resident while insitu. Flushing of this device has not been deemed preferential by the Obstetrical Team of Covenant Health. (Unless assessed as necessary and performed by the attending obstetrician)

8. If the physician is planning on removing (removal recommended at or prior to 24 hours), or flushing* the Bakri device, he/she will ensure the nursing staff is both aware and prepared at the bedside for a rare but potential post removal hemorrhage.

9. After removal (flushing) of the Bakri, vital signs and fundal/flow assessments will be performed every 15 minutes x 2, then every 30 minutes x 1 for the first hour post removal.

10. IV access will be maintained until 1 hour post Bakri removal.
7.0 REFERENCES
