

FREQUENTLY ASKED QUESTIONS Use of Uterine Balloon Tamponade (UBT) for Management of Postpartum Hemorrhage (For UBT Trainers)

Uterotonics effectively stop bleeding for most women who experience postpartum hemorrhage (PPH) caused by uterine atony. When women fail to respond to medical management and bleeding persists, one option before invasive surgery for women with atonic PPH is use of uterine balloon tamponade (UBT). In most low- and middle-income settings, pre-fabricated UBT devices like the Bakri Balloon are neither widely available nor affordable. Gynuity Health Projects and partners conducted a stepped-wedge, cluster-randomized trial in Egypt, Senegal and Uganda to assess the impact of introducing a simple, low-cost condom catheter UBT kit consisting of locally sourced materials in 18 secondary and district referral facilities. Training providers at participating sites on when and how to use the UBT device was an important component of our study. With partners, we developed a training curriculum, including this FAQ, which UBT Trainers may find useful.

WHAT HAPPENS IF THE UTERINE BALLOON FALLS OUT AFTER IT HAS BEEN PLACED?

Common reasons why the uterine balloon may fall out are:

1. There was not enough water used to inflate the balloon (the UBT was under-filled).
2. The uterine balloon was placed in the vagina and not the uterus.

Your next step depends on whether the woman is still bleeding.

- *If the woman is not bleeding, observe her closely to be sure the bleeding does not resume.*
- *If woman is still bleeding, obtain another UBT kit and replace, ensuring enough water is used and that the condom is well inside the uterus before inflating. One hand may need to hold the catheter in place while filling the balloon.*

WHAT IF THE CONDOM BREAKS INSIDE THE UTERUS?

Pull out the Foley catheter from the uterus. Ensure all the pieces of the condom are removed. Usually all the condom pieces will follow and are still attached. If the woman is still bleeding, obtain another UBT kit and replace.

WHAT IF THE WOMAN CONTINUES TO BLEED AROUND THE BALLOON?

Bleeding may continue when there is not enough fluid in the condom or the condom does not completely fill the uterus.

1. Assure the UBT is placed all the way to the fundus and inflate more fluid into the condom.
2. If bleeding continues, inspect for other potential causes of bleeding such as a cervical or vaginal laceration, uterine rupture or DIC.
3. If bleeding still continues, arrange for transport to the operating theater or another facility but leave the balloon in place. It may still help to decrease blood loss while definitive action is planned.

WHAT DO I NEED TO DO TO MANAGE THE WOMAN'S PAIN?

Women generally do not require additional analgesia for placement of the UBT. If cramping or discomfort occurs, oral or intravenous (IV) pain medication can be used according to local availability and protocols. IV is recommended over oral if the woman is not fully conscious or if the likelihood of needing a subsequent operation is high. Usually, when women are informed of the reason they need the balloon and are informed about what will happen during the placement of the balloon, they tolerate the procedure.

CAN I PUT IN A UTERINE BALLOON IF I THINK THERE IS RETAINED PLACENTA?

It is best to remove the retained placenta first as this is the most likely cause of the bleeding. If the woman is still bleeding after removal of the placenta, a UBT can be placed. Also if the woman's placenta cannot be removed completely (for example, placenta accreta) the UBT can be placed temporarily to reduce blood loss during transfer to the operating theater or to a higher-level facility.

CAN I PUT IN A UTERINE BALLOON IF I THINK THE WOMAN HAS A RUPTURED UTERUS?

NO! This is a contraindication to UBT placement. Inflating the UBT could potentially worsen the rupture.

CAN I USE A UTERINE BALLOON IF THE WOMAN HAD CHORIOAMNIONITIS?

YES. Be sure to use the prophylactic dose of antibiotics recommended with all UBT placement. If the woman develops endometritis, place the woman on broad spectrum IV antibiotics (i.e. Ampicillin + Gentamycin + Metronidazole) until at least 24 hours after the last fever, as per country protocol. There is little data about use of the UBT in the setting of infection. The clinician must consider the severity of bleeding versus the severity of infection in deciding clinical management and respond accordingly.

CAN I USE A UTERINE BALLOON IF THE WOMAN HAS ECLAMPSIA?

YES. Preeclampsia or eclampsia does not pose a contra-indication for UBT placement.

CAN A WOMAN BE TRANSPORTED WITH A UTERINE BALLOON IN PLACE?

YES, it is recommended in cases of severe bleeding that the woman be transported with a UBT in place. This can potentially minimize blood loss during transfer. If you transfer a woman to another facility with the UBT, be sure to send information to the referral facility and include information about the UBT.

IF THE BALLOON BURSTS AND THE WATER IS NOT STERILE, CAN IT CAUSE INFECTION?

Clean water is NOT a significant source for infection. Emergency medicine research literature has shown that clean tap water can be used to irrigate a wound without an increased risk of infection over sterile water.

CAN A UTERINE BALLOON BE USED DURING A CESAREAN DELIVERY?

NO! As the contents of the condom uterine balloon kit supplied for this study are not all sterile it is not advisable to place the balloon tamponade *during* the cesarean section.

CAN A UTERINE BALLOON BE USED AFTER A CESAREAN DELIVERY?

YES. If the woman develops severe bleeding from uterine atony while in the recovery area or on the postpartum ward *after* a cesarean delivery, the uterine balloon can be placed in the same fashion as it is placed following a vaginal delivery. The UBT can also be used as a stabilizing measure prior to returning to the operating theatre, if necessary.

Although there is limited data on UBT use after cesarean deliveries, there is no evidence that the pressure from the balloon will disrupt the uterine incision after closure.

ONCE A UTERINE BALLOON IS IN PLACE, HOW CAN I BE SURE THERE IS NO CONCEALED BLEEDING BEHIND THE BALLOON?

When the UBT is in place, it is important to exam the fundal height and tone with every vital sign check to ensure there is no concealed bleeding. If there is concern for concealed bleeding, the woman should be re-examined. Potentially the UBT will need to be replaced or the woman may require further interventions.

Two important steps help assure that there is no concealed bleeding.

- First, the balloon should be inserted all the way to the fundus of the uterus before it is inflated.
- Second, the woman should undergo a fundal exam with each vital signs check once the balloon is placed to assure the uterus is not enlarging.

There is no drainage port on the simple condom balloon as there is with the Bakri balloon and some other models. Based on the MGH series of over 350 uses of the condom balloon, there is no negative impact from not having a drainage port. The absence of the port may allow for the condom to more fully occupy the uterus.

WHY USE WATER AND NOT AIR TO FILL THE BALLOON?

There is a theoretical risk of an air embolus if a condom ruptures and air under pressure is released in the uterus. The water also adds weight to the UBT that may provide additional tamponade.

WHAT IS THE BEST TEMPERATURE OF WATER TO USE TO INFLATE THE BALLOON?

Room temperature. There is no evidence for improved management of PPH if the water is cold or hot. Time and energy should not be spent on altering the water temperature.

CAN THE BALLOON CAUSE A UTERINE RUPTURE?

Pressures within the balloon and uterus were tested in a research lab. The pressures in the condom balloon needed to achieve tamponade are far below that required to rupture a uterus. The pressure required is also below mean arterial pressure as the placental bed is a low-pressure system.

DOES THE BALLOON PREVENT THE UTERUS FROM CONTRACTING?

No. Our clinical experience is that the uterus will still contract around the balloon. The condom takes the shape of the remaining space and will sometimes be pushed or fall out when the uterus is contracting

CAN UBT BE USED IN ABORTION CASES?

Data in the literature on these cases is limited, but there are many anecdotal successful reports of UBT use in post-abortion cases. There is no reason to assume an increased risk of complications in the setting of abortion verses use of UBT after delivery.

CAN THE BALLOON BE LEFT IN SITU FOR MORE THAN 24 HOURS?

There are reports in the literature of balloons in place up to 36 hours; however, blood should have clotted and the uterus contracted long before this time.

WHY IMPROVISE IF THERE IS A "REAL" BALLOON FOR TAMPONADE SUCH AS THE BAKRI?

The Bakri balloon kit is expensive and may not be feasible for use in all settings. Many different UBT kits exist. In Gynuity's study, we included simple, low-cost supplies, which could easily be adapted for any setting.

CAN THE WOMAN BEGIN TAKING ORAL FLUIDS AND EATING SOLID FOOD WHILE THE UTERINE BALLOON IS IN PLACE?

Yes. If the woman is stable and there is no concern she may require further intervention in the operating theatre, she can begin taking oral fluids and eating solid food while the uterine balloon is in place.

IF THE WOMAN IS IN STABLE CONDITION, IS IT NECESSARY TO WAIT 6 HOURS BEFORE REMOVING THE UTERINE BALLOON?

Yes. The best evidence to date supports leaving the uterine balloon in place for at least 6 hours to ensure that bleeding has subsided. Additional research is needed in order to determine if uterine balloon can be safely removed before 6 hours. Providers and coordinators should ensure that time of removal of the uterine balloon is accurately reported on the UBT form.

(Developed by Gynuity Health Projects and partners in 2017)