Brachytherapy for Gynecologic Cancers

Internal radiation is a form of treatment where a source of radiation is put inside your body. This is also called brachytherapy. This allows a higher dose of radiation to directly reach the area where the tumor is, or was prior to surgery. It reduces radiation exposure to the surrounding healthy tissues, such as the bowel and bladder.

Brachytherapy for cervical or endometrial (uterine) cancers is typically done using a "tandem and ovoid" (T&O) applicator or a "tandem and ring" (T&R) applicator, which reaches both the cervix and uterus. The tandem is a long, thin metal tube that is passed through the cervix, into the uterus. The ovoids are circular hollow capsules and the ring is a hollow ring, either are placed in the vagina, pressed against the cervix. Once placed in the vagina, the applicator is connected to a machine that automatically feeds a radiation source into the applicator, where it remains for a predetermined time, known as the dwell time. Once the time is up, the machine removes the source and the applicator is removed from your vagina. The dwell time can be anywhere from 15-25 minutes and during this time you will be alone in a lead lined room. This room is to protect the technicians from receiving radiation, but they can speak to you via a two-way microphone.

Your provider may recommend brachytherapy in conjunction with traditional external beam radiation (EBT), in which case it is typically given one to two days a week along with 3-4 days a week of EBT (you will not get EBR on the days you receive brachytherapy). Some women will receive brachytherapy after they have completed EBT. You will receive 3 to 6 brachytherapy sessions, depending on the type and extent of the tumor being treated. This article will explain the procedure and what you can expect. Be sure to talk to your care team about the procedure at your cancer center and any questions you may have. This procedure can be scary, but knowing what to expect can help to make it a little easier.

In some cases, your provider may use a "Smitt sleeve", also called a stent, which is a plastic hollow tube that is fitted to your uterine cavity and placed under anesthesia. This is done in a surgical facility and you will be given instructions prior to the procedure on how to prepare. The Smitt sleeve goes though your cervix, into the uterus, and is sutured in place. This remains in place until after the last T&O or T&R procedure to allow for easier, more comfortable placement of the applicator during each treatment. You will likely not feel the Smitt sleeve once it is in place and it does not require anesthesia to be removed.

**Day of Treatment**

On the day of a brachytherapy procedure, you will come to the radiation clinic, where you will meet with your nurse and provider. You will be taken to the treatment room where your care team will talk with you and ask about any problems you may be having. You will be asked to lie on a table with your legs in stirrups, similar to a gynecologic exam. Some women will have an IV catheter inserted and be given medications, which may include anti-nausea, relaxation and pain medications. A catheter (called a foley catheter) is placed into the bladder for the duration of the treatment. A contrast dye is put into the catheter, which allows the technicians and physicians to see the location of the bladder when giving the treatment.

The provider will then insert the tandem and ovoid applicator into your vagina. The applicator is positioned and gauze is inserted around the applicator to prevent it from moving during the treatment. Alternatively, the physician may place 2 balloons (one in front of and one behind the applicator), which are filled with a contrast dye solution that can be seen on the CT scan. These balloons keep the applicator from moving and provide some protection to the surrounding bowel and bladder tissue. The
placement of the applicator can take 30-40 minutes.

Once the equipment has been placed, multiple scans will be performed to check placement of the applicator and to plan your radiation dose. These may include x-rays, CT scans and/or MRIs. When the scans are completed you will need to wait while your provider and physicist plan your radiation treatment. The planning is a complex process and can take several hours. While you wait, you will be able to have a friend or family member sit with you. You may want to bring something to help you relax while waiting for the treatment to be planned; music with headphones, a book, magazines, etc.

Once the planning is complete, the applicator is connected with thin wires to the brachytherapy machine, which houses the radiation source. Once everyone has left the room, the brachytherapy machine dispenses the radiation source into the applicator. You will not feel this, but you may hear the noise of the machine. A physicist has determined how much radiation will be used and how long it will need to remain in place, therefore the time the radiation remains in the applicator varies based on your treatment plan, but is typically 20-25 minutes. The provider or technician can tell you ahead of time how long the radiation will remain in the applicator so you are prepared. You will be alone in the room during this time, but your team can see and hear you from their control room.

Once the time is up, the machine removes the radiation source and returns it to the housing, making it safe for the team to enter the room again. The applicator and foley catheter will then be removed. You will need to remain in the department for a little while to be monitored for bleeding, be sure you can urinate on your own after the catheter is removed and to be sure you can move around safely after any medications you received. You will go home the same day. You will not be able to drive a vehicle or do any strenuous activity, so be sure to have an escort to take you home.

Learn more about the potential side effects of radiation therapy for gynecologic cancers.

**What can I expect after the treatment?**

- You will likely experience some spotting, bleeding or vaginal discharge after the applicator is removed. This should not be more than a normal menstrual period.
- You may want to bring a sanitary pad with you to wear home or we can give you one. You should not use tampons, as you will have some irritation in the vagina and tampons could make this worse.
- **Do not** douche, have intercourse, go swimming or take a tub bath if you have a Smitt sleeve, until it is removed at the end of brachytherapy treatments and your provider has told you it is safe to do so.
- For some women, douching with vinegar and water will be recommended to help clean out any dead tissue AFTER all brachtherapy treatments are completed. Your provider will tell you if this is right for you. You can buy a douche kit at your local pharmacy.
- You may experience cramping, similar to menstrual cramps, for 24 hours after the procedure. You may use ibuprofen (Advil, Motrin or Nuprin) or naproxen (Aleve or Naprosyn) to relieve the cramps. Be sure to follow the instructions on the bottle.
- If you had a foley catheter during the procedure, you may experience burning when you urinate for up to 24 hours. You should drink 8-10 glasses of nonalcoholic and caffeine-free beverages a day for a few days after the procedure to ease any burning.
- Some patients experience diarrhea. You can take over the counter medications, such as loperamide (Imodium) or Kapectate to help manage any diarrhea. See our managing diarrhea teaching sheet for other tips on managing diarrhea.
- We suggest that you refrain from sexual intercourse during treatment because of the tenderness and irritation you may have in your vagina.
- You will be given vaginal dilators to use once your treatment has been completed. These will help the vaginal tissue remain flexible, making intercourse more pleasant, but also making pelvic exams more comfortable. You will need to use the dilator for the rest of your life. See our teaching sheet on dilators to learn more about them.
- You are not in any way radioactive after the procedure and it is safe for friends and family to be around you.
- You may eat a normal diet and carry on your normal activities while on brachytherapy treatment.

**Reasons to call your care team:**

- If you develop a fever (temperature > 101).
- You have pain that is not relieved with over-the-counter medication.
- You have excessive bleeding (more than a menstrual period) or develop a vaginal discharge.
- You have burning or blood in the urine more than 24 hours after the procedure.
- You do not have a bowel movement for 3-4 days after the procedure.
- You have more than 3-4 episodes of liquid diarrhea a day.

OncoLink is designed for educational purposes only and is not engaged in rendering medical advice or professional services. The information provided through OncoLink should not be used for diagnosing or treating a health problem or disease. It is not a substitute for professional care. If you have or suspect you may have a health problem or have questions or concerns about the medication that you have been prescribed, you should consult your health care provider.