What is High Dose Rate Brachytherapy?

HDR Brachytherapy (or internal radiation therapy) is a way of treating the area of a tumor with radiation by using an implant. This allows a higher dose of radiation to be given to the tumor area while reducing radiation exposure to other organs such as the bowel or bladder. For more information about internal radiation, read Page 15 of Radiation Therapy and You (National Cancer Institute) at: https://www.cancer.gov/publications/patient-education/radiationtherapy.pdf.

What is the first step in the brachytherapy treatment process?

- 1 - 2 weeks before starting your brachytherapy treatment, you will come to Radiation Oncology for a pelvic exam and Magnetic Resonance Imaging (MRI).
- Your Radiation Oncologist or Nurse Practitioner will review your medical history, medications, and allergies.
- You will sign a Consent to proceed with the procedure and treatment.
- A nurse will review instructions for preparing for your surgery, the treatment, possible side effects, and aftercare with you.
- You will receive an Operating Room folder with this information in writing.
- A blood draw, EKG, and chest x-ray may also be obtained at this visit.

What should I expect during this procedure?

1. Placing the applicator

Brachytherapy treatment uses **applicators** (a device used to deliver the radiation). An **interstitial implant applicator** uses a cylinder and needles. The implant is inserted into the vagina, uterus or body tissues under general

Radiation Oncology

- 1 -
anesthesia (medication to make you lose awareness and sleep). This is done by women's health and radiation doctors who specialize in treating people with cancer (Gynecology Oncologist and Radiation Oncologist).

During the procedure, the implant may be placed using abdominal ultrasound, or your doctor may make an incision in your lower abdomen (belly) to guide the placement of the applicator(s).

2. **Radiation treatment**
   - After you have recovered from the implant procedure you will be brought to Radiation Oncology. You will have a CT (Computed Tomography) scan and an MRI (Magnetic Resonance Imaging) scan to plan for the delivery of the radiation using a radioactive source.
   - You will then be admitted to the hospital.
   - The day after your surgery you will be brought to the Radiation Oncology department again where the radioactive source will be introduced into the applicator(s). The source will remain in the applicator(s) for a set amount of time and then removed, while leaving your interstitial implant in place.

3. **Additional treatments**
   After your treatment, you will return to your hospital room. You will have a total of 3-5 treatments as directed by your Radiation Oncologist. You will have two treatments a day. You should plan on staying in the hospital for at least 3 days. The applicator(s) will be removed by your Radiation Oncologist after your last treatment. You will be discharged by the inpatient team once you are able to get out of bed, walk, use the restroom, and tolerate eating and drinking.

**What can I expect during my hospital stay?**
While you are in the hospital, you will receive medication to control any pain and keep you relaxed. You must stay lying in bed with your head raised no
higher than your pillow. This is to avoid putting pressure on the pelvis and moving the implant. You may move your arms freely, but only make limited movements from side to side, and only with help of your nurse.

You will have an IV (needle inserted to deliver medication) and pain pump, which will allow you to give yourself pain medication as you need it at a safe controlled rate. Let your nurse or doctor know if you are having side effects from your pain medication or if the pain is not managed well enough. The goal is to keep you comfortable.

Since you will not be able to get up to the restroom, you will be given anti-diarrheal medication and put on a clear liquid diet to reduce the number of bowel movements. A catheter (flexible tube) will be put into your bladder while you are in the operating room, so that you do not need get up to urinate. It will stay in place during your hospital stay.

Laying still and flat for a long time puts you at risk for developing blood clots. Leg cuffs or sequential compression devices (SCDs) will be placed on your legs to help prevent clots in your legs. They inflate and deflate one leg at a time to improve your blood flow. You may get a shot with blood thinning medicine daily during your stay. This will also reduce the risk of getting blood clots while you are not able to move.

When the radiation treatment is done, the interstitial implant will be removed by your doctor. Removing the implant involves removing four stitches and sliding out the catheters. You do not need to go to the operating room for this. You will be given pain medication and a sedative before the implant is removed.

**What are my discharge instructions?**

Your Brachytherapy nurse will review discharge instructions with you regarding your radiation at the end of your treatment. You will receive further discharge
instructions from the inpatient team on how to care for yourself, your incision, and medications after surgery.

**Side effects:**

You may experience:
- Vaginal bleeding
- Vaginal discharge
- Urinary irritation
- Bladder irritation
- Bowel movement changes
- Fatigue

These side effects may last for several weeks after your treatment. Refer to page 23 of *Radiation Therapy and You* (NCI) for more information on side effects from radiation to the pelvis:


**Daily douching:**

**Ten (10) days after your discharge from the hospital start to douche once a day.** Use a mixture of two (2) tablespoons of hydrogen peroxide in eight (8) ounces of tap water at a comfortable temperature. Continue to douche once a day until your doctor tells you to stop. Douching is done to help remove tissue that has been harmed by radiation, allowing healthy tissue to heal. It also helps prevent infection and vaginal scarring.

You can buy douche bags at your local drug store. You can also buy douching bottles, or a Kit, for example Summer's Eve®. Empty the contents of the bottles and wash them out. Only use the hydrogen peroxide and water recipe listed above.
- You may add more water to the solution if you feel irritation or burning
- Clean the applicator with peroxide after each use
- Stop douching when your doctor tells you to.
Follow-up:
A follow-up visit will be scheduled about for 6 weeks after treatment has ended. At this visit your nurse practitioner will also talk with you about vaginal rehabilitation and sexual health.

When should I call my doctor?
*Call your doctor if you have any of the following symptoms:*
- Heavy bleeding - soaking a pad in one hour
- Uncontrolled diarrhea (more than four watery stools in a 24-hour period) not controlled by taking Imodium
- Pain when urinating
- Difficulty with or unable to urinate
- Cloudy urine
- Blood in urine
- Temperature greater than 101 degrees Fahrenheit

What is the contact information?
- Monday – Friday from 7:00am to 5:00pm:
  - Call the Radiation Oncology Department at (734) 936-4300
- On weekends, holidays or after 4:00 PM on weekdays,
  - Call the paging operator at (734) 936-6267. *Ask to have the On-Call Radiation Oncology Resident paged.*