

Treating Prostate Cancer

Prostate cancer generally does not cause any symptoms until it is extremely late stage and no longer curable. Because of the silent nature of prostate cancer, screening for prostate cancer is essential. Screening for prostate cancer involves identifying risk factors, obtaining a screening blood test called PSA (prostate specific antigen), and performing digital rectal examination. If the patient has risk factors such as an elevated PSA or an abnormal rectal exam, generally the next level of screening is a prostate needle biopsy. Risk factors for prostate cancer include age, family history, and African American descent. If a prostate needle biopsy confirms the presence of cancer of the prostate then several curative treatment options can be considered.

Both of the curative treatment options carry risks. The two major forms of treatment are surgery and radiotherapy. There are two types of radiotherapy, seed implant and external beam radiotherapy. In general all 3 forms of treatment :external beam radiation (EBR), seed implantation (SEEDS), and radical prostatectomy (RP) have some risk of erectile dysfunction. The likelihood of experiencing a decrease in your ability to obtain and maintain an erection with any of these treatment options is greatly impacted by your pre-existing erectile status. Any risk factors for erectile dysfunction that you may have now (such as increased age, diabetes, a history of smoking, vascular disease, etc) will increase the probability that you will experience a decrease in your erections after treatment. In general, SEEDS carries a 20-40% risk of decreasing your ability to obtain and maintain erections. EBR carries a 40-60% risk of decreasing erectile abilities. RP carries a 50-80% risk of decreasing your erectile abilities. If your cancer is particularly aggressive and requires bilateral wide excision of the neurovascular bundles your risk of erectile dysfunction with surgery is 100%.

Each of these treatment options can cause difficulties with urination after treatment. The radiation delivered to the prostate by EBR and/or SEEDS can cause irritative voiding symptoms and worsen the symptoms of bladder outlet obstruction. Because these treatment options are centered around leaving the prostate in place radiation can be a more challenging treatment option for men with an enlarged prostate. This is especially true if you have pre-existing symptoms of bladder outlet obstruction such as frequency of urination, getting up at night to urinate, and straining to urinate. For patients with a very large prostate and significant voiding symptoms special attention needs to be paid to the size of the prostate and the severity of the voiding symptoms. It may be necessary both in terms of symptom control and efficacy of the radiotherapy treatment, to reduce the volume of the prostate. Prostate volume reduction can be achieved prior to SEEDS or EBR by either hormonal ablation or a procedure to reduce prostate volume (such as KTP Laser Prostatectomy or TUNA, transurethral needle ablation of the prostate) or some combination of these treatments. For EBR and SEEDS there is a 10-20% risk of significant long term voiding dysfunction following the treatment. This risk is impacted by any pre-existing voiding

dysfunction. Surgical removal of the prostate requires removing the prostate from the bladder and urethra. This necessitates a surgical procedure on or near the urinary sphincter. The urinary sphincter is the muscle responsible for maintaining urinary continence. Therefore, with radical removal of the prostate there is a 2-20% risk of suffering stress urinary incontinence. Stress urinary incontinence is a leakage of urine when you cough or sneeze or stand from a chair. There is a less than 2% risk that the incontinence occurs even without a stress event.

These treatment options also increase your risk of suffering a cardiovascular or pulmonary event during the treatment. That is, at any given time in your life there is a risk that you could have a heart attack or a stroke or pulmonary embolus. This risk is increased whenever your body is put under stress. The stress of undergoing EBR increases your risk of such an event very mildly. SEEDS requires an anesthetic and so this increases your risk of having such an adverse event slightly. Radical surgery requires approximately 3-4 hours under general anesthesia with a blood loss (50-400 cc for Laparoscopic Radical Prostatectomy, 400-1200 cc for Open Radical Prostatectomy) and so this increases the risk of such an adverse event by slightly more than seed implantation. Another way to look at this risk is that the risk of having a cardiovascular or pulmonary event during surgical removal of the prostate in an otherwise healthy male is similar to your risk of being injured in a car accident on your way to the doctor's office. If you are fairly healthy this risk is small and so it does not stop us from doing reasonable things but yet this risk is real.

EBR is generally delivered over 4-6 weeks as outpatient therapy. During this period the patient experiences some fatigue and is more likely to have voiding symptoms such as frequency, urgency, blood in the urine, pain with urination, and painful bowel movements. SEEDS is performed as outpatient surgery. Radical surgery to remove the prostate requires 1-2 days stay in the hospital. There may be a 2-4 day stay with open RP and the hospital stay is generally 1-2 days with Laparoscopic RP. With open RP a urinary catheter is required for 2-4 weeks. With Laparoscopic RP the catheter is generally removed in 3-7 days. The recovery of urinary control after open RP requires 2-3 months and with Laparoscopic RP it takes zero 0-8 weeks. Twenty percent of Lap RP patients have urinary continence when the catheter comes out.

Of these three treatment options (EBR, SEEDS, RP) SEEDS offers perhaps the greatest convenience and ease of implementation. It is the newest of these three techniques and so it has the least amount of data in terms of cancer survival. The data that is available on SEEDS would seem to indicate that for men who have low volume, low score disease it can be as effective as EBR and RP with less risk and more convenience. However, there is data that shows that for higher score disease, such as gleason score 3+4=7 or higher there is a higher rate of cancer recurrence and that these cancer recurrences occur earlier than they would with RP or EBR. EBR offers the advantage of not requiring anesthesia or a trip to the operating room. Cure rates for EBR and RP are very similar. There

may be a slight advantage in cancer survival with RP in high risks patients but this is controversial.

To make an informed and thorough decision about your prostate cancer treatment plan you should take into account your risk for extra capsular disease based on the nomograms (see our patient information brochure on Elevated PSA and Prostate Cancer with the Prostate Cancer Nomograms) and what your treatment options would be if indeed you have a cancer recurrence after your primary therapy. Regardless of your preoperative data and your chosen treatment plan you will have some risk of recurrence overall. The risk of cancer recurrence after any primary treatment for prostate cancer is roughly 15%. If your PSA is low and your gleason score is low and you have low volume disease (low volume disease is when only one or perhaps two of the biopsies specimens are positive for cancer), then your risk of recurrence is very low. If you have high score, high PSA, high volume disease then your chance of recurrence is higher. The higher your risk of extracapsular disease on the nomograms the higher your risk of cancer recurrence after treatment with any of the three options. But no matter how favorable your preoperative data appears there is always some risk of recurrence. If your primary treatment is EBR or SEEDS then treatment for a potential cancer recurrence can be problematic. There are no proven curative treatments for cancer recurrence after EBR or SEEDS. Some urologists have done RP for cancer recurrence following radiotherapy of the Prostate. Surgery performed on a previously radiated prostate is extremely hazardous and carries great risk of significant complications (increased blood loss, possible need for urinary diversion) and so such surgery has largely been abandoned in the United States. Cryotherapy (freezing of the prostate) can be used for cancer recurrence after radiotherapy but it, too, carries significant risk. It has also not been proven to cure such post radiation recurrences.

If a patient has a cancer recurrence following RP (Open or Laparoscopic) then EBR can be used. Such treatments generally carry a 50% cure rate. So, with EBR or SEEDS as primary therapy there is no proven treatment for a recurrence of prostate cancer. But, if RP is used as primary therapy then EBR can be used to treat a recurrence and such treatments have a 50% cure rate.