

Advanced Stage Disease

Prostate Cancer: Radiation Approaches for Advanced Disease

Andrew L. Salner, MD FACR

I. Biochemical Recurrence after Prostatectomy

When we have a measurable PSA after prostatectomy, we don't know where the prostate cancer cell is located in the body, and we need to do a little detective work. Some criteria have been developed to help guide us. If the patient has a positive margin or extracapsular extension at the time of surgery, we know they are at higher risk for having cancer cells in the local area. If the recurrence is greater than two years or if the doubling time is longer, there is a likelihood that the disease may be in the local area and therefore radiation therapy may make sense. If we are going to contemplate radiation, there is now pretty good evidence that we should use it earlier rather than later, when the PSA is less than 0.5. For patients for whom we can delineate a good likelihood of disease in the local area, the outcomes actually have been pretty good. We use IMRT radiation therapy, and we use doses that are lower than what we would use if the prostate were still there. The complication rate has been quite low.

II. Bone Metastasis

Bone metastasis in men with prostate cancer with symptoms is probably one of the most vexing problems that we deal with because as it progresses prostate cancer can spread to bone, and it tends to spread to the axial skeleton. One of the most important parts of my job is to help patients with alleviation of their pain, and all of the pain strategies and pain specialists working together is important. If we can actually shrink the disease and decrease pain, we have really done something good for the patient.

Palliative radiation for bone pain is very effective, and it tends to cause very few side effects. It involves radiation doses that are medium or low because low radiation doses can shrink cancer cells for some durable period of time. Usually two weeks of radiation and sometimes one single dose of radiation can really eradicate pain or help control it nicely.

One of the true emergencies that we see for patients with prostate cancer is spinal cord compression, which is where the cancer involves the spine and actually extends backwards into the spinal canal pressing on the spinal cord. Hip metastasis is another common one that causes pain but also threatens fracture. The hip joint is very susceptible to fracture because it's the main weight-bearing joint in our body, and it results in people not being able to ambulate.

III. Treatment Course

We divide patients into those who have one dominant site of metastasis and those who have multiple sites. With one dominant site, we may treat it with radiation to shrink the cancer cells down with about a 90 to 95% chance of success.

Palliative radiation for bone pain is highly effective. It can be repeated. It's a short course of treatment, and sometimes even a single dose is effective depending on the site. It can be combined with chemotherapy, hormone deprivation, and even bone stabilization techniques for patients who need a vertebroplasty.

Patients who have metastasis to many sites and pain in lots of places that is migratory and really bothersome would get chemotherapy or hormone deprivation therapy, but if their pain continues, we now can give an internal form of radiation. It's called samarium or Quadramet, and it is injected intravenously and goes to the places that are hot on the bone scan and actually delivers an internal radiation dose. It's quite effective, but one of the main side effects is that it lowers the blood counts a little bit so that it is very hard to do along with chemotherapy.

IV. Summary

Again, advanced prostate cancer requires a team approach with the urologist and the medical and radiation oncologist utilizing systemic and local therapies focusing on disease control and particularly quality of life with the idea that the treatments are individually tailored.