

Proceeding





# Using golden seed treatment of prostate cancer

### **Background/Objectives**

The objective of this work is to study the usefulness of gold seeds in the verification of treatment of prostate cancer, and analyze what correction protocols are most appropriate. Prostate Cancer usually treated with radiation therapy; often adversely affect the bladder or intestine to cause destruction of healthy cells surrounding the tissue affected by the tumor, due to the close proximity to other organs. The gold seed implant into the tumor tissue of the prostate, whose size is really "small", act as a pager, which would reduce the area very precisely irradiated with intensity very precise, thus allowing, exclusively attack tumor cells and killing these cells.

#### **Methods**

The marker used is a gold seed implant that is inserted inside the body, transrectal ultrasound guided is to be located in the affected prostate tissue. These implanted gold seeds are used to focus the radiation treatments for prostate cancer. Performing previous insertion of these seeds, function as a specific marker which allows limit thus very accurately irradiating the affected area, and thus reducing maximum healthy tissue that radiate treatment.

#### **Results**

The results obtained with the implementation of these gold seeds in the affected prostate tissue, show that the use of bright seeds act as locators, which allows reducing the number of complications and thus increases the effectiveness of treatment radiotherapy. This positive effect is produced to limit and minimize the irradiation field of X-ray beams generated by tissue damage to the area affected by the cancer cells dying to do. Gold seeds have no internal migration between them. That is why the simulations show the added convenience of correction protocols based on gold seeds. Since gold seeds are representative of the position of the prostate. To identify the area to be irradiated, the damage to healthy tissue surrounding the affected is imperceptible, which increases the radiation dose. Without affecting healthy organs surrounding the prostate.

#### Conclusion

With the new technique of using the gold seed in the management of prostate cancer, it was possible to make the treatment time is less and the effectiveness is increased. As well as side effects and complications are minimal and the patient's recovery is much faster and optimal (Figures 1-3).

## **Another alternative methods**

#### Interstitial radiation therapy or brachytherapy

Use seeds Oro

Better results to external radiotherapy

Less side effects.

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Figure 1 Example of gold fiducial markers of 5 mm length and 2 mm diameter.

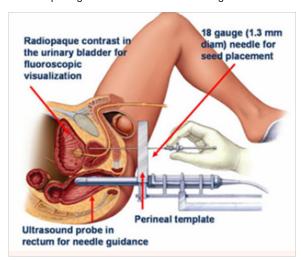


Figure 2 Insertion of gold fiducial markers by using 18 guage (1.3mm diam) needle.







 $\textbf{Figure 3} \ \ \textbf{Figure shows gold fiducial markers in urinary bladder}.$ 

## **Conflicts of Interest**

The authors declare no conflict of interest.

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