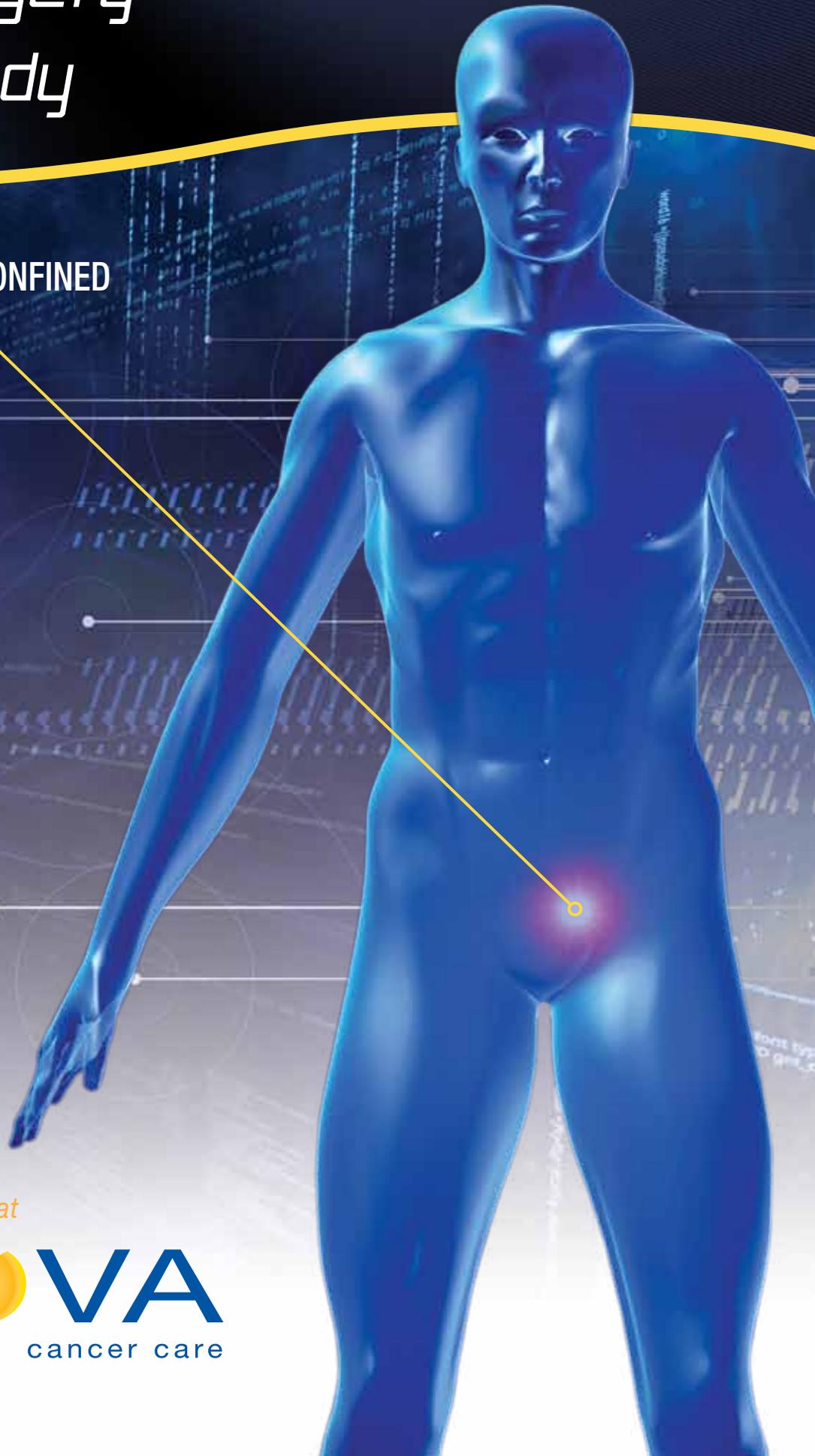


Radiosurgery Case Study

**LOW RISK, ORGAN-CONFINED
PROSTATE CANCER**



From the teaching files at

ANOVA
cancer care

Radiosurgery Case Study

Case History

In mid-2009 a 67 year old generally healthy and sexually active gentleman was noted to have a serially increasing PSA level. In 2007 his PSA was 2.4 ng/ml. In 2008 his PSA was 4.2 ng/ml. In 2009 his PSA had increased to 6.2 ng/ml. and he was referred for urological evaluation. The patient's physical examination was unremarkable. Biopsies of the prostate gland were recommended.

TRUS guided biopsies of the prostate gland revealed 4/12 cores that were positive for adenocarcinoma. The size of the prostate gland was 50.7 cc. The results of his evaluation indicated he had stage II adenocarcinoma of the prostate gland.

Treatment Options

Treatment options were presented to the patient and included surgery, external beam radiation therapy (IMRT, conformal) and CyberKnife stereotactic body radiation therapy (SBRT).

Current literature suggests that prostate cancer will respond favorably to hypofractionated radiotherapy due to the low α/β ratio of prostate cancer.^{1,2} Several groups have demonstrated that hypofractionation schemes for prostate cancer achieve excellent local control with minimal toxicity to the urethra and rectum.^{3,4} CyberKnife stereotactic radiosurgery has been shown to decrease prostate tumor volume and decrease PSA levels of human prostate cancer cells in a mouse model.⁵ Initial studies of CyberKnife monotherapy have shown beneficial effects, including decreased PSA results and minimal or no toxicities in patients with organ-confined prostate cancer.⁶

The patient selected CyberKnife SBRT because of its ability to control his cancer, lack of significant side effects and high probability of preserving sexual function. As a result, he was referred to Dr. Gregg Dickerson at Anova Cancer Care for further evaluation and discussion of treatment recommendations.



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Treatment Planning

The patient underwent fiducial placement by his urologist and one week later had a CT scan and 3 Tesla MRI of the pelvis for SBRT treatment planning. Utilizing this simulation data, Dr. Dickerson performed treatment planning designed to minimize dose to critical structures. Treatment was then delivered in 5 individual treatments, every other day, over 10 days.

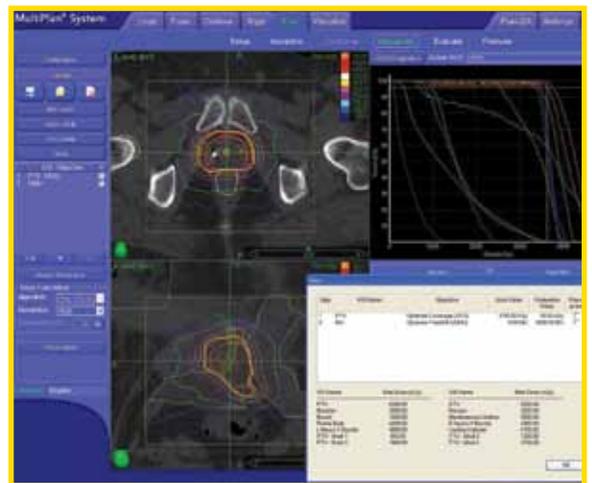
Outcome and Follow-Up

The patient had some mild acute lower urinary tract symptoms and no other problems associated with his treatments. Two weeks later his urinary tract symptoms had completely resolved and he felt the same as he had before his treatment.

Three years following completion of treatment his PSA level is 0.3 ng/ml and he has had no problems related to his course of CyberKnife SBRT. His urinary symptoms have continued to improve, and he reports no loss of sexual function. He is very pleased with his treatment and the results.

Conclusions & Commentary

CyberKnife SBRT produced an early and stable reduction in PSA in a patient with low-risk organ-confined prostate cancer with minimal acute urinary toxicities and no noted chronic toxicities to date. CyberKnife provides a convenient, minimally invasive option for patients with early-stage, organ-confined prostate cancer.



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About Us

Anova Cancer Care has grown to become the leading free-standing advanced radiation oncology center along the Front Range. With the most experienced CyberKnife clinical team in the region, we have developed a reputation among patients and physicians for outstanding results delivered in a caring, nurturing environment.

Over the past decade, the use of stereotactic body radiation therapy (SBRT) has been verified in dozens of clinical trials and cases nationwide. It has been adopted by the nation's leading hospitals, universities and medical centers, and is covered by Medicare and all major commercial insurances.

This is no longer an “experimental” technology. Patients enjoy comparable or better success rates to more invasive procedures. Treatments are performed much faster, much less expensively and with far fewer side effects than IMRT and other forms of radiation therapy.

Our ongoing mission is to provide highly effective cancer treatment that is less invasive and less disruptive to your patients' lifestyles. The physicians at Anova Cancer Care will continue to inform you of new developments related to cancer treatment, and provide relevant clinical information that you will find professionally interesting and highly useful for your patients.

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