

# **Brachytherapy of Prostate Cancer after Colectomy for Colorectal Cancer: Pilot experience**

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### **Abstract**

**Purpose:** To present a method of treatment for brachytherapy of prostate cancer using a three-dimensional stereotactic system and computed-tomography guidance in patients without rectum due to previous treatment for colorectal cancer.

**Materials and Methods:** From June 1994 to November 2003, a cohort of 800 patients treated with brachytherapy for prostate cancer, 4 patients were previously treated for colorectal cancer with external-beam radiation therapy (EBRT) 4500 cGy, abdominoperineal resection (APR) and chemotherapy, while one patient had APR alone for ulcerative colitis. Because of previous radiation therapy, these patients were not candidates for salvage EBRT or radical prostatectomy and have no rectum for transrectal ultrasound-guided transperineal brachytherapy or cryotherapy. A previously described three-dimensional stereotactic system was used for brachytherapy in these patients. The prescribed radiation dose was 120-144 Gy with iodine 125 seeds in rapid-strand format. Patient follow-up included clinical examination and serum PSA.

**Results:** Average follow-up was 18.6 months. Four patients had excellent biochemical control while one patient had biochemical failure. Patients did not experience any gastrointestinal morbidity. One patient developed stricture of the distal ureter requiring a stent.

**Conclusion:** Three-dimensional computed tomography-guided brachytherapy of prostate cancer in patients with prior colorectal cancer without a rectum is a feasible method of treatment.

***Introduction, Materials and Methods, and Results sections of the main text, Tables 1-3, and Figures 1-4, 6, 8 are omitted.***

## **DISCUSSION**

To our knowledge, there are no available publications for treatment of primary adenocarcinoma of the prostate with radiotherapy after treatment of colorectal cancer with EBRT, abdominoperineal resection and chemotherapy. Salvage radical prostatectomy has been described in patients failing primary radiation for prostate cancer but to our knowledge has not been reported in the setting a prior radiation and surgery for colorectal cancer.<sup>11</sup> In fact, in our small series, radical surgery of these patients was attempted and two patients and was unsuccessful in both.

It is interesting to note, that men who develop colorectal cancer are at increased risk of prostate cancer, with the greatest risk in men under the age of 65 (Relative risk approximately 2). Men with first primary colorectal cancer are more likely to develop prostate cancer than colorectal second primaries, and men who develop second primary prostate cancer are more likely to die of prostate cancer than colorectal cancer.<sup>13</sup> In addition, recent genetic evidence has suggested that patients with hereditary non-polyposis colon cancer (HNPCC) may have an increased risk of prostate cancer.<sup>14</sup> Prior to this publication, the recognized urologic tumor spectrum of HNPCC included ureteral and renal pelvis malignancies. Based on these findings, it would appear reasonable that patients scheduled to undergo abdominoperineal resection should have prostate cancer screening.<sup>15</sup>

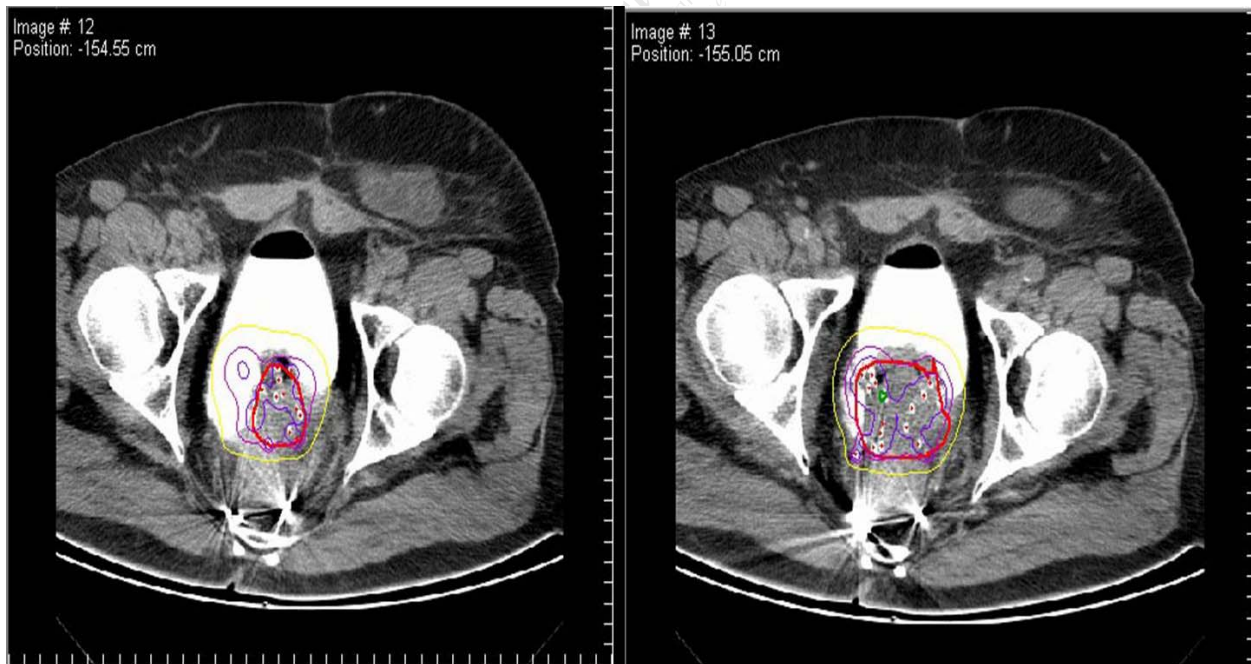
While this pilot experience focuses on treatment of prostate cancer in the setting, we must emphasize that this technique is also applicable to patients that are suspected of prostate cancer

based on PSA or other factors. In this setting, standard biopsy needles can be inserted through the template and under precise CT guided imaging, carry out prostate biopsies.

## CONCLUSIONS

Three-dimensional computed tomography-guided brachytherapy of prostate cancer in patients with prior colorectal cancer status post external beam radiation and abdominoperineal resection is a technically feasible method of treatment. Longer term follow-up and larger number of patients will determine the efficacy of this treatment.

Figure 5. CT dosimetry immediately post-implant of prostate cancer with no rectum.



The patient received 50 Gy 6 years prior to implant for colorectal cancer and the prescribed dose of 144 Gy for prostate brachytherapy. There is good coverage of the protruded median-lobe into urinary bladder.

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