

Apex sparing salvage HIFU in patients with radio recurrent prostate cancer: A pilot study

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Introduction

One third of patients treated with external radiation beam therapy (ERBT) for localized prostate cancer experience local recurrence, based upon PSA and biopsy. Salvage treatment options include prostatectomy, cryoablation, and high intensity focused ultrasound (HIFU). Whole gland treatment in these patients offers acceptable cancer control, but carries a risk of severe urinary incontinence (grade II-III). HIFU is the least invasive approach, and can be tailored with millimeter precision. Apex sparing HIFU maintains continence and can probably offer comparable cancer control to whole gland treatment. The aim of this study was to evaluate the effect of apex sparing HIFU in patients with local recurrence after ERBT.

Materials and Methods

Four patients (58-76 years) with positive MRI and biopsy diagnosed local recurrence and negative apex biopsy. Two patients were on androgen depletion therapy (ADT).

Gleason score 7b (2 pts), 8 (1 pt) and 10 (1 pt).

Pre-treatment mean PSA 4.4 ng/ml, range: 0.8-7.0.

Mean time from ERBT to HIFU: 6-10 years. Follow-up time 3 months.

MRI: 1.5T Avanto (Siemens, Erlangen) and body array coil. Sequences: ax3D T2w and DWI.

Post imaging processing program: Nordic ICE®.

Biopsies: 3D Sonoace, Medison® Korea, navigation system: Koelis® Grenoble, France.

Untreated margin (8, 8, 9 and 9mm) was based upon ultrasound measurements of the distance between the sphincter and the positive biopsies.

HIFU treatment: Ablatherm®.

Degree of urinary continence was measured by pads needed/day.

Results

All patients were continent after 3 months (no pads needed).

Mean PSA after 3 months was reduced from 4.4 to 2.6 ng/dl.

PSA change related to Gleason score: 7b(7.0-1.2), 7b(4.6-0.4), 8(0.8-0.1) and 10(5.1-8.9).

Only the patient with Gleason 10 was on ADT after treatment.

Conclusion

Apex sparing salvage HIFU can be beneficial in cases of negative apex biopsies in order to maintain continence. Further prospective clinical studies are needed to validate the method and long-term cancer control.