Tumor Recurrence After Whole Gland HIFU Ablation Of The Prostate Gland

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History:

- 74 yo
- Total PSA: 13.4 ng/mL
Initial MRI

Left distal apex lesion:
- PI-RADS 4 lesion
  - T2: 4
  - DWI: 4
  - DCE: + early enhancement
Initial MRI

Right midland extending to apex lesion:
- PI-RADS 4 lesion
  - T2: 4
  - DWI: 4
  - DCE: (-) early enhancement

T2WI = T2 weighted image; ADC = apparent diffusion coefficient; DCE = dynamic contrast enhanced; DWI = diffusion weighted image
Subsequent History

• MRI/TRUS fusion targeted biopsy:
  – Multifocal Gleason 3+4 prostate cancer (Left medial midgland and distal apex, right lateral midgland to apex peripheral zone)

• Whole gland High-Intensity Focused Ultrasound (HIFU) was performed

• Total PSA:
  – 3 months post ablation: 0.90 ng/mL
  – 6 months post ablation: 1.24 ng/mL
Repeat MRI
7 mo post HIFU

Status post whole gland HIFU. Atrophy of prostate gland with a small amount of residual prostate tissue remaining and regions of necrosis. Recurrent tumor in the distal apex demonstrating marked restricted diffusion and early enhancement (red arrows).

T2 WI = T2 weighted image; ADC = apparent diffusion coefficient; DCE = dynamic contrast enhanced; DWI = diffusion weighted image
Subsequent History:

- MRI/TRUS targeted fusion biopsy: Gleason 3+4 prostate cancer
- Focal HIFU was performed of the distal apex and Total PSA has remained stable at <0.20 ng/mL
Whole gland High-intensity focused ultrasound (HIFU) ablation has been used to treat localized prostate cancer in elderly or as salvage treatment of recurrent tumors.

Post treatment prostate glands are atrophic and often have necrotic regions. Some residual prostate gland may be seen.

Recurrent tumors are best seen on dynamic contrast enhanced images and often demonstrate restricted diffusion.

Clinicians want to know:
- Location and amount of residual prostate gland
- Size and location of recurrent lesions
References
