A Patient with Anterior, Apical, Transitional Zone Prostate Cancer Missed Twice by Standard Biopsy

Standard Biyopsi ile Iki Defa Kaçırılmış, Anterior, Apikal Tranzisyonel Zon Prostat Kanserli Olgu

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A 70-year-old male was referred to the Radiology Department to have multiparametric prostate magnetic resonance imaging (MRI) due to the increased prostate-specific antigen level (9.3 ng/mL) and two negative standard 12-core biopsy results. His digital rectal examination did not reveal any significant finding. He underwent multiparametric MRI, which consisted of high-resolution, T2-weighted, diffusion-weighted (ADC maps and b=1500), and dynamic contrast-enhanced imaging of the prostate. His scan was interpreted and scored according to Prostate Imaging Reporting and Data System (PI-RADS) version 2 and revealed an anterior, apical, transitional zone tumor measuring 14×10 mm that was hypointense on T2-weighted images (score of 4), was dark on ADC maps, was bright on high-b images (1500) (score of 4), and showed early arterial enhancement (positive) with highly suspicious extraprostatic extension (final PI-RADS score of 5) (Figure 1) [1]. The quantitative analysis results of the dynamic contrast-enhanced sequence on Syngo Workstation (Siemens, Germany) calculated with the pharmacokinetic model by Tofts were Ktrans=0.16, Kep=0.34, Ve=0.46, iAUC=0.17, and chi²=0.10 and were not as high as aggressive prostate cancer perfusion parameters (Figure 2) [2, 3].

Figure 1. a-d. A 70-year-old male patient. An anterior, apical, transitional zone tumor was hypointense on the high-resolution T2-weighted image (a), was bright on the high-b image (arrow showing the tumor) (b), showed early enhancement (c), and was dark on the apparent diffusion coefficient map (d).
This case of prostate cancer is one the most difficult to be caught by random 12-core standard biopsy due to its apical and anterior location. As shown in this case, multiparametric prostate MRI is very helpful to identify the tumor location and be a guide for targeted biopsy.

Informed consent was obtained from the patient for the publication of this image of interest.

**Figure 2.** a, b. A 70-year-old male patient. An anterior, apical, transitional zone tumor region of interest drawn on the T2-weighted image (a) and quantitative analysis results and concentration curve (b) are shown.

**References**

