

## Prostate Cancer in Times of Magnetic Resonance: Literature Review and Case Report

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### ABSTRACT

Ultrasound-guided prostate biopsy represents the simplest and cheapest form of radiological modalities at present in the face of clinical suspicion of prostate cancer. In some highly specialized centers, it is performed by means of magnetic resonance imaging, and even characterization of suspicious lesions prior to the transrectal biopsy, thus intentionally oriented towards the region of interest.

Reporting the case of a patient with clinical suspicion of prostate cancer, who underwent 3 biopsies, one outside our unit, in which the diagnosis could not be concluded, the second already in our hospital with a negative result for malignancy. The third was intentionally after performing an MRI where a suspicious Pi Rads 4 lesion was observed at the level of the anterior right transition zone, in which the final diagnosis for acinar adenocarcinoma pathology was obtained. Concluding that the use of prostatic magnetic resonance imaging when suspected of prostate cancer, helps us to avoid taking repeated biopsies, avoiding the delay in the diagnosis of the patient, as well as the discomfort that the procedure implies. However, in underdeveloped countries the extensive use of it is limited.

**Keywords:** Prostate cancer, Prostatic magnetic resonance, PI-RADS, Prostatic biopsy

### ABBREVIATIONS

MR: Magnetic resonance; PI-RADS: Prostate Imaging-Reporting and Data System; PET/CT: Positron emission tomography

### CASE REPORT

This is a 57-year-old male patient who came to our hospital with clinical suspicion of prostate cancer, with an elevation of 30.82 ng specific prostate antigen on May 1, 2018, as well as rectal examination with right prostatic induration and lamellae. prostate biopsy performed in another hospital unit, which were reviewed by a medical oncologist-pathologist in our unit, identifying connective tissue without acinar component.

Before which a new biopsy is taken in our hospital unit August 10, 2018, with the result: Tissue sent without evidence of neoplastic cells (**Figure 1**).

Therefore, the attending physician requested a new prostate antigen test with a result of 46.31 ng, given this, a new biopsy is scheduled (seventeen samples in total), 9 right (anterior apex, medial, medial and lateral apex, medial base, lateral and 2 of the intended transition zone) and 8 lefts (**Figure 2**) appropriately. labeled and with verification of

patient data by nurse on August 24, 2018, as well as MRI prior to it for intentional search (**Figure 3**) with Pi Rads 4 node at the level of the right transition zone and PET / CT without evidence of distant disease.

Days after the analysis of the result by a medical oncologist and pathologist on August 31, 2018, it was found:

Right lamella: Acinar adenocarcinoma with a Gleason score

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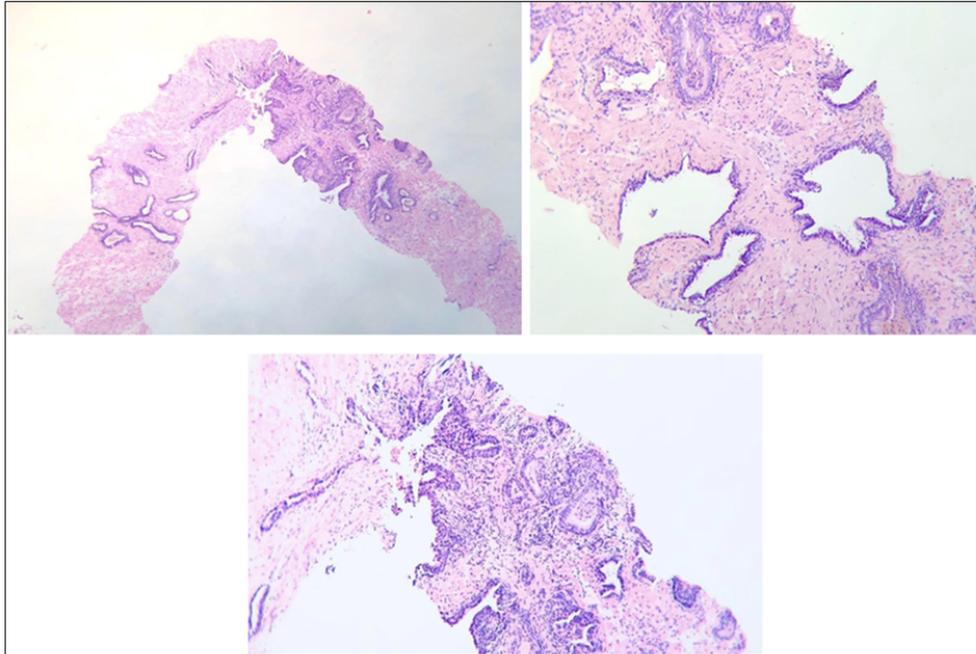
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of 9 at the transition zone level.

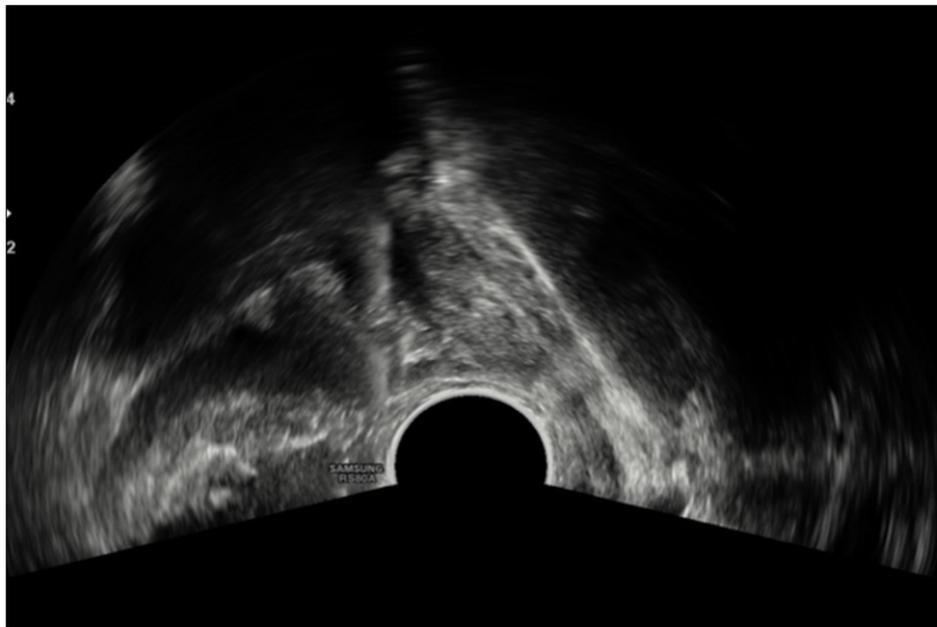
With a final diagnosis of high-risk T4 prostate cancer, Gleason 9, who was a candidate for radical radiotherapy plus total androgen blockade for 2-3 years, last prostate antigen

control of 0.2 ng in November 2018, initial 46.31 ng, currently in monitoring and surveillance.

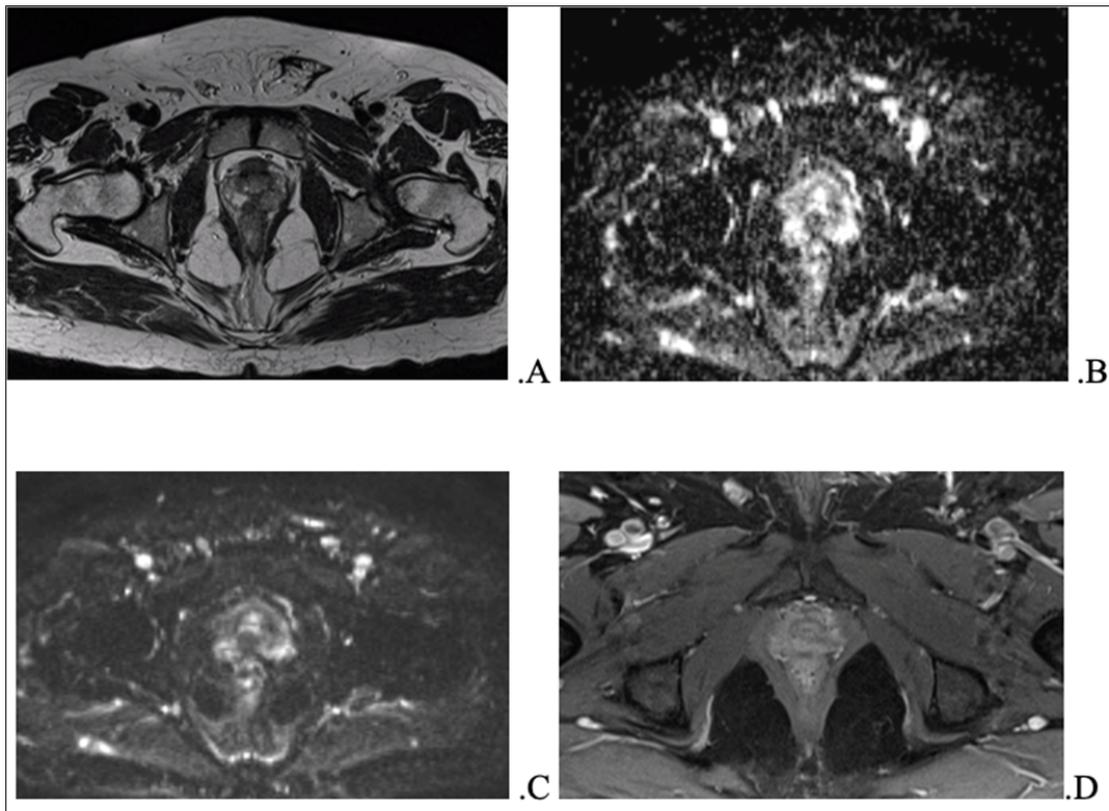
At the moment with excellent response to treatment. No urinary or rectal symptoms.



**Figure 1.** Cuts of the prostatic parenchyma, with cystic dilation covered by flat to cubic cells without atypia, some with an infiltrate consisting of neutrophils (inflammatory infiltrate).



**Figure 2.** Prostate gland biopsy in a sagittal section with a needle at the level of the right transition zone.



**Figure 3.** Prostate MRI in sequence T2, ADC, Diffusion and T1 with contrast. In T2 sequence (A) hypo intense image is visualized at the level of the right transition portion with extension to the left and markedly to the ipsilateral peripheral area, which are correlated in ADC and Diffusion map (B and C), after administration contrast there is a heterogeneous enhancement(D).

**DISCUSSION**

Since the introduction of an imaging guide for taking a prostate biopsy, there have been publications about the use of these, some authors focused on first-time use of transrectal ultrasound, to which a variable sensitivity has been documented in a study carried out in the 2012 (39-52%) [1], this because part of the technique involves taking samples from different anatomical regions, that is, not from any specific lesion, like in this case for example [2].

With the use of magnetic resonance imaging in patients with suspected prostatic cancer, it has been reported that this underestimates 21% of pathological lesions [3], which still results in a lower percentage when compared with the use of ultrasound, the latter limited for anterior and apical nodules. The PI RADS -ACR system, which reports a sensitivity of up to 92% [4], allows us to categorize suspected magnetic resonance lesions, helping to carry out more directed sampling by transrectal biopsy, thus avoiding the performance of multiple procedures, as is the case of our patient, even more in the context of high clinical suspicion.

Currently, software has been developed for performing prostate biopsy by fusion of magnetic resonance and

transrectal ultrasound, which results in higher detection of clinically significant cancer [5], which, however, are not entirely available in underdeveloped countries, being This is a limitation for the extensive use of it.

In this sense, the use of simple magnetic resonance imaging with lesion categorization by means of PI-RADS, before taking a transrectal ultrasound, is recommended as long as the available resource exists.

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