MpMRI of Prostatic Leiomyoma and Simultaneous Indolent Prostatic Cancer: Clinical Case Report
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Introduction

More than 95% of malignant tumours of the prostate are adenocarcinomas [1]. However, numerous rare morphological variants of prostate tumours have been identified during the past two decades [1].

Even though these tumours present with signs and symptoms that resemble those of usual prostate adenocarcinoma, they may have a different prognosis. [2]

The pure leiomyoma of the prostate is a very rare entity [3]. Only a few case reports have described radiological findings. Up to our knowledge there are a no multiparametric MRI cases described.

Case report

A 69-year-old male was referred to urology department while presenting moderate prostate symptoms. The international prostate symptom score (IPSS) was calculated as 10 (moderate). Prostate volume – 46cc. Prostate specific antigen (PSA) was normal – 0.766ng/ml. Lesion of about 2.2cm was observed in left lobe on TRUS examination. DRE detected rigid node in left lobe. 10 core biopsy was performed. Adenocarcinoma Gleason 3+3 was found in two cores (10 and 15 percent) in right lobe. Prostate tissue was normal in all other cores. Discrepancy between clinical findings (rigid nodule in left side) and histology (adenoCa in right side) was found. Patient was sent to MRI examination. Multiparametric MRI was done in accordance with Pi-Rads recommendations. Examination was performed with 3 Tesla MRI device, with multichannel (18ch) abdominal coil.

Examination protocol included high resolution anatomical T2 sequences and all 3 directions, diffusion weighted (DWI) sequences (b value – 50, 400, 1000 and ADC calculation), dynamic contrast enhanced (DCE) sequence. In addition T2_tru_fat_saturation, T1_tru_lymph_node and T2_cor_tirm (bones) sequences were added.

Two lesions were found on MRI examination. Typical cystic hyperplastic nodule, about 19mm, was found on the right side of the middle level of transition zone (TZ). Another lesion, about 25x19mm size, was seen in TZ left side anterior part of basal level, involved anterior fibromuscular struma (Fig.1). Anterosuperior wall of prostate protruded by nodule, but was not infiltrated.

Discussion

Leiomyoma of the prostate was first reported in 1876 by Lebec and true prostatic leiomyoma was specifically defined by Kaufman and Berneike [1]. In this definition, it was expressed that it is a circumscribed or encapsulated mass of smooth muscle, 1 cm or more in diameter, containing varying amounts of fibrous tissue but devoid of glandular elements and which is either obviously prostatic or juxtaprostatic in origin and position [4]. Leiomyoma can develop in all organs containing smooth muscles. It is more common in the gastrointestinal tract and the female genital tract. The clinical presentation of prostatic leiomyoma is identical to the benign prostatic hyperplasia. The final diagnosis is based on histological arguments.

The recognition of this benign entity and the distinction of other neoplasms has important therapeutic and prognostic implications. In our case, benign prostatic tumour in combination with indolent cancer, was mimicking clinically significant disease. Revised literature revealed that there are no specific clinical, biological, and imaging characteristic’s of true prostatic leiomyoma. We believe, state-of-the-art MRI scan technologies, like multiparametric MRI, in combination with guided (MRI, MRI fusion or cognitive fusion) biopsy technique could help differentiate entity of prostatic tumours.

Conclusion

In case of a well delimited nodule inside the prostate, homogeneous and isointense in relation with the muscle on T1 and T2, with slow enhancement after the gadolinium administration and low PSA level, the leiomyoma must be included in the differential diagnosis.

References