Oncology

Phyllodes tumor of the prostate: Long-term follow up of a rare condition

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ABSTRACT

We describe an extremely rare case of Phyllodes tumor of the prostate in a 35-year-old man. The patient was referred to our hospital for the recurrent episodes of urinary retention. He complained of severe obstructive lower urinary tract symptoms and dysuria. Serum prostate-specific antigen (PSA) was within the normal range. Transabdominal ultrasonography showed a few heterogeneous echoic areas in a 110-gm prostate and some cystic areas with invasion to the urinary bladder.

In the past, transurethral resections of the prostate (TURP) had been performed for him twice and microscopic examination of the specimens had shown cystically dilated glands consisting of bizarre cells with nuclear atypia. Finally, radical retropubic prostatectomy was performed against the recurrences of the tumor.

Here we describe the morphological features and immuno-histochemical presentations of Phyllodes tumor of the prostate and its long-term follow-up in the patient.

1. Introduction

Phyllodes tumor of the prostate, first described by Cox and Dawson in 1960, is an uncommon tumor.\(^1\) This tumor has been termed various other names, including cystic adenoma of the prostate, cystadenoleio-myo-fibroma, cystic epithelial-stromal tumor, phyllodes type of atypical hyperplasia and cystosarcoma phyllodes. It is histologically similar to phyllodes tumor of the breast with a distinctive biphasic pattern of hyperplastic epithelium-lined cysts, leaf-like intraluminal epithelial-lined stromal projections, compressed and elongated silt-like epithelial-lined spaces, and variable cellular spindle cell stroma, at times with subepithelial condensation with or without atypia. The epithelial lining typically is bland with a secretory cell layer and a basal cell layer.\(^2\)

The clinical significance and management of prostatic phyllodes tumor are uncertain. The clinical course has not been well defined since the most reported cases have little or no follow up. Most reports describe the phyllodes tumor as a variant of hyperplasia (phyllodes-type hyperplasia), whereas other cases have been described as malignant phyllodes tumors (cystosarcoma phyllodes) based on the presence of numerous mitotic figures and prominent cytological atypia. Precise criteria for separating benign and malignant tumors have yet to be clearly defined.

Here we describe the morphological features and pathological presentations of phyllodes tumor of the prostate and its long-term clinical follow-up.

2. Case report

A 35-year-old man was admitted to our hospital, approximately 12 years ago, complaining of severe obstructive lower urinary tract symptoms and dysuria. He was experiencing difficulties in urination over a period of 4 months before the admission. Digital rectal examination showed a large and stony-hard tumor mass over the anterior wall of his rectum. Transabdominal ultrasonography showed a few heterogeneous echoic areas in a 110-gm prostate and some cystic areas with invasion to the bladder neck. While magnetic resonance imaging (MRI) revealed a 25 mm well-circumscribed solid tumor with focal calcification in the prostate (Fig. 1).

Serum prostate-specific antigen (PSA) was within the normal range. Transurethral prostatectomy (TURP) was done once, which was not successful; and again, within a month, the second TURP was performed. However, after two months, the patient was catheterized again. Ultimately, 3 months after the first admission, the prior surgical specimens were reevaluated again in our histopathology department precisely and based on the diagnosis of the prostatic stromal tumor, radical retropubic prostatectomy was performed consequently. During the surgery, the prostate was felt to be an unusually gray-brown polypoid cystic mass without capsule formation while the bladder neck was found to be

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invaded by the tumor.

3. Pathological findings

On transection of the specimen, an irregular polypoid shaped mass measuring 2 cm in greatest diameter was observed in the right lateral posterior lobe of the prostate, showing cystic areas. In the histologic exam, a biphasic neoplasm with dominant stromal component showing mild hypercellularity making frequent leaf-like projections were evident. Also, some cystic spaces were seen, all lined by bland-looking epithelial cells. The stromal spindle cells were devoid of atypia and showed less than 1 mitosis/10 HPF. Necrosis was absent. The stromal cells were focally positive for Desmin. The luminal epithelial and basal cells were positive for PSA and 34βE12 in IHC study, respectively. Based on all findings, the diagnosis of low grade (benign) phyllodes tumor was made (Fig. 2).

Periodical close follow-up was planned since Phyllodes tumor of the prostate has malignant potential and a high recurrence rate. However, in our patient, no evidence of recurrence was found during the 12-year follow-up after the radical prostatectomy.

4. Discussion

Phyllodes tumor of the prostate is a rare lesion that has been referred to by various terms, including prostatic cystic epithelial-stromal tumor, the phyllodes type of atypical hyperplasia, cystadenoleiomyofibroma, STUMP (stromal tumor of uncertain malignant potential), PSTUMP (prostatic stromal tumor of uncertain malignant potential) and cystosarcoma phyllodes.

The patients typically present with the recurrent urinary obstruction even after resection of the tumor. Severe obstructive lower urinary tract symptoms often occurring at a younger age than expected for the typical symptomatic benign prostatic hyperplasia, like our case, is the presenting scenario in some of the patients.

Histologically, phyllodes tumor of the prostate resembles its counterpart in the breast, which is a biphasic stromal and epithelial tumor. The stromal component can show variable cellularity with occasional sub-epithelial condensation.

Although the classification has not been well validated, the amount of cellularity, mitotic figures, necrosis and stromal to epithelial ratio are usual indicators used to assign tumor grade. The epithelial lining is benign and may show metaplastic or proliferation changes such as squamous metaplasia or basal cell hyperplasia.

Important histologic diagnostic clues include variable cellular stroma surrounding cysts and compressed elongated channels with frequent leaf-like configuration.

Benign Phyllodes tumors are considered to have potent proliferative activity in the prostate, but no metastatic potential. Malignant tumors exhibit greater cellularity, mitotic figures, necrosis, and stromal overgrowth, and can metastasize to the lung and bones. Diagnosis in needle biopsy is difficult and usually is based on the resected specimen.

Local recurrence after the simple resection of Phyllodes tumor has been reported repeatedly even though it was benign pathologically. Radical prostatectomy is one of the treatment options to prevent recurrent obstructive symptoms.

In summary, this case represents the morphological and immunohistochemical presentations of Phyllodes tumor of the prostate and its long-term follow-up in a young male patient.
Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.eucr.2019.101015.

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