Case Report

Prostate Basal Cell Carcinoma: A Case Report

Sahoko Ninomiya^a Takashi Kawahara^a Hiromichi Iwashita^b
Genta Iwamoto^a Daiji Takamoto^a Taku Mochizuki^a
Shinnosuke Kuroda^a Teppei Takeshima^a Koji Izumi^a
Jun-ichi Teranishi^a Yasushi Yumura^a Yasuhide Miyoshi^a Takuo Asai^c
Hiroji Uemura^a

^aDepartments of Urology and Renal Transplantation, Yokohama City University Medical Center, Yokohama, Japan; ^bDepartment of Diagnostic Pathology, Yokohama City University Medical Center, Yokohama, Japan; ^cDepartment of Urology, Ohguchi Higashi General Hospital, Yokohama, Japan

Keywords

Prostate basal cell carcinoma · Basal cell cancer · Dysuria · Non-adenocarcinoma

Abstract

Prostate basal cell carcinoma (PBCC) accounts for 0.01% of all prostate cancers. A 68-year-old man complained of dysuria for 5 years on his initial visit. His PSA level was 3.87 ng/mL. Due to a diagnosis of benign prostate hyperplasia, he underwent transurethral resection of the prostate. A pathological examination revealed that basal cell-like atypical cells made alveolar with palisadal layout. Immunohistochemical analysis showed positive 34β12, P63, and Ki-67. Based on these findings, PBCC was diagnosed. Then, we performed radical prostatectomy. He was free from recurrence 22 months after the operation. We herein report an extremely rare case of PBCC.

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Introduction

Prostate basal cell carcinoma (PBCC) accounts for 0.01% of all prostate cancers. PBCC usually shows no PSA elevation, and in most cases, PBCC is diagnosed by chief complaints of lower urinary tract symptoms or gross hematuria [1–3]. A diagnosis of PBCC is difficult based on a pathological examination using hematoxylin and eosin staining alone, and immunohistochemical staining is typically needed [4]. We herein report an extremely rare case of PBCC.

Case Presentation

A 68-year-old man complained of dysuria for 5 years in his initial visit. His PSA level was 3.87 ng/mL. Due to a diagnosis of benign prostate hyperplasia, he underwent transurethral resection of the prostate. Histopathology of the resected specimens suggested PBCC.

He was referred to our hospital for further treatment. Because of the lack of any findings of distal metastasis, he received radical prostatectomy in December 2016 (Fig. 1). A laboratory examination showed values within normal limits for PSA, SCC, and NSE (<0.01, 0.8, and 13.3 ng/mL, respectively).

A pathological examination revealed that basal cell-like atypical cells made alveolar with palisadal layout (Fig. 1, 2). Immunohistochemical analysis showed positive 34β12, P63, and Ki-67 (Fig. 3). Bcl-2 also showed positive expression in PBCC. Based on these findings, PBCC was diagnosed. No tumor cells were observed in the dissected lymph nodes. He was free from recurrence 22 months after operation.

Discussions

PBCC is a rare disease, accounting for 0.01% of all prostate cancers [1]. It was first described in 1974, and thus far, fewer than 100 cases have been reported [2, 4–7]. Previous reports on PBCC have noted a mean age of 50–64 years, but a wide age range from 28 to 78 years has been described. Although categorized as prostate cancer, most patients show normal PSA levels [2, 4, 7–10]. PBCC usually shows heterogeneity, like prostate adenocarcinoma, on T2-weighted magnetic resonance imaging (MRI) [11]. In the present case, MRI detected T3 stage and no apparent lymph node metastasis (Fig. 4). The patient's chief complaints were lower urinary tract symptoms, gross hematuria, and a hard prostate nodule [8, 12]. PBCC was incidentally diagnosed using specimens from TUR-P, which had been performed for his lower urinary tract symptoms.

Histologically, infiltrating basaloid cells form dilated acinar and cribriform spaces with occasional glandular, trabecular, or solid areas [9, 10]. Stearns et al. [10] reported a case of basal cell carcinoma appearing as a neuroendocrine tumor that was treated with etoposide and cisplatin chemotherapy. PBCC usually arises from the transitional zone of the prostate, and a pathological diagnosis can be difficult, with immunohistochemical staining typically needed [1]. The basal cell lesions are positive for p63 and cytokeratin (34bE12). Ki-67 is used to detect malignancy, and a higher expression of Ki-67 (more than 20%) is needed to detect PBCC [1, 2]. HER2 has been reported to be positive in some cases of PBCC, but negative cases have also been reported, so HER2 is not used for diagnostic purposes. Trastuzumab has been administered in some HER2-positive cases but has shown no efficacy [13].

Reported treatments for PBCC include radical prostatectomy, chemotherapy, and radiotherapy. Radical prostatectomy might be a curative treatment option for localized prostate cancer [10, 14]. Direct invasion to the surrounding organs and liver metastasis have been reported at the time of the diagnosis, so radical prostatectomy was not able to be performed in most cases. Cases treated with radiotherapy, systemic chemotherapy, hormonal therapy, and surgical castration have been described, but no adequate therapy has been established. Androgen receptor was negative in some reported PBCC cases, and hormonal therapy including bicalutamide was not found to be effective [13]. Our case was also negative for androgen receptor. However, no other established treatments have been reported.

Metastatic lesions have been reported in the liver and lung [6]. At the time of the diagnosis, the present case had no invasion and no distant metastasis, so radical prostatectomy was performed. Due to the lack of evidence supporting adjuvant therapy, follow-up CT has been performed every 3 months. The patient was free from recurrence 15 months after operation.

Conclusion

We encountered a case of PBCC diagnosed by the evaluation of a specimen obtained through TUR-P, and the patient was free from recurrence 15 months after radical prostatectomy.

Statement of Ethics

The present study was approved by the IRB of Yokohama City University Medical Center and written informed consent was obtained from the patient for publication of this case report and any accompanying images.

Disclosure Statement

The authors declare no conflict of interests.

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Fig. 1. Surgical specimens of the prostate. The red areas show prostate basal cell carcinoma.

Fig. 2. HE stain. Prostate basal cell carcinoma is indicated by an arrow.

Fig. 3. Immunohistochemical analysis showed positive 34β12 (a), P63 (b), and Ki-67 (c).

Fig. 4. MRI of the prostate: T1-weighted imaging (a), T2-weighted imaging (b), and diffusion-weighted imaging (c).