

# Metachronous anterior urethral metastasis of prostatic ductal adenocarcinoma

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Prostate cancer is increasing in frequency in Korea. Among them, ductal adenocarcinoma (DCP) has a more aggressive and poor prognosis than acinar adenocarcinoma (ACP), despite its low incidence. Patients usually present with symptoms of lower urinary tract symptoms and hematuria due to increasing tumor mass within the lumen of the prostatic urethra, making diagnosis of DCP by the transrectal prostate biopsy difficult. DCP is often metastasized at the time of diagnosis. DCP is transferable to most other organs but the metastasis to the anterior urethra is rare. There is no doubt that localized DCP requires radical prostatectomy (RP) but the guidelines for adjuvant therapy after RP have not yet been established. Methods of the treatment are confounded by individual differences, and arriving at a consensus is challenging due to insufficient data. We report a case of DCP and urethral metastasis after RP, thus aiding in the determination of treatment guidelines.

**Key Words:** Adenocarcinoma, Hematuria, Prostate cancer, Prostatectomy, Urethra

Ductal adenocarcinoma (DCP) a variant of acinar adenocarcinoma (ACP), mainly occurs in patients aged 60-70 years. It is a very rare disease accounting for approximately 0.1 to 1% of all prostate cancers.<sup>1-3</sup> Although its progress is more aggressive than the acinar type, guidelines for its treatment and follow-up have not been confirmed yet. According to Meekset al., the prevalence of ductal type prostatic cancer has continuously increased in the last few decades and many studies will be needed in the future.<sup>1</sup> DCP usually starts growing like a papillary tumor in

the prostatic urethra resulting in symptoms of hematuria and dysuria.<sup>4</sup> This tumor is known to be primarily transferred to the testis, penis, bone and lung as papillary and/or cribriform growths.<sup>4</sup> Despite tumor recurrence, serum prostate specific antigen (PSA) values may not increase in many patients, therefore a close follow up through a variety of validation methods is required postoperatively.<sup>5</sup> Localized DCPs have relatively high recurrence rates and generally poor prognosis after radical prostatectomy (RP). Histologically diagnosed DCP shows a similar

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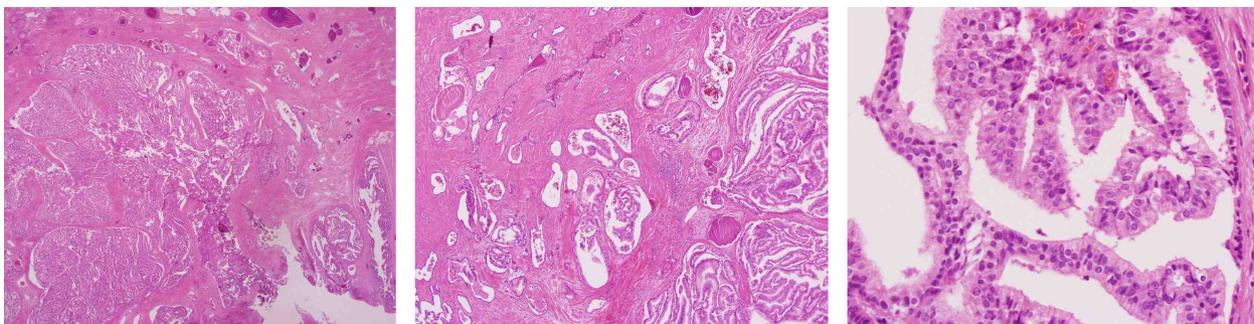
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course and prognosis as ACP with Gleason sum score 8 (4+4), hence there is a state of contention about the necessity of additional adjuvant radiation therapy, chemotherapy, or hormone therapy after RP.<sup>1</sup> We report a case of localized DCP with an anterior urethral metastasis and an elevated PSA value after RP. This mass was removed by transurethral resection, and follow up PSA declined to basal values.

## CASE

A 54-year-old male patient presented with gross hematuria at our hospital 6 years ago. A prostatic urethra papillary mass was detected on cystoscopy, and the PSA level was 2.16 ng/ml. The patients received a transurethral resection of the prostatic urethra, and pathologic finding was a DCP of mixed cribriform and papillary pattern. There was no evidence of metastasis in compu-

terized tomography (CT) and bone scan; therefore, we performed a RP, and made a final diagnosis of DCP invading both lobes of the prostate (Fig. 1). The seminal vesicle and lymph node was not involved. The surgical resection margin was negative for malignancy. PSA was 0.03 ng/ml at the third month postoperatively. Subsequently, the patient was lost to follow-up. Five years after radical prostatectomy, the patient returned to our hospital with gross hematuria. Cystourethroscopy revealed a papillary mass on the anterior urethra (Fig. 2A). PET-CT showed normal findings. PSA level was elevated to 0.653 ng/ml. The patient received a transurethral resection of the urethral mass (Fig. 2B). PSA decreased to 0.050 ng/ml postoperatively. DCP was confirmed histopathologically (Fig. 3). Immunostaining findings from the existing prostate cancer showed positive for PSA and negative for high molecular weight cyto-keratin, p63 and cytokeratin 20. There was no recurrence until the one year postoperatively.



**Fig. 1. Prostatic ductal adenocarcinoma**

Expanding and infiltrating adenocarcinoma is composed of tall columnar cells with abundant amphophilic cytoplasm, pseudostratified arrangement of nuclei and prominent or visible nucleoli. (H-E stain, x12, x40, x400)

## DISCUSSION

DCP manifests as a 'worm-like' shape heliophytic, villous/polypoid growth by cystoscopy, and is mainly found around the urethra and verumontanum.<sup>4</sup> The mass protruding into the prostatic urethra causes more symptoms of hematuria or dysuria than ACP. Catalona et al. classified DCP into 4 groups: 1) transitional or

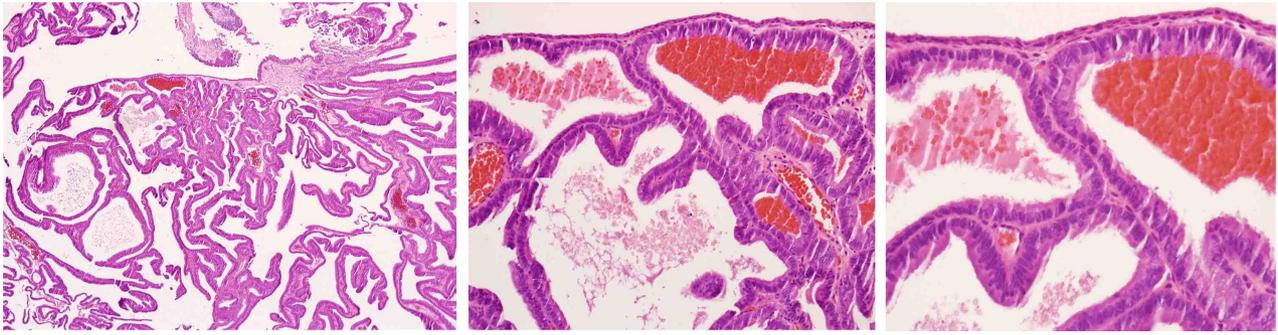


Fig. 2A. The mass in the urethra was showed a papillary shape by cystoscopy.



Fig. 2B. The papillary urethral mass was removed by the trans urethral resection.

squamous cell carcinoma 2) Intraductal adenocarcinoma 3) Endometrioid carcinoma and 4) mixed ductal carcinoma. Recently Ohyama et al. reported an additional form which had characteristics that were intermediate to the transitional cell carcinoma and adenocarcinoma.<sup>6</sup> Meeks et al. compared DCP to ACP in the US. The important finding was that there were no differences in age, PSA, and ethnicity. However, at the time of diagnosis, DCP was more likely to have spread to other organs, and showed a 3-fold higher prostate cancer-specific mortality than ACP.<sup>1,7</sup> Based on these findings, the recent opinion that aggressive adjuvant therapies are indicated even in the case of localized DCP is gaining popularity.<sup>1</sup> In this case, radical surgery was performed on diagnosis of localized DCP, and thereafter there was recurrence in the anterior urethra, this was a very rare occurrence. According to Shi-Ming Tu et al. the recurrence rate of localized prostate ductal cancers after RP, was 13 in 75 cases. Recurrence occurred mainly in the bladder, rectum, and prostatic fossa, with the 1 case in the urethra according to one report.<sup>4</sup> In our case, the tumor was a localized DCP. PSA declined to 0.03 postoperatively, but urethral metastasis occurred 5 years postoperatively. However, Aydin et al. reported that DCP diagnosed by a transurethral biopsy or resection did not necessarily imply that the disease was aggressive; rather they recom-



**Fig. 3. Urethral ductal adenocarcinoma**

**This polypoid ductal adenocarcinoma shows large large glands lined by tall pseudostratified columnar cells (H-E stain, x12, x200, x400)**

mended that the disease progress should be monitored by transurethral resection of prostate (TURP) and transrectal ultrasonography-guided prostate biopsy before radical surgery.<sup>3</sup> The method of treatment usually depends on the physician's preference and the patient. However, RP is considered necessary in localized cancer.<sup>8</sup> In the English literature, only 1 additional case was reported in Korea, since Kim et al. first reported a patient with LUTS (low urinary tract symptom) who was diagnosed with DCP of the prostate. Furthermore, there have been no studies on metastasis or recurrence.<sup>9</sup> We removed the recurrent mass from the anterior urethra; there after the elevation levels of PSA declined. Currently, DCP has reported high recurrence rate and malignant prognosis, and continuous close patient observation is necessary.

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