

# Prostate Cancer with Solitary Metastases to the Bilateral Testis

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We present the case of an 81-year-old patient with testicular metastasis from prostate carcinoma. After the initial diagnosis of prostate cancer, he had an 8-year course of hormonal therapy and showed no clinical evidence of metastasis to other organs. Asymptomatic metastasis of prostate carcinoma to the testis is a rare clinical condition. We diagnosed his condition, based on histopathology following a subcapsular orchiectomy and transurethral resection of the prostate.

**Key Words:** Testis, prostatic carcinoma, metastasis

## INTRODUCTION

Autopsy results show that the incidence of secondary testicular tumors ranges from 0.02 to 2.5%.<sup>1</sup> Furthermore, testicular metastasis from prostatic carcinoma is rare. We report a patient who was diagnosed with localized prostatic carcinoma, treated with hormonal therapy, and later diagnosed with metastasis to the bilateral testis. The metastasis was asymptomatic and incidentally detected after bilateral orchiectomy. There was no additional metastasis detected in other organs.

## CASE REPORT

Eight years ago, a 73-year-old man, referred by his general practitioner, presented with a 1-year history of complaints of lower urinary tract symptoms, including increased frequency of urination, nocturia, and weak urinary stream. At that time, the patient received a transrectal ultrasound-guided prostate biopsy due to elevated PSA of 10.8 ng/mL that revealed adenocarcinoma in two of the six specimen cores. The adenocarcinoma had a Gleason score of 3 + 3 and an estimated prostate volume was 25 gm. A metastatic evaluation of the chest, abdomen, pelvis, and bone was negative. As the patient did not want surgical treatment at that time, he was treated with monthly injections of LHRH agonist at private clinics and had no evidence of an increasing prostate specific antigen (PSA). After 8 years, he revisited our department, presenting with aggravated irritative and obstructive urinary symptoms. An increased postvoid residual urine volume of 180 cc was noted. His PSA was 9.3 ng/mL, and serum testosterone concentration was measured to deter-

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mine whether he was indeed castrated and found to be 0.65 ng/mL. There were no other specific clinical symptoms to suggest metastases of the prostate cancer. A physical examination of the testis and scrotum was normal. Metastatic evaluations, including a bone scan, were negative. Considering his poor health and old age, we suggested and performed a bilateral subcapsular orchiectomy for hormonal management and a palliative transurethral resection of the prostate, rather than a radical prostatectomy, to relieve his urinary symptoms.

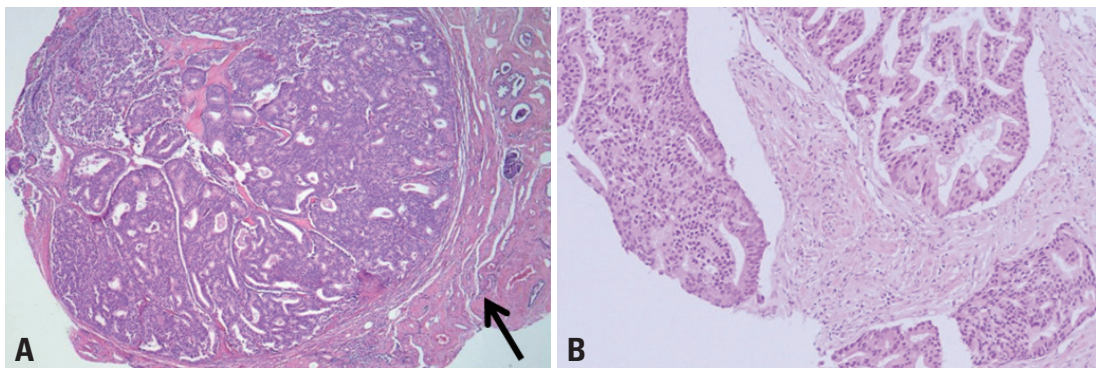
A histopathological analysis showed that the testis and resected prostate were infiltrated by metastatic adenocarcinoma that had a Gleason score of 4 + 3 (Fig. 1). Tumor cells showed a strong positive stain for PSA and p504s (Fig. 2). An androgen receptor block was initiated following the surgery. At the 2-month follow-up exam, his total PSA had decreased to 0.8 ng/mL. It has now been 20 months since the surgery, and his PSA was elevated with 2.87. The rate of PSA rising seems to be around 0.10 ng/mL per month.

## DISCUSSION

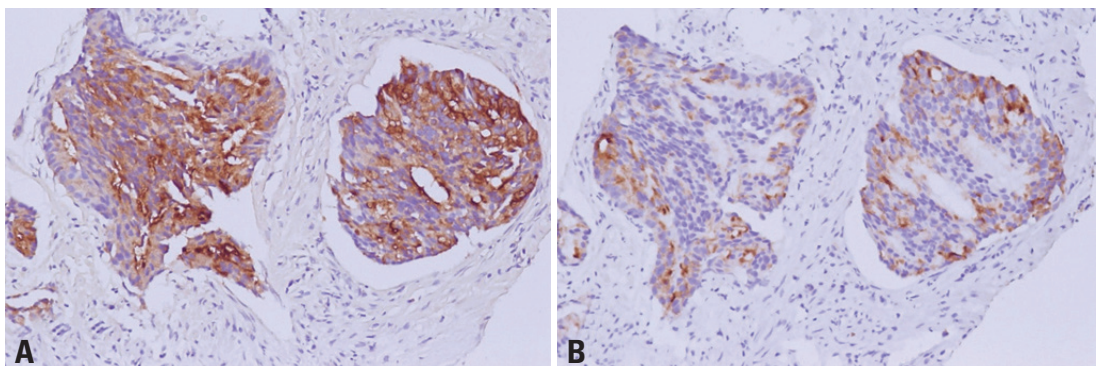
Prostate cancer metastasizes more commonly to the lymph

nodes, bone, lung, liver, bladder, or brain, but rarely to the testis.<sup>1,2</sup> This is a case of asymptomatic metastases of prostate cancer to the bilateral testis with no metastasis to other organs, and it was incidentally detected in the absence of clinical symptoms of the testis and scrotum.

In most instances, metastatic carcinomas of the prostate that infiltrate the testis are asymptomatic and are incidentally detected during autopsies, or following a bilateral orchiectomy for hormonal management in cases of advanced prostate cancer. Johansson and Lannes<sup>3</sup> reported that about 4% of testicular metastases are detected incidentally during orchiectomy for advanced prostate cancer. After examining 24,000 autopsy results, Pienkos and Jablockow<sup>4</sup> reported a 0.06% incidence of testicular metastasis. Prostate cancer may spread to the testis by arterial embolism, retrograde venous extension, retrograde lymphatic spread, or direct extension through the vas deferens.<sup>3-5</sup> The prognostic significance of testicular metastasis from prostate carcinoma is still unknown. Nevertheless, it is commonly regarded as a sign of advanced prostate disease. Owing to the very unusual presentation of this case, it is difficult to assess the value of solitary testicular metastasis as a prognostic indicator. This report calls attention to a rare manifestation of asymptomatic solitary testicular metastasis. This clinical event



**Fig. 1.** Neoplasm infiltrating the whole testicular tissue (arrow) with adenocarcinoma. The testis shows an invasion by prostatic adenocarcinoma ( $\times 40$ ) and resected prostate tissue ( $\times 150$ )(H&E).



**Fig. 2.** Tumor cells show a strong positive stain for prostate specific antigen (PSA) (A) and p504s (B)( $\times 200$ ).

should be considered in hormone-refractory prostate cancer patients with PSA progression and even in patients without evidence of metastasis to other organs.

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