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Aghahowa, Akukwe, et al; Carcinoma of the Prostate with Metastases to Both Testes: A Case Report and Review of Literature. Arch. Clin. Res. (April.2025); 9(1): pg.27-30

Carcinoma of the Prostate with Metastases to Both Testes: A Case Report and Review of Literature

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Abstract

Background: Prostatic cancer is the most diagnosed cancer in the male worldwide. The most common sites of metastasis are the long bones, spine, lungs and bladder. Metastasis to the testes is rare. Bilateral testicular metastasis is even a rarer entity. Case Summary: We report a case of a 65-year-old male with advanced carcinoma of the prostate with bilateral testicular metastases which was confirmed on histopathological analysis following bilateral total orchidectomies. This is the first case to be reported from Abuja North-central Nigeria. Conclusion: Bilateral testicular metastasis of prostate cancer is rare. A high index of suspicion, meticulous clinical examination supported with ultrasound scan and MRI of both testes will help in the diagnosis.

Keywords-*Prostate cancer, Bilateral, Testicular metastases*

Introduction

Prostatic cancer is the most frequently diagnosed neoplasm in men, and its natural history is largely known[1]. The most common metastatic sites of prostate cancer are iliac lymph nodes, long bones and lungs followed more rarely by bladder, liver, adrenal and brain[2]. Metastasis of prostate carcinoma to the testis, excluding lymphomas and leukemias, is an extremely rare phenomenon with a reported incidence of 0.02-2.5%, and bilateral occurrence is even a rarer entity[1,3]. The majority of these cases are detected at autopsy in about 2.5% of men with malignant tumors or are incidentally detected during therapeutic orchidectomy for prostatic cancer or following excision of hydrocoele sacs[1,4]. We report a case of adenocarcinoma of the prostate with metastases to both testes in a 65-year-old Nigerian male managed in a district hospital in Abuja North-central Nigeria.

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Case Presentation

A 65-year-old man presented at the surgical outpatient department (SOPD) of our hospital with a 1-year history of lower urinary tract symptoms (LUTS) consisting of urinary frequency, urgency, nocturia, and worsening difficulty of passing urine. He had a suprapubic catheter (SPC) in-situ passed in a referral centre 2 weeks prior to presentation for relief of acute urinary retention due to bladder outlet obstruction. There was associated dizziness, easy fatigability with associated anorexia, and weight loss. There was no history of jaundice. He was unable to walk with associated low back pains and stiffness 3 weeks before the presentation. His past medical history was unremarkable. There was no family history of prostate cancer.

On examination, he was chronically ill-looking, cachectic, pale, anicteric, dehydrated, and no peripheral lymphadenopathy. There was bilateral pitting pedal oedema up to the mid-shaft of both legs. His vital signs were within normal limits. The chest and abdominal examinations were normal. There was generalised

muscle bulk atrophy, worst in the lower limbs. The muscle power was 3 in the lower limbs and 5 in the upper limbs. The groins were oedematous, hyperaemic, hyperpigmented, tender with necrosis and foul-smelling scrotum leaving both testes hanging and exposed. A digital rectal examination (DRE) showed poor anal hygiene, lax anal sphincters, and enlarged nodular prostate occupying more than half of the rectal luminal circumference, tethered to the rectal mucosa. A diagnosis of bladder outlet obstruction secondary to metastatic carcinoma of the prostate with severe anaemia, paraparesis and Fournier's gangrene was made. The serum Prostate Specific Antigen (PSA) was 1800ng/ml. His Haemoglobin (Hb) concentration was 7g/dl. He was fully resuscitated with 4 units of blood transfused, commenced on parenteral antibiotics, analgesics, enoxaparin and had tetanus toxoid. He had serial scrotal wound debridement and daily dressings with honey. He had a Tru-cut biopsy of the prostate on the 10th day of admission and histology showed adenocarcinoma (Gleason Score of 5+4=9). The chest radiograph was normal but lumbo-sacral spine radiograph and MRI showed osteoblastic lesions in the L3/L4 vertebrae and there was no spondylosis or spondylolisthesis. A retrograde urethrogram (RUG) and micturating cystourethrogram (MCUG) excluded a urethral stricture. The urine microscopy, culture and sensitivity (M/C/S) was not remarkable for urosepsis.

On the 20th day of presentation, he had bilateral total orchidectomies (BTO) and secondary closure of the scrotal skin wound (scrotoplasty). He was given bicalutamide to achieve maximum androgen blockade (MAB). Pathologic examination of the testes showed no abnormality on gross examination. The left testis measured 4cm x 2.5cm x 2cm while the right testis measured 5.5cm x 2.8cm x 2.2cm. The histology of both testes showed encapsulated lesions with the seminiferous tubules having numerous germ cells and Leydig cells. There were also clusters of malignant prostatic glands arranged in solid and cribriform patterns within the small testicular tubules consistent with metastatic prostate adenocarcinoma of the testes (Figures 1 & 2).

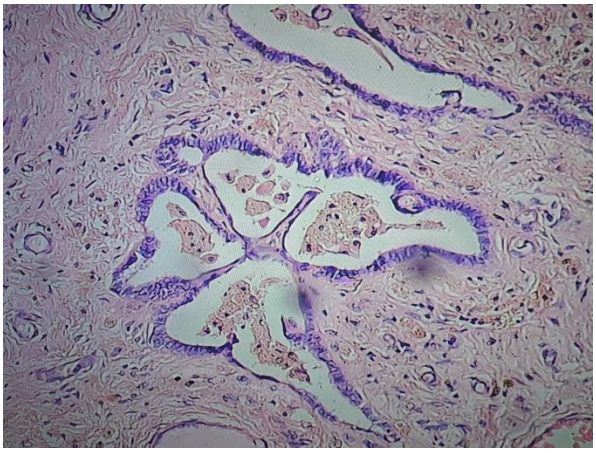

Figure1: Photomicrograph of metastasis within the testicular vessels X 10 Magnification

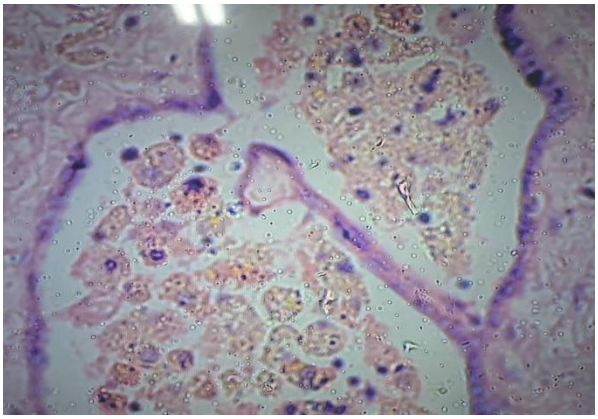

Figure 2- Photomicrograph of metastasis within the testicular vessels x 40 Magnification

The tumor was confined to the testis with the capsule intact. The resection margins were free of tumor. Lymphovascular invasion was seen in both testes and immunohistochemistry stain was positive for PSA. The metastatic lesion to both testes had similar microscopic differentiation with the primary prostatic lesion. The patient made good recovery and was discharged from the hospital 2 weeks after the BTO with the Fournier's gangrene treated and scrotal wound closure achieved. He walked into the surgical outpatient (SOP) clinic 4 weeks after, unaided with the muscle power of the lower limbs returning to normal and his PSA also returned to normal level. His clinical conditions as well as the monthly serial PSA estimation have remained satisfactory for the past 9 months postoperatively.

Discussion

Prostate cancer is common in men with incidence increasing with age and with reported median age of diagnosis being 66 years[5]. Metastases commonly occur to the bone causing bone pains and pathological fractures and may result in spinal cord compression, paraparesis and paraplegia when the spine is involved[1,5]. Metastasis to the testis is rare[6-8], and bilateral involvement a rarer entity with most cases detected incidentally in orchidectomy specimens performed for the hormonal management of advanced prostate carcinoma, or following excision of hydrocoele sacs or at autopsy[1,4,9]. Our patient had metastatic deposits in the lumbar vertebrae and presented with paraparesis; however, metastases to the testes were detected incidentally following the histopathological examination of the BTO.

The first case of prostate cancer metastasizing to the testis was reported in 1938 by Semans[10]. Similarly, Chapagain et al[1] reported the first case of prostatic carcinoma metastasizing to the testis in Nepal in 2015. In a 17-year review of 26 cases of histopathologically confirmed testicular and para-testicular tumours, Salako et al[11] in Ile-Ife, Nigeria reported only one case of bilateral testicular metastasis from advanced prostate carcinoma. However, Olorunsola et al[12] recently reported a case of bilateral testicular prostatic cancer metastases in a 71-year-old Nigerian man with advanced prostatic carcinoma in a review of testicular and para-testicular tumours in Kano, Nigeria over a 15-year period (2001-2015). In Zaria Northwestern Nigeria, Tolani et al[13] reported the incidental detection of two cases of prostatic adenocarcinoma with unilateral testicular metastasis in a 77-year-old and a 47-year-old respectively on histopathological analysis. However, Alhaji et al[14] did not record any case of metastatic prostatic carcinoma to the testis in their 15-year pathologic review of testicular and para-testicular tumours in Kano, Northern Nigeria, further attesting to the rarity of this condition. A few cases of bilateral testicular metastasis from advanced prostatic adenocarcinoma have been reported by some authors in different parts of the world[4,7,15]. To the best of our knowledge, ours is the first case of prostatic carcinoma with bilateral testicular metastases to be reported in Abuja, North-central Nigeria.

Although patients with metastases to the testes typically present with a swelling of the testes in the presence of an underlying known primary malignancy like the prostate, lungs, colon, kidney, stomach, pancreas and melanoma, testicular swelling may be the only presenting clinical feature in an occult primary from these sites[16,17]. This was not the case with our patient who had normal testes on physical examination. Metastases of prostate carcinoma to the testes may result from retrograde venous extension, arterial embolism, lymphatics or endocanalicular spread[8]. It has been suggested that the involvement of the prostatic urethra in prostate cancer increases the risk of testicular metastases[18]. It is possible that the route of metastasis from the prostate to both testes in our patient could be through any of these mechanisms and routes. Most cases of metastasis to the testes are often detected only on histopathological analysis of the testes following orchidectomy for the management of prostatic carcinoma and this tends to pose a challenge for the early detection and management of cases of testicular involvement.

Conclusion

Metastasis of prostatic carcinoma to the testis is rare and spread to both testes is even a rarer entity. Routine and meticulous evaluation of the testes with a high index of suspicion for possible testicular involvement, are critical when managing patients with carcinoma of the prostate, especially those with advanced disease. High resolution ultrasound scan and magnetic resonance imaging (MRI) of both testes can assist in the early detection of testicular metastasis, and when adequate treatment is provided, it can improve overall prognosis.

Ethical Approval- N/A as the institution does not need approval to publish case report**.**

Disclosure: The authors declare that they have no competing interests.

Consent: A written and signed consent was obtained from the patient to publish the clinical image and this case report.

Authors Contributions- All authors made substantial contribution to the concept, design, drafting and revision of the manuscript for important intellectual content and approved the final manuscript for publication.

Funding: No funds were received from any funding body for this study.

Acknowledgements: We are grateful to the Department of Surgery, Maitama District Hospital, Abuja, Nigeria, for allowing access to the records of the patient.

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