

Adenocarcinoma of the Prostate Presenting as a Soft Tissue Metastasis: A Case Report and Review of Literature

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Authors' contributions

This work was carried out in collaboration between all authors. Author OIA designed the study, wrote the protocol, and wrote the first draft of the manuscript. Authors OIA, ODD, IO and IE managed the literature searches. Authors OIA and IE acquired the histological photomicrographs for the study. All authors read and approved the final manuscript.

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Case Study

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ABSTRACT

Metastasis is the most frequent cause of mortality in cancer patients and symptoms related to a secondary deposit are a common form of presentation in malignancies. Cancers of the prostate commonly present with metastasis to the vertebrae, and less commonly to the lungs and liver. Metastasis to soft tissue is extremely rare and a highly unlikely form of presentation. However, with rising cancer rates in the developing world, secondary tumors should be excluded when soft tissue masses are encountered.

Keywords: Prostate; adenocarcinoma; metastasis; soft tissue.

1. INTRODUCTION

Adenocarcinoma of the prostate [Pca] is the commonest cause of malignancies in males globally. It is the commonest cause of cancer related morbidity and mortality in Nigeria and sub-Saharan Africa [1,2]. This pathology is largely asymptomatic until in its advanced stages, presenting with symptoms of bladder outlet obstruction as well as irritative urinary symptoms. In this region of the globe, a significant number of cases present late and with metastatic lesions, of which the vertebral column is the most frequent site. On rare occasions the lesion(s) at a metastatic site is the presenting symptom [3]. In this article we describe a rare case of Prostate adenocarcinoma presenting as a soft tissue mass.

2. CASE DESCRIPTION

Patient is a 64 year old male Farmer of Tiv extraction in Benue State, Nigeria. He presented to the Surgical Out-Patient Department of the Federal Medical Centre, Makurdi with a 2 month history of a swelling in the left upper back region. There was no antecedent history of trauma, no febrile illness or chronic cough and no significant weight loss. There was however an associated discomfort while lying in the supine position. At physical examination, an oval mass was identified, superficial to the left scapula. It measured 10x10x5cm, was soft to firm with no attachment to overlying skin, but was fixed to underlying tissue. An initial diagnosis of

Osteochondroma was made. A chest roentgenogram was ordered and it revealed a soft tissue mass located superficial to the left scapula. The mass had irregular outlines and infiltrative features suggestive of malignancy. A right sided pleural effusion was discovered as well, on the X-ray. The patient was a known hypertensive who had suffered a Cerebrovascular Accident a month prior to presentation. A full blood count and analyses of Electrolytes, Urea and Creatinine were all within normal ranges. However urine analysis revealed Calcium Oxalate crystals.

An excisional biopsy of the mass was performed a week after presentation. On macroscopy, multiple encapsulated lobulated firm tan grey masses were identified. Their cut surfaces were solid, grey white with streaks of yellowish tissue. Histologic sections revealed nests of malignant epithelial cells with enlarged vesicular nuclei, and multiple prominent nucleoli, in a desmoplastic stroma. These cells formed poorly outlined ductal spaces that are fused in most areas forming a cribriform pattern (Fig 1). No bony tissue was identified. A diagnosis of metastatic adenocarcinoma was made and a re-evaluation of the patient, specifically of the urogenital tract was suggested. Immuno-histochemistry showed strong diffuse expression of Prostate Specific Antigen within the cytoplasm of the neoplastic cells (Figs 2). The patient did not return to the facility and his status could not be ascertained as at the time of writing this article, 24 months from when the histological diagnosis was made.

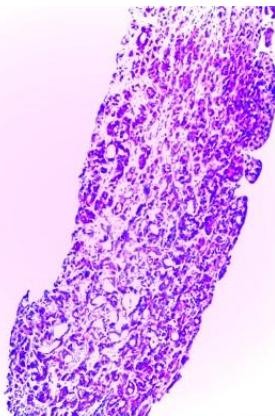


Fig. 1a

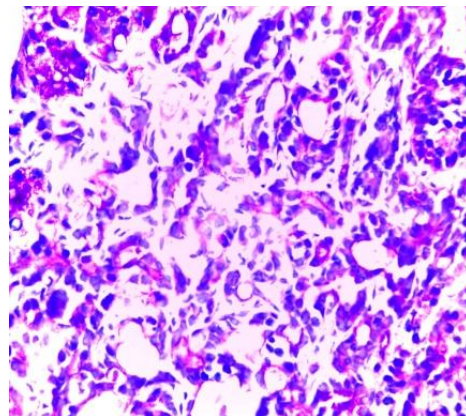


Fig. 1b.

Fig. 1. Histologic section shows malignant epithelial cells disposed in cribriform pattern. These cells have moderate cytoplasm, pleomorphic vesicular/hyperchromatic nuclei. H&E Stain (a.)x 10 (b.) x40

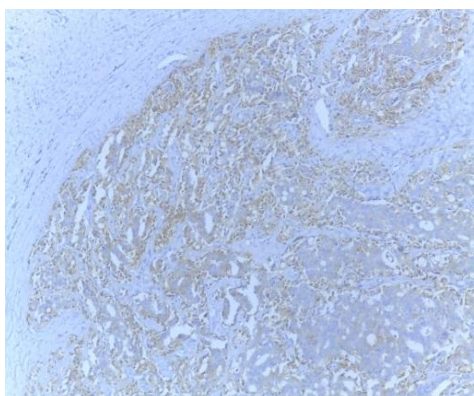


Fig. 2a.

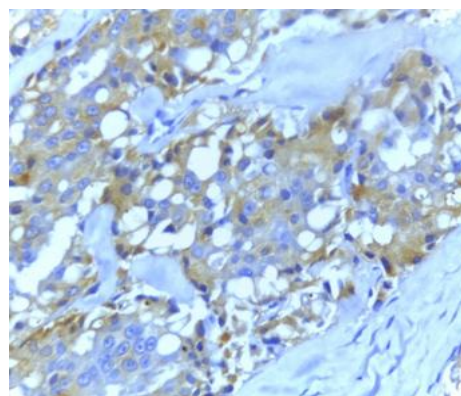


Fig. 2b.

Fig. 2. Histologic section shows strong cytoplasmic staining of malignant epithelial cells with prostate specific antigen (PSA). PSA Stain (a.)x4, (b)x40

3. DISCUSSION

It is estimated that about a third of adenocarcinomas of the prostate present with metastasis [2,4,5]. Equally, metastasis is regarded as the commonest cause of cancer related deaths worldwide. Secondary deposits from malignancies of the prostate are mostly found in the vertebral column [3,6]. This is due to the seeding of circulating tumor cells into the vertebral venous sinuses. Spread to the regional lymph nodes is estimated to be seen in approximately 1 out of 10 cases. Visceral organs such as the lungs, liver, and adrenals are all documented common sites of metastasis [6,7] Spread to soft tissue is quite rare and involvement of the chest wall is a very uncommon form of presentation [8-11].

The incidence of malignant disease is on the increase in sub-Saharan Africa. Figures from the World Health Organization [WHO] state that by 2030, more than two-thirds of new cancer cases on the globe, will be found in this region of the world [1]. Furthermore the majority of cancer cases seen in this environment present in advanced stages and as such with atypical clinical features [5,12,13]. This re-emphasizes the need for comprehensive investigation of patients with mass lesions. It is highly recommended that histologic examination be performed on all suspicious/undefined masses [8-10]. This case has equally reflected the value of immunohistochemistry in resolving diagnostic dilemmas as the diffuse reactivity for Prostate Specific Antigen helped establish the diagnosis [13,14]. This protein is secreted by the prostate acinar cells and is expressed in up to 97% of metastatic prostate adenocarcinomas [4]. It

displays specificity for prostatic tissue but for the presence of malignancy. [3]. It is essential that detection of this antigen in tissue sections be employed in the diagnostic evaluation of metastatic carcinomas in adult males [15].

Diagnostic pathology in low and middle income countries in which our nation is classified, is largely poorly developed [16]. Furthermore, immunohistochemistry is not a routine procedure. Therefore, substantial and sustained upgrades should be made to diagnostic facilities in major public health institutions nationwide to enhance the ability of pathology units to provide services with precision and accuracy.

4. CONCLUSION

Malignancies have protean forms of manifestation which could be misleading in some instances [5,17] and with rising cancer rates in the developing world, secondary tumors should be excluded when soft tissue masses are encountered. A suspicion of prostate cancer should be entertained in this regard as it is a top ranked male cancer globally in incidence and mortality [16].

CONSENT AND ETHICAL APPROVAL

As per university standard guideline participant consent and ethical approval has been collected and preserved by the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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