

CERVICAL LYMPHADENOPATHY FROM PRIMARY CARCINOMA OF THE PROSTATE

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(Received 6 March 2006; Revision Accepted 18 November 2006)

ABSTRACT

Three patients with prostate cancer and left cervical lymph node metastasis are presented. The three patients were evaluated and treated in the Urology Unit of the University of Port Harcourt Teaching Hospital, Nigeria. An explanation for the predilection of prostate cancer metastasis for the left cervical lymph nodes is offered. It is thought that the lymphatic drainage of the prostate is ultimately via the cisterna chyli, then the thoracic duct which empties into the junction of the left subclavian vein and finally into the left jugular vein. Eddy currents at this entry may play a role. Increased awareness is necessary to spare patients with cervical or supraclavicular lymphadenopathy from prostate cancer unnecessary rigorous and expensive management when the diagnosis is erroneously made.

KEYWORDS: Left Cervical Lymphadenopathy, Metastasis, Prostate Cancer.

INTRODUCTION

Prostate cancer metastasizes by direct local invasion, via the blood stream and the lymphatics. While haematogenous spread is capable of distant metastases, local invasion and lymphatic spread are mainly to adjacent tissues. In these circumstances the primary lesion produces signs and symptoms in the lower urinary tract and these lead ultimately to prostatic biopsy and diagnosis. Presentation of prostate cancer with cervical lymphadenopathy is rare (Chitale, *et al*, 2001 p. 413). We present three patients in whom the detection of prostate cancer was made initially from biopsy of cervical lymphadenopathy.

Case Reports

Case A

A 50-year old evangelist presented with lower urinary tract symptoms (urinary frequency, poor stream of urine, straining and feeling of incomplete bladder emptying). He had two daughters aged 12 and 9 years and had a strong desire to increase the size of his family. Digital rectal examination (DRE) revealed an enlarged and firm prostate. His serum PSA concentration was reported as 15 ng/ml. The ESR was 15mm in the 1st hour. In view of his strong desire for more children, he refused any invasive diagnostic or therapeutic procedures. He was placed on doxazocin (cardura) 4 mg daily in the hope that he had benign prostatic hyperplasia (BPH) to account

for the bladder outlet obstruction. It improved his stream of urine.

A year later, he returned having had a left cervical lymph node biopsy elsewhere. Figure 1. It was reported to be adenocarcinoma. He complained of low backache and was enunciated. There was a fixed left supraclavicular mass from which the biopsy specimen was taken. The bladder was palpably distended. The prostate felt firm-to-hard. The serum PSA was over 100 ng/ml. A transrectal Tru-Cut needle biopsy of the prostate was done. The biopsy report showed well-differentiated prostatic adenocarcinoma. He was placed on flutamide 250 mg three times daily and diclofenac potassium (Cataflam by Novartis Pharmā AG). Bilateral subcapsular orchidectomy was done and he continued to take flutamide.

A week later, his back pain improved significantly and it reflected in his countenance. The neck mass diminished in size and the pain in his legs was relieved. Two months after bilateral subcapsular orchidectomy he developed recurrent urinary frequency and bone pains. Flutamide was discontinued. The patient was placed on goserelin 3.6 mg monthly initially, and later bicalutamide 50 mg daily with salutary effects. Four years after diagnosis, he presented with paraplegia and bilateral lower limb oedema. These resolved in three days on palliation with stilboestrol 1 mg thrice daily and prednisolone 20 mg thrice daily. He died at home four years after the diagnosis of prostate cancer.

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Case B

A 56 year-old man presented with poor urinary stream, poor appetite and weight loss, enlarged bilateral cervical lymph nodes, scalp swelling and bleeding per rectum. He had a firm suprapubic mass about 10 cm from the upper margin of the pubic symphysis. DRE showed an enlarged nodular firm prostate. His haemoglobin was 9.8 g/100ml and the ESR was 110 mm in the 1st hour Westergreen. A cervical lymph node biopsy revealed metastatic prostatic adenocarcinoma. He could not afford other investigations including prostate biopsy. His symptoms and the suprapubic mass resolved completely clinically following bilateral subcapsular orchidectomy (BSO) and diethylstilbestrol. He was subsequently lost to follow-up.

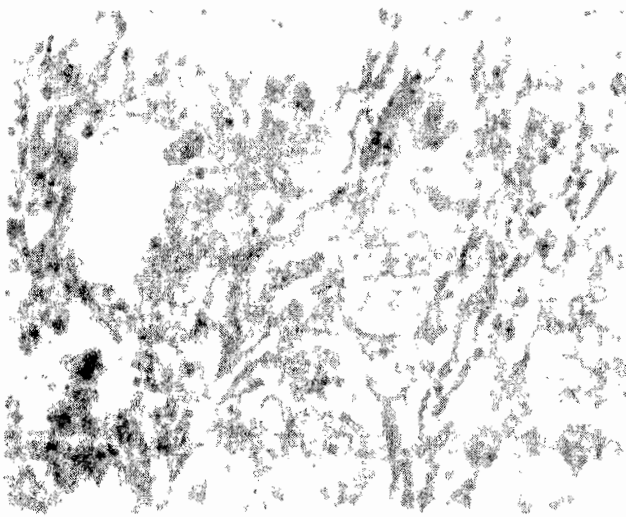


Figure 1: Photomicrograph of section of lymph node from Case A showing complete effacement of the architecture and replacement by sheets of malignant columnar cells which form glands in places

Case C

A 60 year-old retired headmaster presented with poor urinary stream, frequency, lethargy, weight loss, bilateral lower limb swelling and a chronic post-traumatic ulcer on the dorsum of the right foot. He was chronically ill-looking with severe pallor and enlarged non-tender mobile left cervical and left supraclavicular lymph nodes. There was a non-tender hard irregular fixed mass in the left iliac fossa. The prostate was enlarged, hard, nodular and irregular in shape. His haemoglobin concentration was 5.6 gm/dl, ESR 150mm in the 1st hour Westergreen, urea 19.1 mmol/l, creatinine 330 mmol/l and PSA > 120 ng/ml. A trans-rectal Tru-cut biopsy of the prostate showed adenocarcinoma of the prostate with a Gleason score of 8. A biopsy of the left cervical lymph node also showed metastatic adenocarcinoma 'suspected to be of prostatic

origin'. He was commenced on flutamide 250 mg three times daily. Bilateral subcapsular orchidectomy was done two weeks later. The pelvic mass subsequently progressively reduced in size. After discharge from hospital, he was lost to follow up.

DISCUSSION

The lymphatic drainage of the prostate gland normally occurs through the obturator-hypogastric lymph nodes (Osterling, et al, 1997 p. 1322). Cervical lymphadenopathy from prostate cancer has been reported more often on the left than on the right (Seater, et al, 1984 p. 385; Jones & Anthony 1992 p. 149). The explanation for this left sided preferential spread may be speculated. The lymphatic channels that drain the prostate gland ultimately empty into the para-aortic lymphatics and thence into the cisterna chyli. Lymphatic flow continues into the thoracic duct. The thoracic duct joins the left jugular lymph trunk and the left subclavian lymph trunk to empty into the venous circulation at the junction of the left subclavian vein and the left jugular vein. We speculate that stasis or obstruction near the entry into the venous circulation may result in prostate cancer microthrombi passing into the left supraclavicular lymphatic channels and nodes.

Alternatively, backflow of lymph may occur from eddy currents at the entry of the thoracic duct into the junction of the left subclavian vein and the left internal jugular vein as lymph flows into the venous circulation. This may explain the seeding of tumour thrombi in the lymph nodes of the left supraclavicular fossa.

Cervical lymphadenopathy may present to maxillofacial surgeons or otolaryngologists who may embark on unnecessary extensive investigations and perhaps radical neck dissection when a primary site is not known and when rectal examination is omitted (Chitale, et al, 2001, p. 431; Clark, et al, 2001, p. 571). A high index of suspicion of prostate cancer as the primary site is essential in men in the fifth decade and above who present with lymphadenopathy. These men are at increased risk of prostate cancer on the basis of age. A detailed history, DRE and PSA estimation are necessary especially if there are urinary symptoms. It was an unfortunate wishful thinking that the first patient's strong desire to have more children persuaded the surgeon to treat him for BPH.

The patients responded to orchidectomy, although the effect was transient. The transient positive response of advanced prostate cancer to hormonal manipulation is well known. It has been suggested that the prognosis in patients with distant lymphatic metastasis from prostate cancer is the same as it is for those with regional

metastasis and may be favourable when the Gleason histologic score is low (Montie, 1996, p. 341). A study has shown that the prognosis in patients with metastatic lymphadenopathy is better from a prostate primary than from any other site (Jones & Anthony 1992, p. 149). Lymphadenopathy in prostate cancer may confer increased survival in patients following hormonal manipulation (Sandhu, et al, 1990, p. 415). It is possible that lymph node involvement modifies prostate cancer immunologically to reduce the virulence of the neoplastic cells. Also, it has been suggested that prostate cancer may enhance production of factors such as tumor necrosis factor (TNF) and metastasis-suppressor genes (Jaeger, et al, 2001, p. 279) that may inhibit prostate cancer. Prostate cancer has been known to be an immunogenic tumor (Freedland, et al. 2001, p. 242). However, we were unable to confirm a beneficial impact of metastatic lymphadenopathy in the above series because of the small number of patients and because of loss to follow up.

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