

Prostate Cancer Presenting as Left Supraclavicular Lymphadenopathy and a Review of the Literature

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Authors' contributions

This work was carried out in collaboration with both authors. Author HJ designed and produced the majority of the manuscript. Author SG was involved in critically reviewing the manuscript. Both authors read and approved the final manuscript.

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Case Study

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ABSTRACT

Aims: Patients presenting with a neck mass are commonly seen by the ENT surgeon. They are also usually related to head and neck tumours. However, cervical node involvement from the prostate is rare, especially as an initial presentation of the disease. We report a case of prostate carcinoma presenting with a left supraclavicular lymph node.

Presentation of Case: A 61-year-old gentleman presented to our clinic with a rapidly growing left sided neck mass. Fine needle aspiration cytology (FNAC) of the neck mass was interpreted as metastatic carcinoma. It was later revealed by the patient that he had been experiencing lower urinary tract symptoms (LUTS). PSA was 1331 ng/ml. He was referred to our urology service and was treated as metastatic prostate cancer.

Discussion: Prostate cancer commonly spreads to the regional lymph nodes, pelvic organs, or the axial skeleton. Distant metastases to the cervical nodes are rare and accounts for 0.3-1% of cases.

Conclusion: In male patients presenting with left supraclavicular mass, it is important for the clinician to keep in mind of the possibility of metastases from prostatic malignancy.

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Keywords: *Supraclavicular mass; cervical metastases; prostate cancer; prostate malignancy; metastatic prostate cancer.*

ABBREVIATIONS

FNAC : Fine needle aspiration cytology
LUTS : Lower Urinary tract symptoms
PSA : Prostate specific antigen
TRUS biopsy : Transrectal ultrasound guided biopsy
PIN : Prostatic intraepithelial neoplasia
DRE : Digital rectal examination

1. INTRODUCTION

Cervical or neck masses are common presentations in the ENT clinic. Metastatic tumours of the head and neck need to be ruled out as they are the most common primary tumour site for a neck node metastasis. However, distant cervical metastases from the prostate is possible but uncommon. It is common in elderly males and lower urinary tract symptoms may be mild. The symptoms include frequency, decreased flow volume, dysuria, nocturia, and haematuria. In the United States, prostate cancer is the most common malignancy but with the highest 5-year survival rate [1]. Common metastatic sites include bone, lymph nodes, liver, thorax, brain, and digestive system [2]. We present a case of prostate cancer with neck metastases to remind clinicians of the possibility of this diagnosis.

2. PRESENTATION OF CASE

A 61-year-old male presented to our clinic with a rapidly growing left sided neck mass. The mass was painless and there were no associated symptoms such as shortness of breath, loss of weight, and loss of appetite. He had a history of hypertension and type 2 diabetes. Of note, patient was a smoker with a 20-pack year history. There was no family history of malignancy.

Physical examination revealed a 12 x 6 cm left sided neck mass at the posterior triangle. Superiorly just below the angle of mandible and extends inferiorly until the clavicle. Anteriorly, the mass started at the anterior border of the sternocleidomastoid and extends posteriorly until the anterior border of trapezius. The mass was firm, fixed, not indurated, and not adherent to the overlying skin. There was no hepatosplenomegaly. Examination of inguinal and axillary region revealed no palpable lymph

nodes. Endoscopic examination was unremarkable.

Fine needle aspiration (FNA) showed metastatic carcinoma which was negative for PSA staining. Immunohistochemistry for MNF-116 was positive. On further questioning, the patient had significant longstanding lower urinary tract symptoms such as hesitancy, terminal dribbling, and nocturia for which he was not concerned. PSA (Prostate specific antigen) was raised at 1331 ng/ml. Full blood count, renal function, and liver function tests were normal.

His case was urgently referred to the urology team and subsequently he was diagnosed with prostate cancer. Digital rectal examination revealed an enlarged prostate with a nodular right lobe. CT (computed tomography) staging showed nodal involvement in the neck, hilar, and abdominal region. Also present was prostatomegaly with mild obstructive left hydronephrosis and hydroureter. Extensive bone metastasis was detected with bone scan. TRUS (transrectal ultrasound guided) biopsy showed no malignancy or high grade prostatic intraepithelial neoplasia (PIN). There were 12 cores taken from the peripheral zone and 2 cores from the transitional zone.

After a multidisciplinary meeting, it was decided to treat the patient as metastatic prostate cancer. The patient was commenced on anti-androgen therapy every 3-monthly. He showed good clinical response. PSA level reduced to 4.6 ng/ml. His urinary symptoms have improved significantly, and the supraclavicular swelling has regressed completely.

3. DISCUSSION

Prostate cancer commonly spreads to the regional lymph nodes, pelvic organs, or the axial skeleton. Areas of distant metastasis includes the lungs and supradiaphragmatic lymph nodes. Isolated cases of laryngeal and cutaneous metastasis have also been described [3,4]. Very rarely, it would metastasize to the cervical lymph nodes. Spread to the cervical lymph nodes account for 0.3%-1.0% of all prostate cancer cases [5,6]. In our review of the literature, there are more than 20 case reports of prostate cancer

which presented as neck swelling as a primary complaint. Some also reported on multiple cases of prostate cancer with metastases to the supraclavicular nodes.

Typically, lymphatic metastases from the prostate progress in a stepwise manner. First, the obturator-hypogastric and presacral lymph nodes, then to the cysterna chyli via iliac and para-aortic nodes. Finally, to cervical nodes via the thoracic duct. From then on is spread into the systemic circulation via the left subclavian vein. Therefore, patients with cervical nodal spread would be expected to have widespread metastases. Batson postulated that the vertebral venous plexus may play a significant role in the distant spread of prostatic tumours via haematogenous spread [29,30]. Bubendorf et al. [31] have shown a strong association between lymphatic and haematogenous metastases in a large post mortem study. About 84% of patients with pelvic or para-aortic lymphatic metastases had simultaneous haematogenous spread as compared to 16% of patients without pelvic or para-aortic lymphatic metastases. Other rare sites of distant metastases such as the heart and genitalia were also documented [31]. In a preliminary study by Fukuda et al, the presence of lymphatics have been demonstrated in the prostate gland, most abundant at the area surrounding the ejaculatory ducts [32]. Bone metastases was also more frequent in patients with para-aortic lymphatic metastases.

Butler et al. [33] studied cases of patients (n=19) who had prostate cancer and presented with

supraclavicular lymph nodes as the initial presentation. They found that 42% had abnormal DRE (digital rectal examination) and 58% had normal bone scan. In another study by Cho et al. [34] 15/26 patients presented with enlarged supraclavicular lymph nodes. 19 patients had supradiaphragmatic nodal metastases on the left side. 42% had normal DRE and 35% had no evidence of bone metastases.

In all the available case reports that we identified, it appears that most patients with supraclavicular node involvement have bone metastases. Most were also more than 50 years old. Patients more than 50 years old are predicted to have worse survival rates than their younger cohorts [35]. It is imperative that urgent referral to urology service is made as these cohort of patients have poor prognosis on overall survival [35].

In our case, a clinical decision was made by the oncologist to treat the patient even without histopathological evidence. All the available laboratory tests and clinical findings pointed to prostate malignancy as the most likely diagnosis. MNF116 immunohistochemistry which was positive in the FNAC also helps in the diagnosis of prostate cancer. MNF 116 which is an antibody which reacts by immunohistochemistry staining with prostate cancer [36]. However, this biomarker also reacts to a myriad of other epithelial tumours. Huang et al. [37] has found that the neuroendocrine cells of prostatic cancer stain positive for MNF116. This, in addition to the elevated PSA level, correlates to the dissemination of prostatic cancer.

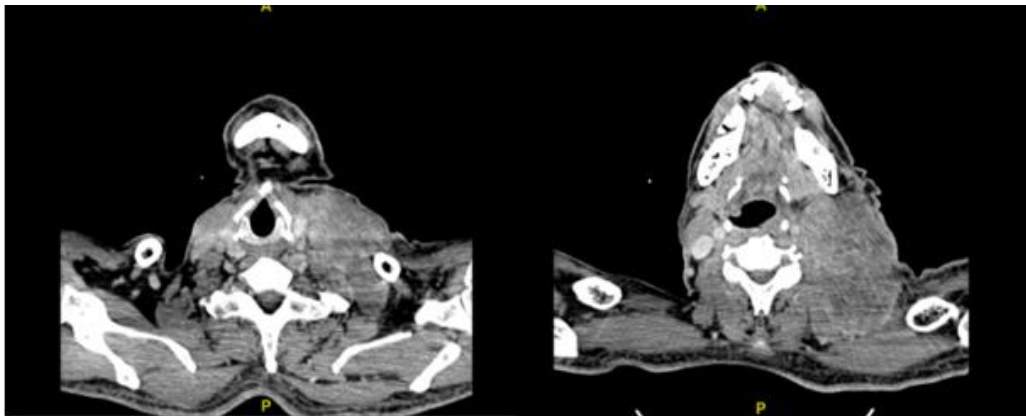


Fig. 1. CT neck showing large left supraclavicular mass

Table 1. Reported cases of metastatic prostatic cancer presenting with supraclavicular lymph nodes

References	Published year	Cases	Age	Laterality	Bone metastasis	PSA (ng/ml)	Treatment	Survival (months)
Zhu L [4]	2013	1	63	Left	-	21.82	Androgen blockade	15 (Alive & progression free)
Wang HJ [7]	2004	3	78	Bilateral	+	45375	Androgen blockade	24 (Alive & progression free)
			69	Left	+	563.88	Androgen blockade	18 (Alive & progression free)
			73	Left	+	647.6	Androgen blockade	NA
Gaur S [8]	2004	1	52	Left	+	6517.8	Androgen blockade	NA
Sepulveda L [9]	2015	2	43	Left	+	583	Androgen blockade, chemo	NA
			87	Bilateral	+	1224	Androgen blockade	6 (Alive & progression free)
Sehrawat A [10]	2016	1	73	Left	+	1650	Androgen blockade, orchidectomy	NA
Sagnak L [11]	2008	1	52	Left	-	41.6	Androgen blockade, orchidectomy	6 (Alive & progression free)
Saad S [12]	2010	1	72	Left	+	1000	NA	NA
Park EJ [13]	2017	1	63	Left	+	2064	Androgen blockade	NA
Lin YY [14]	2010	1	42	Left	+	153	Androgen blockade	15 (Alive & progression free)
Iftikhar H [15]	2019	1	66	Left	+	41.6	Palliative chemo & radiotherapy	NA
Idowu BM [16]	2018	1	66	Left	+ (osteolytic lesions on CT)	16	Androgen blockade, orchidectomy	18 (with stable osteolytic lesions)
Elabbady A [17]	2013	3	57	Right	+	151	Androgen blockade	18
			77	Left	NA	12	Androgen blockade	12
			76 (recurrence)	Right	NA	NA	Ketoconazole, corticosteroids	6 (partial remission)

References	Published year	Cases	Age	Laterality	Bone metastasis	PSA (ng/ml)	Treatment	Survival (months)
Dubhashi SP [18]	2012	1	70	Left	+ (x-ray only)	1000	Androgen blockade, orchidectomy	6
Davarci M [19]	2012	2	78	Left	+	1710	Androgen blockade	10
Clark S [20]	2001	1	65	Left	+	>25	Androgen blockade	NA
Chitale SV [21]	2001	2	67	Left	NA	66	NA	NA
			68	Left	NA	56.6	Androgen blockade	60 (until recurrence)
			76	Left	NA	68	Androgen blockade	36
Chan G [22]	2013	1	61	Left	-	16	TURP, androgen blockade	NA
Carleton J [23]	2005	1	84 (recurrent case)	Left	-	55.5	Androgen blockade	NA
Bossink AW [24]	2001	1	70	Left	+	1066	Androgen blockade	1 (alive)
Bhattar R [25]	2017	1	60	Left	+	>100	Androgen blockade, orchidectomy	12 (Alive & progression free)
Asai S [26]	2008	1	54	Bilateral	+	10.7	Androgen blockade	NA
Ahamed SH [27]	2006	1	74	Bilateral	NA	586	Androgen blockade	7 (Alive & progression free)
Aguibui JO [28]	2014	2	70	Left	NA	153	Androgen blockade	13 (Died)
			68	Left	NA	193	Androgen blockade, orchidectomy	5 (Died)



Fig. 2. Axial and coronal CT demonstrating left hydronephrosis and hydroureter

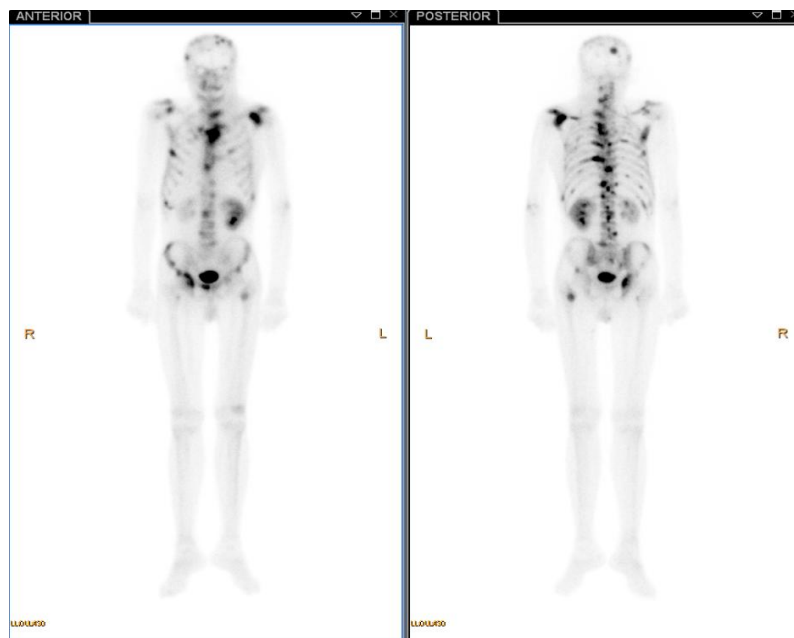


Fig. 3. Bone scan demonstrating widespread bony metastasis

4. CONCLUSION

Most cervical and supraclavicular node metastases are of head and neck origin. However, prostate cancer should be considered in elderly men presenting with left supraclavicular lymph node if there is a low index of suspicion of head and neck malignancy and presence of lower urinary tract symptoms.

CONSENT

All authors declare that consent was obtained from the patient prior to publication of this case report.

ETHICAL APPROVAL

As per international standard, written ethical approval has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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