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Case report

Facial nerve palsy as a primary presentation of advanced carcinoma of the prostate: An unusual occurrence



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Abstract

Introduction: Cranial nerve neuropathy is a rare presentation of advanced cancer of the prostate.

Observation: We report a case of 65-year-old man who presented with right lower motor neuron (LMN) facial nerve palsy. The prostate had malignant features on digital rectal examination (DRE) and the prostate specific antigen (PSA) was 116 ng/ml. Histology of the prostate biopsy confirmed an adenocarcinoma with the Gleason score of (4 + 3) = 7/10. The computerised tomography (CT) scan of the skull revealed dense osteosclerosis at the base, worse in the petrous part of the right temporal bone with narrowed ipsilateral facial nerve canal. Androgen deprivation therapy (ADT) was achieved by bilateral orchidectomy. Analgesics and bisphosphonates with facial muscles physiotherapy were also administered. He had significant resolution of the facial nerve palsy and the other symptoms at subsequent follow-ups. The related literatures were reviewed.

Conclusion: Facial nerve palsy as a primary presentation of advanced cancer of the prostate is unusual, thus, a high index of suspicion is required to establish the diagnosis. ADT provided adequate palliation.

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Introduction

Cranial nerves may be invaded by malignant tumour from Cranio-oropharyngeal region or rarely the metastasis from distal sites such as the breast, lung, prostate and kidney following the haematogenous spread to the base of the skull [1]. The few reported cases of cranial nerve palsies from metastatic prostate cancer were however in patients whose disease progressed while on palliative treatment. These resulted in recognised syndromic cranial nerve lesions such as Villaret's syndrome [2], Occipital condyle syndrome [3], Jugular foramen syndrome [4], Parasellar syndrome [5], Collet syndrome [6] or isolated II [7], III, VI and VIII nerves palsy [8,9]. Isolated facial nerve palsy is unusual as the first presentation of the patient with advanced carcinoma of the prostate.

We obtained a written consent from the patient, and clearance from the Hospital Ethics Committee to report this unusual presentation of an advanced prostate cancer.

Case report

A 65-year-old man, retired journalist, who presented with three weeks history of deviation of his mouth towards the left side and difficulty with feeding due to the escape of feeds from the contra lateral angle of his mouth. He could not close the right eye even while asleep. On further evaluation, he was found to have mild irritative lower urinary tract symptoms (LUTS), low back pain that was not bothersome and generalised body weakness. He was not hypertensive or diabetic and had no other co-morbidity.

On physical examination, he was pale, had lost the naso-labial fold on the right side of the face while his mouth was deviated to the left. His right eye remained opened on his attempt to clench his teeth and close his eyes (Fig. 1). He had no swelling in the periauricular region and his ear, nose and throat (ENT) examinations were normal. The rectal examination revealed an enlarged prostate with malignant features; clinical stage T2C. His Pack Cell Volume was 25% and hence, he was transfused two units of whole blood. The PSA was 116 ng/ml and the six cores of the digital guided prostate biopsy taken all confirmed adenocarcinoma of the prostate that had the Gleason score of 7/10(4+3) (Fig. 2). His lumbosacral radiographs revealed osteoblastic bone lesions involving the lumbosacral and pelvic bones. The skull CT showed dense sclerosis at the base which was worse in the petrous part of the right temporal bone with narrowed ipsilateral facial nerve canal (Figs. 3 and 4) but the cerebral and cerebellar hemispheres were normal. He was counselled for palliative treatment. Androgen deprivation therapy was achieved by bilateral orchidectomy. Other adjuvant treatments he had were; facial muscles physiotherapy, analgesics and oral bisphosphonates. He had significant resolution of symptoms at subsequent follow ups; he had regained good facial symmetry with the reappearance of the nasolabial fold on the right side and he could close both eyes (Fig. 5).

Discussion

Prostate cancer is the second commonest malignancy in men worldwide [10]; however, it accounts for only 6% of the metastasis from all cancers to the skull [11]. The exact mechanisms of its haematogenous spread to the skull is still poorly understood [12]. Only a few cases of facial nerve palsy following metastasis from prostate cancer to the base of the skull in patients with castration resistant



Figure 1 Right eye remained open on attempt at closing the eyes and clenching the teeth seen in right LMN facial nerve palsy.

prostate cancer (CRPC) have been reported in the literature. We could not find any report of facial nerve palsy as the first sole presentation of cancer of the prostate prior to ADT or before the development of CRPC. Our patient presented primarily with facial nerve palsy, which posed a significant diagnostic challenge. Because of the impact of facial nerve palsy on the patient's body image and quality of life [13], it was expedient to establish the cause. Metastasis to the temporal bone typically presents with the classical triad of otalgia, periauricular swelling and facial nerve palsy [14] but this patient had only facial nerve palsy.

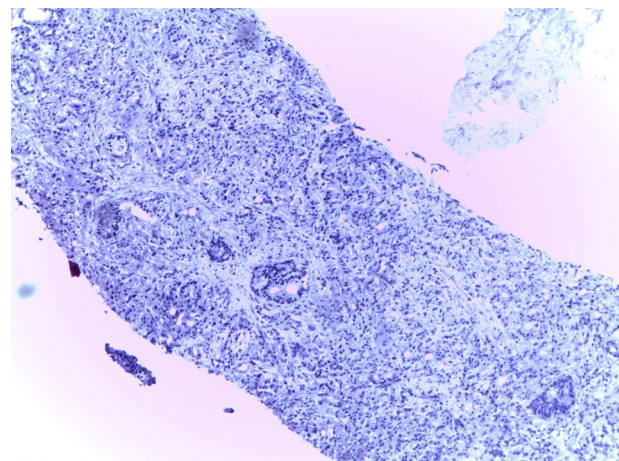


Figure 2 Histology of the patient's prostate biopsy specimen. *Haematoxylin and Eosin* Stain (40 \times). Gleason score (4+3)=7/10.

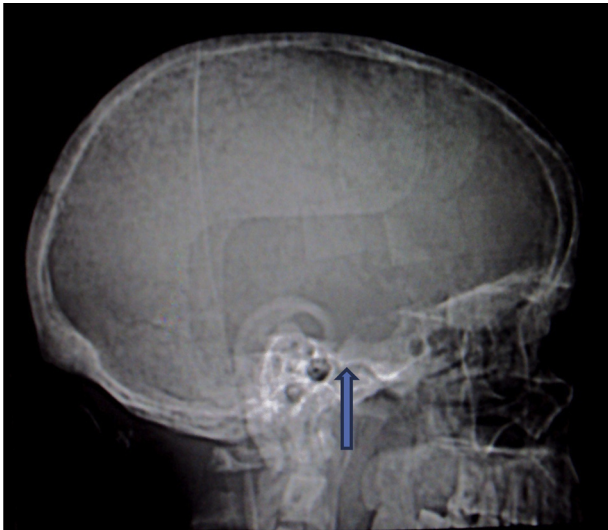


Figure 3 Lateral scanogram, showing numerous milium cystic lesions involving the entire calvarium. The skull base showed sclerosis, especially at the level of the middle cranial fossa (arrow).

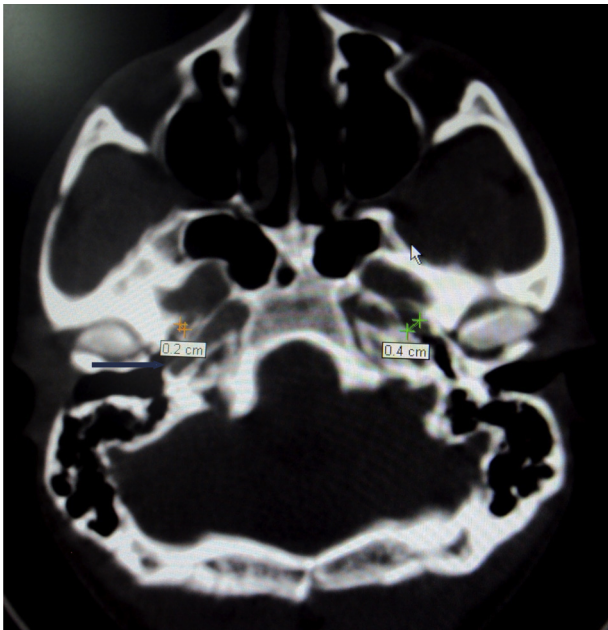


Figure 4 Axial section of non-contrast CT scan at the level of the base of the skull, showing narrowed right facial nerve canal

The patient had no other lesion that could explain his facial nerve palsy. The common causes, which includes; infective, metabolic, traumatic, toxins and loco regional lesions [15] were all ruled out in the patient. The preceding LUTS and low back pain were mild and not bothersome, and thus he did not seek for their treatment in any health facility. Delayed presentation is common in our environment because of the poor health seeking behaviour and ignorance. Hence, most patients with prostate cancer are often seen for the first time with an advanced disease [16,17]. The digital rectal examination (DRE) has only 27.1% and 49% sensitivity and specificity respectively; while the use of PSA alone for screening has a sensitivity of 34.9% and specificity of 63.1%. The combination of DRE with

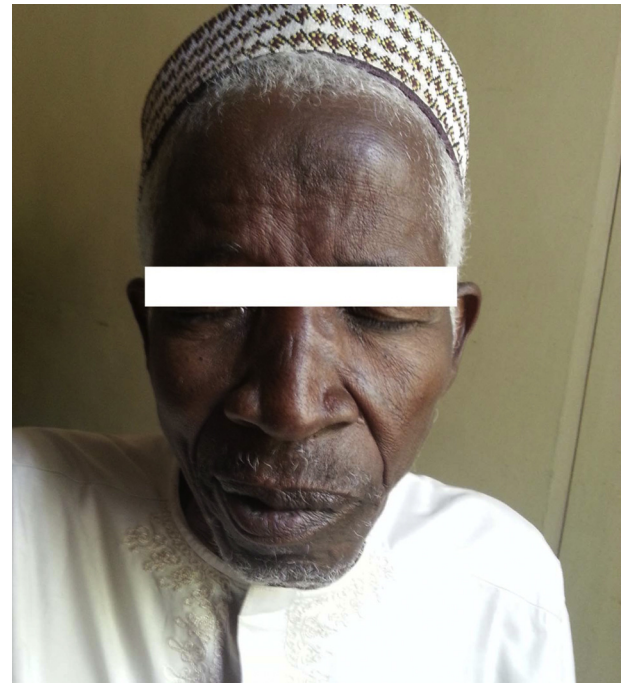


Figure 5 Third month at follow up – good facial symmetry, regained right nasolabial fold and he could now close both eyes

PSA significantly improves prostate cancer detection (sensitivity and specificity of 38.0 and 87.9% respectively) [18].

The CT findings in our patient revealed predominantly osteolytic lesion at calvarium and osteosclerosis at the base of the skull with narrowed facial nerve canal on the right side. The petrous part of the temporal bone is the part of the base the skull predominantly involved in patients with facial nerve palsy resulting from secondaries [1,19], in our patient the sclerotic lesion is worse in that region.

The treatment for prostate cancer generally is on a case to case basis. Androgen deprivation therapy remains the *gold* standard palliative treatment for the advance *prostate* cancer, thus this patient had surgical castration (bilateral Orchiectomy). He was also treated with oral bisphosphonates in the form of weekly *alendronate* shown to increased bone mineral density and decreased the risk of skeletal related events in patients with prostate cancer on ADT [20]. Our patient might have benefitted from *radiotherapy* to the right temporal region, however, the response to ADT was remarkable and there was marked and sustained improvement in facial nerve palsy (Fig. 5), LUTS and the low back pain over the period of follow up.

Conclusion

LMN facial nerve palsy is an unusual presentation of advanced prostate cancer. Therefore, the diagnosis requires a high index of suspicion. The patient's age, DRE findings, PSA and radiologic investigations should raise the suspicion of prostate cancer. ADT is an effective palliative treatment as is the case in most advanced prostate cancer. Adjuvant treatment with bisphosphonates and facial muscles physiotherapy appeared to be beneficial.

Ethical committee approval

This study obtained the approval of the ethical committee.

Author's contribution

A. Abubakar: The concepts and study design with coordination of co-authors contributions. Acquisition of data and analysis (aab-dulkadir21@gmail.com).

M. Ahmed: The analysis, interpretation of the case concept and design (darm313@yahoo.com).

M. Tela: Acquisition of data and drafting the article, concept and design (umtela@yahoo.com).

A. Ismail: Substantial contributions in interpretation with the analysis of the appropriate investigations done by the patient particularly the computer tomography including labelling and contributions in the study concepts (ibnmalikanas@yahoo.co.uk).

M. Abubakar: Revising the study critically for important intellectual content, contributed to the design and concept (bgmustapha2003@yahoo.co.uk).

Conflict of interests

Nil.

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Nil.

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