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An unusual presentation of metastatic prostate carcinoma with 3 year survival: A case report

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ABSTRACT

The most common sites of prostate cancer metastasis include the bone, lung and liver. Brain metastasis is very rare. Metastasis to multiple sites including the less frequent sites is even rare occurrence. On the other hand, the diagnosis of metastatic prostate carcinoma to the brain has rarely been published and mainly reported as autopsy series. Brain metastasis from prostate carcinoma represent often a late event when the disease has already metastasizes widespread to other organs. There is advancement in the management by understanding its natural course and development of newer agent in the form of chemotherapy, hormonal therapy as well as targeted therapy along with other established treatment modalities. The prostate carcinoma patient with multiple site metastasis show dismal survival in-spite of advancement in screening, diagnosis and treatment modalities. Here we are reporting a case of Ca Prostate with multiple metastases who survived 3 years without taking any treatment.

INTRODUCTION

The incidence of prostatic carcinoma (PCa) has increased all over the world since the use of prostate specific antigen as a screening tool. In the USA, 192,280 new cases are diagnosed as PCa each year. It is the second leading cause of death among men in the world. PCa in most cases starts to develop at the age of 50 years and reaches its peak incidence at 60-70 years of age. The prognosis of PCa mainly depends on the presence or absence of metastatic spread [1] Albeit most PCa are adenocarcinomas, various other subtypes are also defined. They have specific clinicopathologic features, clinical relevance and prognosis. The various subtypes are squamous cell, sarcomatoid, urothelial, basal cell, adenoid cystic and small cell carcinoma [2]. PCa usually metastasises to the bony skeleton, followed by lungs, liver, pleura and adrenal glands. Rarely PCa can present with non-regional lymph nodes or soft-tissue metastases. Lymph nodes are commonly involved during the course of metastatic PCa, with hypogastric and obturator lymph nodes as the most common sites.

Further spread can occur to the para-aortic nodes, to cisterna chyli, to the thoracic duct, and then to the left subclavian vein, and to the systemic circulation [3]. Tumour cells can theoretically lodge in the left supraclavicular lymph nodes in a retrograde fashion. Batson suggested that the supradiaphragmatic extension of prostate cancer occurs haematogenously via the vertebral venous system.

Surgery, chemotherapy, hormonal therapy, radiotherapy as well as supportive treatment in the form of immunotherapy and targeted therapy can be implemented in the management of PCa, depending on the various risk factors and stage of the disease. However even today the new form of treatment modalities like cryotherapy, hyperthermia, high intensity focused ultrasound (HIFU) and alternative medicines are investigational.

CASE SUMMARY

A 55 yr. old non-diabetic non-hypertensive, male was diagnosed as a case of PCa with liver and pulmonary metastasis in April 2014 outside where he presented with difficulty in micturition, bilateral hydrocoel and abdominal pain. On Contrast Enhanced Computed Tomography (CECT) abdomen (04/04/2012), thickening of posterior wall of urinary bladder with ill-defined interface with prostate with hepatic, pulmonary metastasis and para-aortic & mesenteric lymphadenopathy (Figure 1). Trans rectal biopsy revealed prostate adenocarcinoma with Gleason score 4+5 (9). He underwent bilateral orchidectomy and advised for tab Calutamide 50 mg daily but he defaulted and not taken any form of treatment. He again reported in same hospital with complaints of low back ache. Bone scan (29/12/14) reveal multiple bony metastasis (vertebra, pelvis and proximal shaft of left humerus). He received 2 cycle of Zoledronic acid 4 weekly on 23/01/15 and 23/02/15. Again in March 2015 he developed seizures, vomiting with unconsciousness. His MRI brain (16/03/15) reveals multiple space occupying lesions in Left

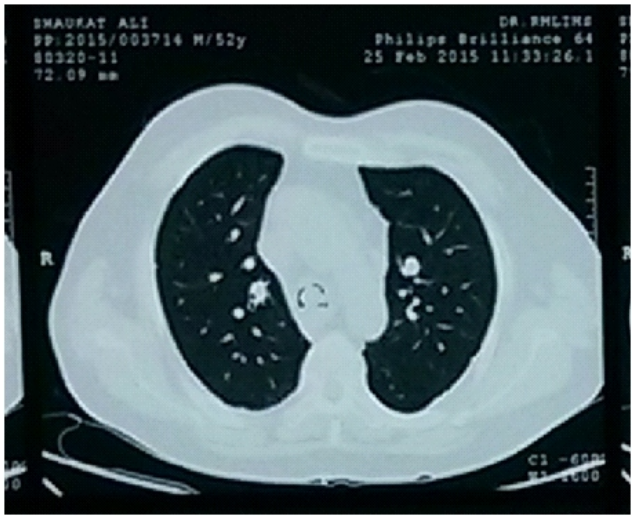

Fig 1. CECT chest showing bilateral lung metastasis

therapeutic modalities for pts. with advanced disease. The relative risk for development of biochemical recurrence is dependent on various preoperative and postoperative clinical and pathologic factors. Multivariate analyses indicate that the most significant independent predictors are preoperative PSA, pathologic T stage, and final Gleason score (based on the prostatectomy specimen). Four independent groups of investigators developed mathematical models and nomograms that allow for postoperative prediction of biochemical recurrence and the identification of defined risk groups using the known prognostic parameters. [4, 5-7] There is no standard approach for pts. at high risk for relapse following local treatment. Hormonal treatment remains the most effective systemic treatment for metastatic PCa. The lungs are second or third only to bone and or lymph nodes as metastatic sites from PCa while autopsy rates show an incidence of between 23 and 74% [8]. The reported incidence of clinically apparent pulmonary metastases at initial diagnosis is 527%. Pulmonary lesions were part of the initial pattern of metastases in 2% of the population and developed

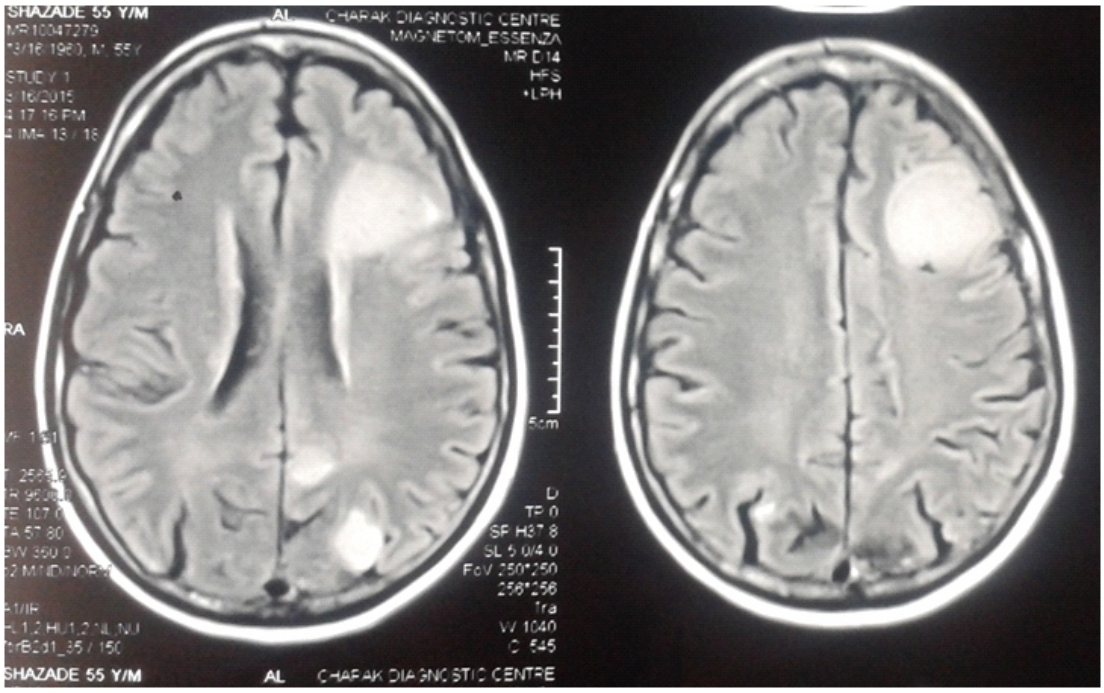

Fig 2. MRI brain showing multiple metastatic lesions with surrounding edema (T2 flair axial)

Frontal, Left Temporal and Left Parietal region (Figure 2). He presented in the department of Radiation Oncology of our institute on 19/03/15. He was planned for whole brain radiotherapy with dose 20 Gy in 5 fractions @ 2 Gy per fraction over 1 week with medical decompressive treatment which was completed on 27/03/15. Patient (pt.) discharged in stable condition with supportive treatment but expired at his native place within a week.

DISCUSSION

The management of pts. with high-risk PCa represents a major challenge to all disciplines involved in the treatment of this common malignant neoplasm.

Among the basic requirements for early intervention in high risk pts., are disease's natural history, including identification of key prognostic factors and the availability of active systemic subsequent to other metastatic sites in 1.6% of the population [9].

Brain metastasis is very rare. The reported incidence at autopsy was 0.6% to 4.4% and mostly involved the leptomeninges (67%), followed by the cerebrum (25%) and cerebellum (8%). [10] Antemortem diagnosis of intracranial metastases has been achieved in only 0.1% of cases. Routes of dissemination of advanced stage PCa to the central nervous system include direct extension from a skull lesion, lymphatic spread and vascular embolization.

In this report, we document a case of PCa where pulmonary and liver metastases with lymphadenopathy occurred at initial presentation without any concomitant osseous or multiorgan involvement and pt. survived for 3 year without any further complaint, then he developed bone and brain metastasis with multiorgan failure.

CONCLUSION

PCa pts. generally have long survival in-spite of having multiple metastases. There is advancement in the management by understanding its natural course and development of newer agent in the form of chemotherapy, hormonal therapy as well as targeted therapy. Radiotherapy plays an important role as an adjuvant, palliative as well as radical treatment, as and when indicated. In our case, the pt. in-spite of diagnosed as a case of PCa in year 2012, he did not take any treatment and only in the last stage in the year 2015, he came to us for only palliative radiotherapy to the brain. Pt. survived overall for almost 3 years since the date of diagnosis with metastases. We need more research in this regard that may lead to increase in overall survival.

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