

Oncology

Lung malignancy in prostate cancer: A report of both metastatic and primary lung lesions

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1. Introduction

Prostate cancer is the most common non-cutaneous malignancy diagnosed in men. When it metastasizes, it usually spreads to bone and/or lymph nodes. A handful of cases have described prostatic metastases to the lung; however, this is usually in the setting of existing bone lesions [1]. Here we describe a unique case in which a patient was found to have both metastatic prostate cancer to the lung and a primary lung cancer in the absence of any other evidence of extra-prostatic disease.

2. Case presentation

This is a 60 year-old man who underwent a trans-urethral resection of his prostate (TURP); pathology returned as Gleason 4 + 4 = 8 (Grade group 4). Prostate specific antigen level (PSA) was 44ng/dL. Bone scan was negative but PET revealed an FDG-avid lesion in the left lung. This was further evaluated with a chest CT scan that confirmed a 2cm left upper lobe

lung mass (Fig. 1). He was referred to Thoracic Surgery for evaluation.

Pulmonary function tests were within normal limits however he had a 40+ pack-year smoking history. He underwent thoracoscopic resection of the lung mass. Incidentally, there were multiple small 2–3mm nodules present on the surface of the lower lobe. Several of these were removed with additional wedge resections and frozen sectioning was positive for malignancy. Given the diffuse disease, a mediastinal lymph node dissection was performed to ensure adequate pathological staging.

On final pathology, the nodule was interpreted as primary pulmonary adenocarcinoma (Fig. 2). The wedge resections contained nodules positive for PSA and were interpreted as metastatic prostatic adenocarcinoma (Fig. 3). The aortopulmonary lymph node was positive for prostatic adenocarcinoma and the rest were negative. Given his isolated primary lung cancer and high likelihood of response to therapy for metastatic prostate cancer, it was recommended that he undergo completion left upper lobectomy for treatment of his Stage I primary lung malignancy.

After completion lobectomy, final Pathology revealed no additional lung malignancy, but a small 2mm focus of prostate cancer. He was referred back to his Medical Oncologists and treated with 6 cycles of docetaxel and Lupron therapy. After treatment, repeat staging imaging was negative. His PSA following treatment was 0.7ng/dL. He is planned to continue with Lupron therapy, and will undergo routine surveillance for his T1bN0 stage IA lung cancer.

3. Discussion

Metastatic prostate cancer is a relatively common entity and typically presents with bone metastasis. Metastatic prostate cancer to the lungs is rare, however. In fact, in the absence of other metastatic lesions, less than 5 cases have been previously reported [1–4]. In their case report from 1999, Smith et al. describe a patient who underwent a radical prostatectomy for Gleason 4 + 5 = 9 (Grade group 5) disease. When his PSA levels rose,

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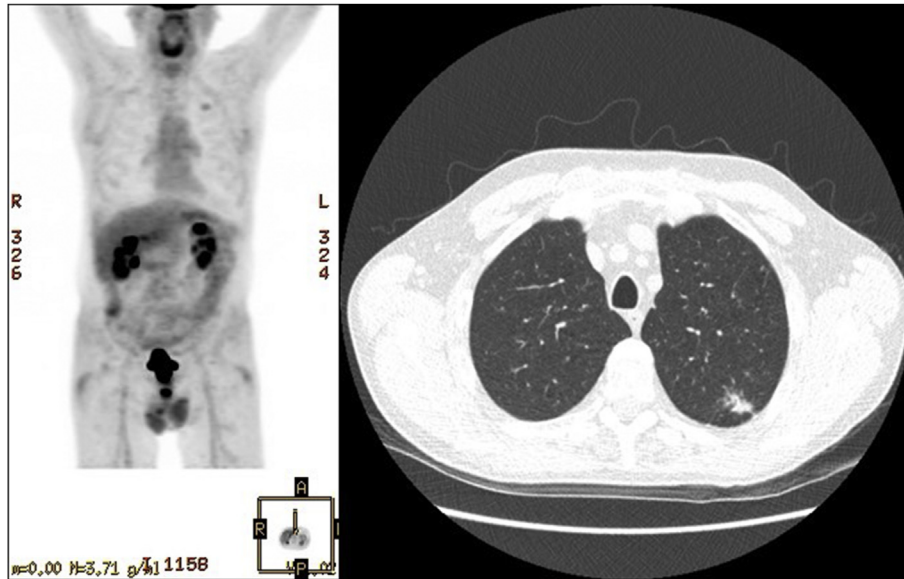


Fig. 1. Left lung lesion seen on PET (left) and CT Chest (right).

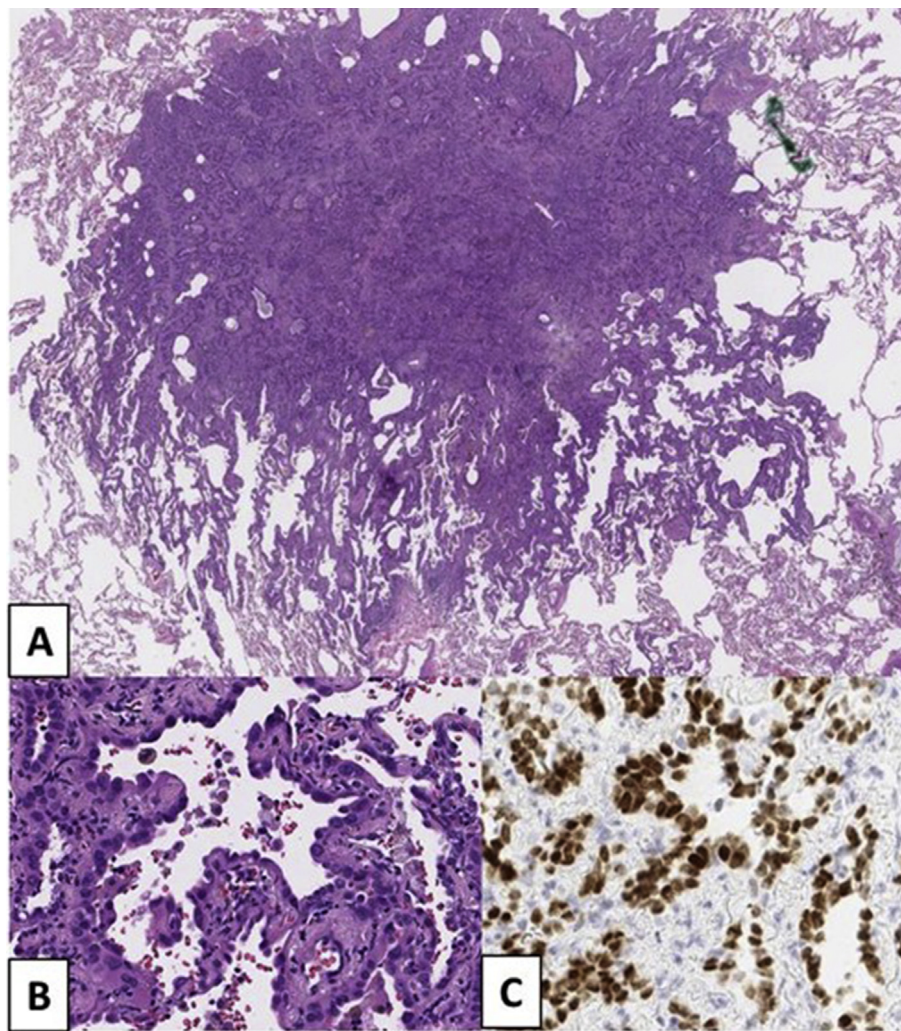


Fig. 2. (A) Left upper lobe wedge resection of the lung with 2.2 cm nodule of tumor (H&E, original magnification 100 \times); (B) High power image of left upper lobe tumor with lepidic and acinar growth pattern in the pulmonary parenchyma (H&E, original magnification 200 \times); (C) TTF-1 immunohistochemical stain of pulmonary tumor, consistent with lung primary (TTF-1, original magnification, 200 \times).

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