

Lung Carcinoma with Metastasis to Thyroid and Radius of Left Forearm, A Rare Case

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ABSTRACT

Adenocarcinoma of lung is commonest cancer of lung. Sufferings of this dreaded disease are mainly due to bony metastasis in the form of pain and pathological fractures. Unfortunately all the treatment option available for this malignancy are not proved useful. Present patient was a case of Adenocarcinoma of lung with complaint of cough since 10 months and swelling over left forearm since 2 months. On investigation found to have lung carcinoma with metastasis to right lobe of thyroid, radius of left forearm and skull and also having malignant pleural effusion. He was treated with palliative treatment including radiation and chemotherapy. After extensive search in literature it was found that only three cases were of thyroid metastasis from lung adenocarcinoma reported. All had metastatic disease. As disease was systemic and widespread hence obviously with bad prognosis. Our aim behind reporting this case is that as it is fourth case of thyroid metastasis from lung adenocarcinoma hence it is worth reportable and it suggest need of more extensive research to invent new effective anti-cancer drugs to decrease sufferings of these unfortunate patients. As this is advanced case of lung cancer there is no role of surgery. Palliative treatment including chemotherapy and radiotherapy seems to be not effective, hence it suggest need of more extensive research to invent new effective anti cancer drugs to decrease sufferings of these unfortunate patients.

KEY WORDS: LUNG ADENOCARCINOMA; BONE METASTASIS; RADIOTHERAPY PLEURAL EFFUSION.

INTRODUCTION

Lung cancer ranks two among all the cancers of human being and equally distributed in male and

female. Adenocarcinoma of lung is commonest lung malignancy. These are classified into two pathological variants one is small cell and other is non small cell carcinoma (Travis WD et al., 1995). Adenocarcinoma is a tumour of nonsmokers (Schreiber G et al., 2003). New studies reveal that lung cancer in nonsmokers is due to different pathogenesis like environmental pollution and occupational exposure. Mutations of gene play a very strong role in aetiology of lung cancer in nonsmokers (Henschke C I et al., 2008).

Secondary thyroid from lung malignancy is very rare phenomenon. Thyroid cancers are classified mainly

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in two types one is primary and other is secondary deposits from primary growth of other organs. Most of the primary tumours of thyroid bears good prognosis except of anaplastic carcinoma of thyroid. Papillar, lymphoma and follicular carcinoma have excellent prognosis and medullary carcinomas have intermediate outcome (Spira A et al., 2004). Obviously secondary metastasis patient have bad prognosis depends on nature of primary tumour. Commonest primary is renal cancers and lung is rare site. (Gu H et al., 2020). Secondaries in thyroid from adenocarcinoma of lung rare thing is not commonly reported particularly in male patient. Only few cases of intrathyroid metastases from primary lung adenocarcinoma were reported in literature. In general, lung adenocarcinoma induces the distant metastases in the liver, adrenal, bone and brain (Dao A et al., 2017).

After extensive search in literature it was found that only three cases were of thyroid metastasis from lung adenocarcinoma reported. All had metastatic disease. as disease was systemic and widespread hence obviously with bad prognosis (Ahmet Selçuk Can et al., 2015). Our aim behind reporting this case is that as it is fourth case of thyroid metastasis from lung adenocarcinoma hence it is worth reportable and it suggest need of more extensive research to invent new effective anti cancer drugs to decrease sufferings of these unfortunate patients.

Case Report: A 71-year-old male patient came to Acharya Vinobha Bhav Rural Hospital with complaint of cough for 10 months and swelling over left forearm since 2 months. Patient is known case of CVA 3 yrs back (Tab. Ecospirin AU 75/10 OD), Hypertension since 3 years (Tab Prazosin 2.5 mg OD) and BPH since 3 years (Tab Urimax D 0.4/0.5) There was no other co morbidity associated with it (Like Diabetes milletus, Plmonary Tuberculosis, Bronchial Asthma). Patient gives no history of any similar complaints in the family members. On General Examination the patient was conscious cooperative and well oriented to time, place, person he was Afebrile with Blood pressure of 120/80 mmhg, Pulse rate of 82 bpm and respiratory rate of 21 breath per min. On local examination- Swelling is present over left forearm and tenderness was present. On systemic examination Respiratory system - Air entry is reduced on left side.

Routine blood investigation were done His FNAC from swelling over lateral aspect of left forearm was done -Microscopic features -finding are suggestive of malignant neoplasm most likely to be metastasis of adenocarcinoma second possibility is of dedifferentiated chondrosarcoma. Biopsy is advised for confirmation. Flurodeoxyglucose PET- CT scan of whole body was done he was a suspected case of carcinoma of left lung -Hyper metabolic soft tissue lesion is noted in left hilar region along with ill defined pleural based soft tissue lesion in lower lobe of left lung field -likely primary neoplastic. Multiple discrete nodules are noted in bilateral lung field - appear metastatic. Hyper metabolic mediastinal and right supra clavicular node as described as metastatic. Hyper metabolic multiple liver lesion and

extensive skeletal lesion as described -appear metastatic. A hypo dense nodule is seen involving the lateral limb of left adrenal gland with low grade metabolism appear suspicious for metastatic involvement. Low grade focal increased metabolism is seen in right lobe of thyroid gland. Hyper metabolic scalp based soft tissue lesion is noted in parietal region of skull bone as described appears metastatic. Pleural tapping was done due to gross pleural effusion on left side decrease AAP pleural tapping was done 600 ml fluid taken out. Pleural fluid cytology it's shows three to four small group of epithelial cells showing pleomorphic hyper chromatic nuclei few cell shows vacuoles cytoplasm and in background many scattered lymphocytes. Cytomorphological feature suggestive of Deposit of epithelial malignancy (Adenocarcinoma). CECT Thorax - Left lower lung primary lesion with adjacent consolidation collapse (Upper lobe) with multiple subcentimetres lung metastasis. Multiple Liver Bone and Left adrenal metastasis. Bilateral pleural effusion and pericardial effusion (see figure 1).

Thyroid ultrasonography showed a right thyroid lobe 20×15×12 mm hypoechoic solid nodule with irregular borders. Ultrasonography-guided thyroid fine-needle aspiration biopsy showed metastasis from adenocarcinoma of lung.



Figure 1: X-ray chest and left forearm

Above figure shows xray of left pleural effusion and bony metastasis in radius.

DISCUSSION

Lung adenocarcinoma is, the most common type of non-small cell lung cancer (NSCLC) lung cancer. Lung malignancy many time considered on the basis of abnormal imaging or atypical presentation. Bronchoscopy is primary investigation of choice, including of cytopathologic examination of bronchoalveolar lavage, endobronchial brushings and biopsies from the doubtful area of bronchial tree. Its specificity is high but unfortunately sensitivity is low. The major obstacles in treatment of lung malignancy is a non availability of early-diagnostic tools, due to this delay around two third of patients land in advanced or metastatic disease and therefore not possible to perform a curative surgical removal. As Adenocarcinoma in advance stage have many life threatening complication like pleural effusion, pneumonia, neuropathy, hemoptysis, vision problem, dizziness, headache and dysphagia. In the early stage of disease surgery is treatment of choice and in

advance stage combination of surgery chemotherapy and radiation is used. Gu H et al report a patient with advanced lung adenocarcinoma with epidermal growth factor receptor (EGFR) mutation gene. It was resistant even to osimertinib to control primary disease and bone metastasis. similar bad prognosis was observed in present case.

Dao A et al presented, a gentleman of Moroccan nationality of age around 60 years was presented with dyspnea, dry cough, and chest pain. He had history of chronic smoking. On physical examination found to have a right thyroid nodule. Imaging revealed primary left lung tumour with mass in the right lobe of the thyroid. Patient undergone bronchoscopy and obtained biopsy which revealed adenocarcinoma of the lung. As a palliative chemotherapy he received combination of cisplatin. The malignancy was not responded and progresses to brain metastases. Ultimately patient not survived and succumb, 2 months after despite brain radiotherapy. Prognosis wise this was similar to present case report.

Ahmet Selçuk Can and Gülistan Köksal presented a middle aged gentle man with a large mediastinal mass causing superior vena cava obstruction. Histopathology reveals adenocarcinoma of lung. After six months of chemotherapy and radiotherapy disease was not controlled and his disease progresses to multiple brain and thyroid metastases. His brain secondaries worsened even after radiotherapy. This and two more cases were only reported in past. All had advanced stage and secondary in the thyroid gland which one identified by cytology. These all had worst prognosis, not survived more than one and half year. Present case is fourth case reported in literature with poor prognosis and thyroid secondary. Ozgu ES et al present a case report of a old gentle man of 65 year age with adenocarcinoma of lung with secondary in the thyroid gland. He was also have secondary thyrotoxicosis and multinodular goiter. This patient reported by Ozgu ES et al reveals difficulties in arriving at correct diagnosis, particularly if the patient may had two potential aetiologies of thyrotoxicosis. Thyroid scan appears very useful in this situation.

Katsenos S. et. al. report case of secondary lesion in thyroid from primary lung cancer. Patient also have brain metastasis. Immunocytochemistry and fine needle aspiration cytology confirms the nature of thyroid metastasis. This is case was again similar to present case. (Agrawal et. al). reported about metastatic lung cancer presenting with jugular foramen syndrome. Related studies were reviewed (Gupte et. al). studied incidence of lung cancer in patients of newly and previously diagnosed chronic obstructive pulmonary disease. Studies on different carcinoma and therapeutic management were reviewed.

CONCLUSION

As this is advanced case of lung cancer there is no role of surgery. Palliative treatment including chemotherapy

and radiotherapy seems to be not effective, hence it suggest need of more extensive research to invent new effective anti cancer drugs to decrease sufferings of these unfortunate patients.

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