

# Severe pain and weakness in lower extremities in a lung adenocarcinoma case

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## Abstract

Neuropathy may complicate the course of the disease in subjects with cancer. Here we report a middle aged man with lung cancer whom presented to our clinic with weakness in lower extremities. A 49 years old man presented with pain and weakness in the legs and pretibial edema. His complaints were began 2 months ago. He reported that he was a heavy smoker by smoking 2 to 3 packets of cigarettes daily, for 30 years. Thoracic CT revealed a mass with in apical of basal segment of lower lobe in right lung and a metastatic mass lesion, destructed the 3<sup>rd</sup> right costa laterally. CT was also revealed widespread metastatic nodules in the liver. Lytic metastatic lesions were noted in T1, T5-8 and L1 vertebrae. Biopsy of the mass has been reported as adenocarcinoma of the lung. Weakness and pain in extremities in a subject with a history of heavy smoking should alert physicians for possible lung malignancy. A thoracic CT should be performed for establishing diagnosis.

## Introduction

Cancer patients may suffer from neuropathy via different ways. It may be associated with tumoral infiltration of the spinal cord, chemotherapy, metabolic complications such as hypercalcemia, nutritional deficits or paraneoplastic syndrome. Neuropathy eventually develops in about 15% of the cancer cases [1].

Here we report a middle-aged man with lung cancer whom presented to our clinic with weakness in lower extremities.

## Case Report

A 49 years old man presented with pain and weakness in the legs and pretibial edema. His complaints were began 2 months ago. Leg pain was getting more severe day by day. Despite he was not complaining of numbness, weakness was worsening parallel to leg pain. His doctor in another institution had prescribed him non-steroidal anti-inflammatory drug with a diagnosis of lumbar disc hernia. However, his complaints were not relieved.

He reported that he was a heavy smoker by smoking 2 to 3 packets of cigarettes daily, for 30 years. His medical history was positive for type 2 diabetes mellitus, hypertension and coronary heart disease. His daily medications include aspirin 100 mg, candesartan/hydrochlorothiazide 16/12,5 mg, atorvastatin 20 mg, carvedilol 12,5 mg, and metformin 2g (in two equal doses). His family history was irrelevant.

Physical examination revealed that he was well on appearance, conscious, cooperated and oriented. Blood pressure was 140 mmHg systolic and 80 mmHg diastolic. Heart rate was 84 beats per minute and respiratory rate was 16 per minute. His body temperature was 36,5°C. Bilateral rhonchi and crackles in both hemi-thorax was noted. Other positive physical examinations include, hepatomegaly, bilateral ++ pretibial edema and bilateral 4/5 muscle strength in both lower extremities. Rest of the physical examination findings were normal.

Laboratory findings were as follows: fasting plasma glucose 180 mg/dl, serum creatinine 0.64 mg/dl, aspartate transaminase 68

U/L (reference range: 5-34 U/L), lactate dehydrogenase >1500 U/L (reference range: 125-220 U/L), gamma glutamyl transferase 662 U/L (reference range: 12-64 U/L), hemoglobin: 11.1 g/dL, mean corpuscular volume 91 fL, serum iron 19 ug/dL (reference range: 31-144 ug/dL), iron binding capacity 177, ferritin 349 ng/dL (reference range: 21-274ng/dL) and erythrocyte sedimentation rate 101 mm/hour. Vitamin B12 and folate levels in the serum and all of the serum electrolytes and biochemistry parameters were normal.

Right hilar opacity was visualized in a chest x ray radiograph. Therefore, a computerized tomography (CT) of thorax ordered. Thoracic CT revealed a 25x35x30 mm mass with lobulated contour in apical of basal segment of lower lobe in right lung and a metastatic mass lesion with 32x45x36 mm diameters, destructed the 3<sup>rd</sup> right costa laterally. CT was also revealed widespread metastatic nodules in the liver. Lytic metastatic lesions were noted in T1, T5-8 and L1 vertebrae. The lesion in right lung was biopsied by interventional radiologist. The patient's medical condition worsened, respiratory failure developed, and he transferred to intensive care unit. He deceased due to multisystem failure on 7<sup>th</sup> day of admission. After he died, pathology specimen was reported the biopsy material as adenocarcinoma of the lung.

## Discussion

Adenocarcinoma is the most common type of lung cancers [2]. It has an aggressive course despite treatment and patients' survival is about 5 years. Diagnosis usually established in advanced stages. Present case was stage 4 adenocarcinoma because there were hepatic and spinal metastasis before the diagnosis confirmed by histopathologic examination.

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Adenocarcinoma is more common in men than women [3]. Risk of lung adenocarcinoma increase by smoking; both duration of smoking habit and number of cigarettes smoked per day [4,5]. Like the literature, present patient was a 49 years old man and he was a heavy smoker for 30 years.

The rate of cancer related pain is about 71% in advanced or metastatic cancers [6]. Lung cancer is the third most common cancer that associated with pain [7]. Present case was also presented with leg pain and weakness in lower extremities.

Lung is the first, liver is the second, adrenal gland is the third and bone is the 4<sup>th</sup> common site of metastases in lung cancer cases [8]. Although lung, bone (vertebral) and hepatic metastases were present in the patient, no adrenal metastasis were detected in CT scan.

Pain and weakness in lower extremities in adenocarcinoma may be due to chemotherapy, metabolic complications, nutritional deficits, or infiltration of spinal cord or nerves by the tumor. Vitamin B12 and folate were normal therefore nutritional deficiencies were ruled out in differential diagnosis in present case. He was not received chemotherapy since the diagnosis was confirmed after he deceased. Serum electrolytes of the patient, including serum calcium were in normal range, so, metabolic neuropathy was ruled out, too. Vertebral and spinal metastases may be responsible of weakness and pain in lower extremities in present case. However, it was misdiagnosed with lumbar disc hernia in another hospital and a delay of diagnosis encountered in the case.

## Conclusion

In conclusion, weakness and pain in extremities in a subject with a history of heavy smoking should alert physicians for possible lung malignancy. A thoracic CT should be performed for establishing diagnosis.

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