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Left Atrial Extension of Lung Carcinoma Simulating Myocardial Infarction, Unusual Presentation: Case Report and Literature Review

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ABSTRACT

Lung malignancy invading the left atrium is rarely seen. We present a patient with a fast growing symptomatic lung mass. Electrocardiogram showed persistent coving ST elevation with no biomarker change. Transthoracic echocardiography showed a large left atrial mass attached to the free walls and extended into its appendage. An apparent continuity with a large lung mass compressing left ventricular lateral wall was observed which was better evident in computed tomography of the chest. ***(Tanaffos2011; 10(2): 69-71)***

Key words: *Left atrial mass, ST elevation, Lung malignancy*

INTRODUCTION

Lung malignancy can extend in various directions. But encroachment into the left atrium is a rarely reported phenomenon. Lung mass causing ST elevation as in myocardial infarction is also not frequently seen and combination of these rarities in a single patient is distinctly uncommon.

CASE SUMMARIES

A 47-year-old man presented with gradually progressive cough and dyspnea of 6 month duration.

He was a heavy smoker and did not have any remarkable medical or surgical history. He had a rapidly progressing left lung mass with collapse.

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Pericardial involvement was evident in CT scan of the thorax. He was initially admitted to thoracic ward and complained of chest discomfort. A few days later, electrocardiography was performed which showed coving ST elevation in lateral leads (Figure1). The patient was transferred to cardiology ward for a suspected myocardial infarction. ECG was repeated and showed persistent ST elevation without any evolutionary changes (Figure 2) or biomarker elevation. Transthoracic echocardiography (done on the day of transfer to cardiology ward) showed a large (3cm×5cm) mass in the left atrium which was attached firmly to the free wall and extended into the left atrial appendage (Figures 3 and 4). Mitral valve was absolutely normal and the patient was in sinus rhythm all throughout. Only two dilated pulmonary veins were visible, which were surrounded by a mass

that appeared to be in continuity with a large extracardiac mass compressing the left ventricular lateral wall and restricting its motion (Figure 5).CT scan of thorax showed a large mass in the left lung compressing the heart (Figure 6). CT-guided fine needle aspiration cytology revealed it to be a case of small cell carcinoma of the lung.

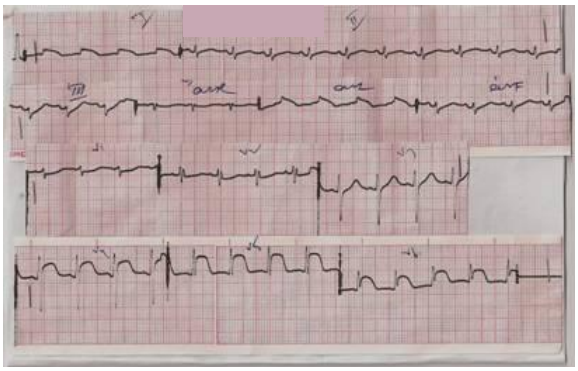

Figure 1. ECG showing ST elevation, mostly over the lateral leads

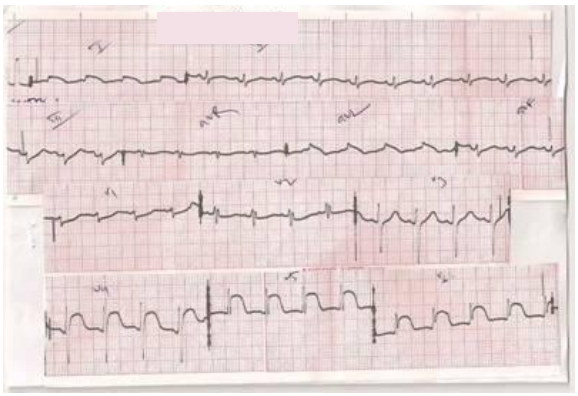

Figure 2. ECG showing ST elevation, mostly over the lateral leads (2 days later)

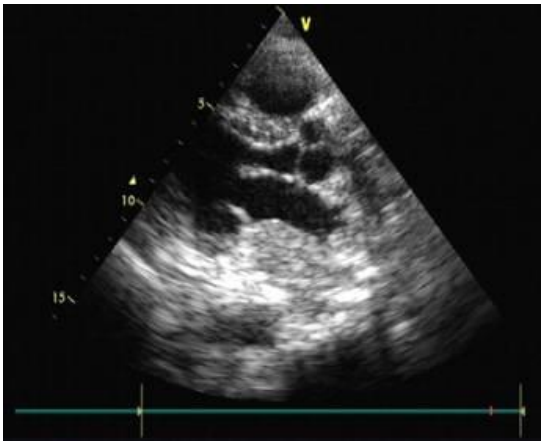

Figure 3. Parasternal long axis view showing LA mass

Figure 4. Parasternal short axis view showing left atrial appendage extension

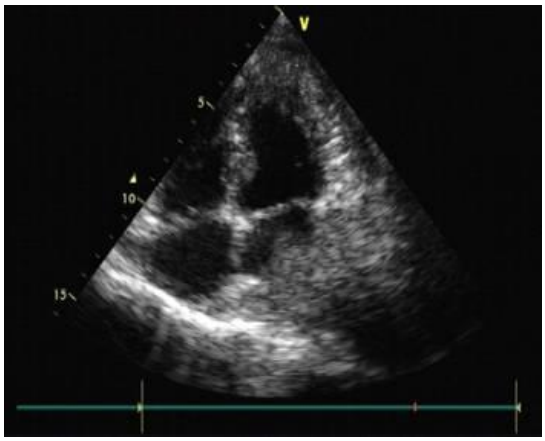

Figure 5. Apical four chamber view showing the mass obscuring pulmonary veins

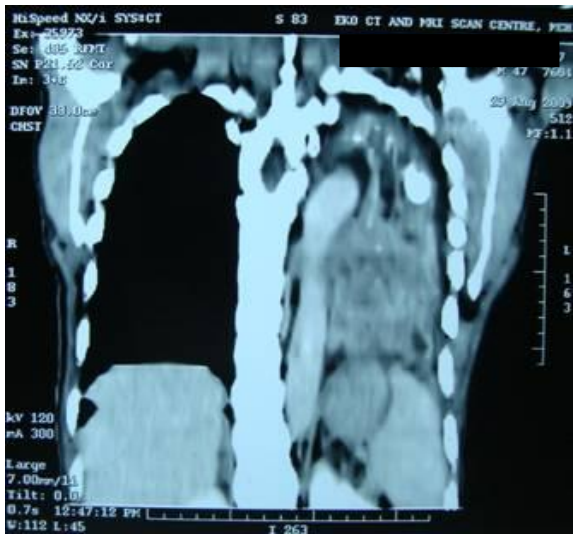

Figure 6. CT-scan showing a large mass in the left lung compressing the heart

DISCUSSION

Intravenous spread of lung cancer into the left atrium through the pulmonary vein, although theoretically possible, has been rarely seen. Although cardiac metastasis is common in lung carcinoma, antemortem diagnosis of left atrial extension of bronchogenic carcinoma is a rare phenomenon. Very few of such cases have been reported worldwide. A left atrial mass as a manifestation of lung carcinoma was reported by researchers in Australia (1) and Memphis (2). Bronchogenic carcinoma mimicking left atrial myxoma was reported from Bombay, India (3) .Left atrial invasion by lung carcinoma through a pulmonary vein was visualized by Lestuzzi et al. from Italy (4), by Desai et al. from Pittsburgh (5) and also by Watanabe and Kubo (6). Using positron emission tomography-computed tomography (PET-CT), intravenous extension of lung carcinoma to the left atrium has also been demonstrated (7). However, the presentation of our case, a lung malignancy with left atrial extension mimicking ST elevation as in myocardial infarction is unique.

Left atrial extension of lung malignancy can occur, although rare and its ECG expression may mimic myocardial infarction probably due to pericardial involvement.

REFERENCES

1. Kadappu KK, Rajaratnam R, Kachwalla H, Nguyen PD. Lung cancer mimicking left atrial mass. ***Postgrad Med J*** 2008; 84 (993): 386- 7.
2. Campos P, D'Cruz IA, Dweik HW, Shirwany A, Umpierrez M. Posterior mediastinal spread of bronchogenic carcinoma simulating a mass within the left atrium. ***Echocardiography*** 2004; 21 (4): 341- 3.
3. Mehan VK, Deshpande J, Dalvi BV, Kale PA. Direct extension of bronchogenic carcinoma through pulmonary veins into the left atrium mimicking left atrial myxoma. ***Chest*** 1992; 101 (6): 1722- 3.
4. Lestuzzi C, Viel E, Mimo R, Meneguzzo N. Left atrial invasion by lung carcinoma through a pulmonary vein. ***Int J Cardiovasc Imaging*** 2001; 17 (2): 107- 10.
5. Desai MY, Mankad S. Extension of bronchogenic carcinoma through pulmonary vein into the left atrium detected by echocardiography. ***Echocardiography*** 2004; 21 (2): 189- 91.
6. Watanabe N, Kubo K. Images in cardiology: Intra-left atrial invasive mass extended via the pulmonary vein. ***Heart*** 2001; 85 (3): 271.
7. Pitman AG, Solomon B, Padmanabhan R, McKenzie AF, Hicks RJ. Intravenous extension of lung carcinoma to the left atrium: demonstration by positron emission tomography with CT correlation. ***Br J Radiol*** 2000; 73 (866): 206- 8.