

Dyspnea after CABG, What Do You Think: A Case Report

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Abstract

Diagnosis of iatrogenic pneumothorax is often delayed, which should make physicians and critical care nurses vigilant. A 55 year old man referred to the emergency unit with chief complain dyspnea one week after CABG. In pulmonary CT angiography, huge pneumothorax was presented in left lung. Patient underwent emergent chest tube insertion and discharged two days later in a good condition.

Keywords: CABG; CT angiography; Pneumothorax

Introduction

Post Coronary Artery Bypass Graft (CABG) surgery, pulmonary complications account for postoperative morbidity in many patients. These are occurred in 99.4% of CABG patients. Atelectasis, pleural effusion and pneumonia were the most frequent complication post CABG [1]. Pneumothorax is an infrequent complication of cardiac surgery. It is more common if postoperative mechanical ventilation is prolonged or if high levels of PEEP is required.

A history of COPD (Chronic Obstructive Pulmonary Disease) and bronchitis were precursors of a postoperative pneumothorax.

Iatrogenic pneumothorax occurs most often following trans-thoracic needle biopsy (24%), subclavian vein catheterization (22%), thoracentesis (20%), transbronchial lung biopsy (10%), pleural biopsy (8%) and positive pressure ventilation (7%) [2]. Diagnosis of iatrogenic pneumothorax is often delayed; therefore physicians and critical care nurses must be vigilant.

Case Report

A 55 years old man referred to the emergency unit of a general hospital with chief complain dyspnea. Dyspnea was started from one day before his referral, onset was gradual. It is not aggravated by exertion and he did not complain of chest pain or palpitations or cough, he underwent coronary artery bypass graft surgery about one week ago. He denied fever and chills and didn't have diabetes, but was hypertensive. He did not smoke at anytime.

His family history was positive for coronary artery disease but negative for asthma. Findings on physical examination were: an anxious, a febrile man who had sinus tachycardia, at the rate of 110 per minute, his blood pressure was 135/84 mmHg. He didn't have respiratory distress. Jugular venous pressure was normal, and due to chest pain, he did not have good cooperation for examination of lung. Examination of the thorax revealed normal anteroposterior diameter, an elevated respiratory rate 22/min, no spine deformities, no tracheal deviation. Mid sternotomy wound was clean and did not have discharge. Patient did not use accessory muscles for breathing. There are no rales or wheezing.

Cardiovascular examinations revealed grade 2/6 systolic murmur in apex, peripheral perfusion of the extremities were normal and there is not edema or cyanosis or size difference. Pulse oximetry revealed O₂ saturation 90%.

Laboratory data included a normal hemogram, urinalysis, and electrolytes. Erythrocyte Sedimentation Rate (ESR) and C-reactive protein levels were normal.

Liver function and coagulation tests were normal. Chest roentgenogram showed mild cardiomegaly, no evidence of lung abnormality (It is not be possible to perform an upright film). Electrocardiogram was

abnormal due to left axis deviation, nonspecific ST-T change in inferior leads. 2D echocardiography revealed minimal pericardial effusion (5 mm posterior), mild dilated LV and ejection fraction of 45%. D-dimer was checked and it was elevated, so patient underwent pulmonary CT angiography.

His shortness of breath did not improve with oxygen, anti ischemic and anti failure therapy or anticoagulation. In pulmonary CT angiography, huge pneumothorax was presented in left lung, (no mediastinal shift), patient underwent emergent chest tube insertion and dyspnea was improved. After two days air leak stopped and patient discharged in a good condition.

Discussion

In traumatic pneumothorax, where it is not be possible to perform an upright chest radiography, it may miss up to a third of pneumothoraces [3], while CT remains sensitive. Strong clinical suspicious may lead to diagnosis. In a study of 315 patients who had CABG surgery at a large healthcare center risk factors for pulmonary complication were recorded: history of bronchitis and COPD were related to post-operative pneumothorax in most cases [3]; in another retrospective nine-year analysis of adult cardiac surgical procedures, twenty-one of 1463 patients suffered a postoperative pneumothorax for an overall incidence of 1.4% [4]. Although it is not frequent, but it must consider as a lung complication after CABG. Our patient did not present with the common symptoms and signs associated with huge pneumothorax however early identification of this fatal complication of CABG is critical to prevent morbidity and mortality of patients.

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Received April 16, 2012; Accepted June 26, 2012; Published June 30, 2012

Citation: Rohani A (2012) Dyspnea after CABG, What Do You Think: A Case Report. *J Clin Case Rep* 2:162. doi:10.4172/2165-7920.1000162

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