A 29 year-old Thai woman was admitted to our hospital with a history of dyspnea and chest discomfort for 3 months prior to admission. She presented with chest pain, severe cough and breathing difficulty during lay down. General practitioner treated her as upper respiratory tract infection many times. Her symptoms got worse and she developed low grade fever and progressive dyspnea from NYHA Fc I to Fc III. She was then referred to cardiologist for further investigation and treatment after abnormal chest radiography was detected.

Physical examination revealed female patient with full consciousness and low grade fever. Body temperature was 37.8 °C, blood pressure 105/69 mmHg, respiratory rate 24 time/min and heart rate 100 beat/min, regularly. Her neck vein was engorged. Fine crepitations over both lower lung fields were detected. Point of maximal intensity of the heart was at the 5th intercostal space – anterior axillary line. There was no thrill, prominent $S_1$ was detected with normal $S_2$. Left parasternal heave and diastolic murmur grades III/VI at apex were detected. She had mild hepatomegaly and no pitting edema on both lower extremities.

Initial laboratory findings revealed mild anemia with high ESR level of 65 mm/hr.

The Electrocardiogram (Figure 1) showed sinus tachycardia with tall R in V1. Chest radiography revealed a borderline cardiomegaly without pulmonary congestion. Echocardiography (Figure 2-3) revealed huge oscillating mass, size 6x4x4 cm in the left atrium moving into the left ventricle and obstructed the mitral valve orifice, the stalk of the mass attached to the left interatrial septum and there was moderate pulmonary hypertension with right ventricular systolic pressure (RVSP) of 65 mmHg. The most likely diagnosis in this patient was left atrial myxoma with relative mitral stenosis and pulmonary hypertension.

Figure 1. ECG shows sinus tachycardia, rate 100 beat/min, normal axis, tall R in V1
Her symptom of dyspnea due to tumor obstruction at the mitral valve orifice was controlled by diuretic drug and beta blocker. Surgical resection of atrial myxoma and interatrial septum with patch closure was performed urgently. The pathological finding was left atrial myxoma sized 8x4x4 cm. After surgical resection, she was discharged and follow up regularly without recurrent of tumor.

**Literature review**

Atrial myxoma is the most common primary heart tumor. Symptoms are frequently nonspecific, which poses a challenge in early diagnosis. Most atrial myxomas are benign and can be removed by surgical resection. Two-dimensional echocardiography is the diagnostic procedure of choice.

Atrial myxomas account for 40-50% of primary cardiac tumors. Approximately 90% are solitary and pedunculated, and 75-85% occurs in the left atrial cavity. Up to 25% of cases are found in the right atrium. Most cases are sporadic. Approximately 10% are familial and are transmitted in an autosomal dominant mode. Approximately 75% of sporadic myxomas occur in females. Female sex predominance is less pronounced in familial atrial myxomas. Myxomas have been reported in patients aged 3-83 years. The mean age for sporadic and familial cases are 56 years and 25 years, respectively. The most common site of attachment is at the border of the fossa ovalis in the left atrium, although myxomas can also originate from the posterior atrial wall, the anterior atrial wall, or the atrial appendage. Although atrial myxomas are typically benign, local recurrence due to inadequate resection or malignant change has been reported. Symptoms are produced by mechanical interference with cardiac function or embolization. Symptoms range from nonspecific symptoms, congestive heart failure, chest pain, syncope, and embolization to sudden cardiac death. Signs and symptoms of mitral stenosis, endocarditis, mitral regurgitation, and collagen vascular disease can be confused with those of atrial myxoma.

Physical examination, jugular venous pressure may be elevated, and a prominent A wave. A loud S1 is caused by a delay in mitral valve closure due to the prolapse of the tumor into the mitral valve orifice (mimicking mitral stenosis).
Lab studies are nonspecific and nondiagnostic. If present, abnormalities may include the following: elevated erythrocyte sedimentation rate (ESR) and elevated C-reactive protein and serum gamma globulin levels, leukocytosis, and normochromic or hypochromic anemia and hemolytic anemia may occur because of the mechanical destruction of erythrocytes by the tumor. Recent findings suggest that the production of interleukin-6 (IL-6) by the tumor itself may be responsible for the inflammatory and autoimmune manifestations. Electrocardiography may be normal or abnormal as atrial flutter, atrial fibrillation, or conduction disturbances. Imaging studies such as chest radiography show abnormal cardiac silhouette, mimicking mitral stenosis, unusual intracardiac tumor calcification and pulmonary edema. Echocardiography is the most useful for diagnosis. An atrial myxoma must be differentiated from a left atrial thrombus. The thrombus is usually situated in the posterior portion of the atrium and has a layered appearance. Presence of a stalk and mobility favors atrial myxoma. Doppler echocardiography can show the hemodynamic consequences of atrial myxoma. The findings are consistent with mitral stenosis or regurgitation.

Operative resection of the myxoma is the treatment of choice. The surgery is safe, with an early postoperative mortality of 2.2%. The recurrence rate is 1-5%. Recurrence is usually attributed to incomplete excision of the tumor, growth from a second focus, or intracardiac implantation from the primary tumor.

References