INTRODUCTION

Hemorrhagic pleural effusion is one of the common clinical problems of day to day practice. Apart from the trauma; malignancy, pulmonary tuberculosis, pulmonary embolism and few cases of synpneumonic effusion are the leading causes for hemorrhagic pleural effusion. We report a case of left sided hemorrhagic pleural effusion due to leaking aneurysm of the descending thoracic aorta.

CASE REPORT

Sixty nine year old, nondiabetic, hypertensive male attended to our emergency with a grade III dyspnoea on 26th April 2004. His shortness of breath, which was progressive in nature started 10 days back, preceded by short history of dry cough and moderate amount of hemoptysis three to four episodes. There was no history of chest pain, significant sputum production, fever, pedal of periorbital swelling, paroxysmal nocturnal dyspnea.

Seven days before he was admitted in a private hospital for cough hemoptysis and shortness of breath, where chest X-ray, plain CT scan of chest and other routine investigations were done. He received two units of blood for anemia there, but as his condition was deteriorating he was referred to our hospital with a provisional diagnosis of bronchogenic carcinoma.

He was a smoker (used to smoke 3 pack of bidi every day for more than 20 years) and had a history of recurrent chest infection, cough with purulent sputum production for the last 5-6 years. Since 1998 he had been on inhalational bronchodilator as needed. For the hypertension he is taking Amlodipine 10 mg once in morning for the last 3 years, and his BP was controlled with that medication.

At the time of admission, on examination the patient was tachypneic (Respiratory rate-32/min), pulse rate was 110/min, all the peripheral pulses were equally palpable, blood pressure was 138/90 mm of Hg in supine position at left arm and there was no difference with the right arm reading. The lower limb pressure was 148/94 mm of Hg. There was moderate pallor without any clubbing, cyanosis, jaundice or engorged neck vein. There was no significant lymphadenopathy. Examination of his respiratory system revealed normal upper respiratory tract, there was decreased movement in the left hemithorax with inter costal bulging on the left side, trachea shifted to the right, the vocal fremitus on the left side was diminished. There was dull percussion note on the left side from below 3rd intercostal space on the midclavicular line, breath sound on the right side was vesicular in type with few coarse crackles and wheezes in that side. On the left side below 3rd space the breath sound was diminished and 5th space downward it was absent. Examination of other system did not reveal any abnormality. His hemoglobin was 8gmj, TC-6200 (N-72 L22 M5 E1 B0). Previous Chest X-ray (March-2002) shows a mass at the left hilum (Fig. 1), another chest X-ray on 20th April 2004 six days before admission shows mild left sided pleural effusion in addition to the mass (Fig. 2). On admission chest X-ray was again done, which shows massive left sided effusion.
with mediastinal shift (Fig. 3). The patient was put in a propped up bed with moist O₂, and the rate adjusted to keep the spO₂ around 95%. Along with IV fluid in the form of DNS 8 hourly Inj Ceftriaxone (1gm IV BD), Inj Deriphylline (100 mg iv TDS), Inj Pantopazole (40 mg IV OD) was started. The Amlodipine (10mg OD) was continued as before. Therapeutic thoracocentesis was done and approximately 600 ml of pleural fluid was aspirated. The fluid was hemorrhagic in nature without any visible coagulum. Fluid cytology and biochemistry shows plenty of RBCs with neutrophilic leucocytosis. Pleural fluid hematocrit was 27%, whereas serum hematocrit was 31% (pleural hct : serum hct= 0.87). There was no malignant cell and mesothelial cell was 15%. Total protein was 1.8 gm%, sugar 76 mg%. Adenosine deaminase (ADA) level in the pleural fluid was 20 u/lit (normal limit being less than 40 u/lit).

Plain CT scan of thorax which was done three days before admission shows a large SOL, compressing the carina having a smooth out line and some areas of infiltration in the left lung with left sided pleural

![Fig. 1: Old chest X-ray (March 2002) showing left hilar mass](image1)

![Fig. 2: Chest X-ray on 20th April 2004 showing left sided pleural effusion along with left hilar mass](image2)

![Fig. 3: Chest X-ray on the date of admission (26th April 2004) showing massive left sided pleural effusion with mediastinal shift to right](image3)

![Fig. 4a: CT Scan of the thorax showing the mass with left sided pleural effusion. The well defined circular mass in front the vertebra compressing the trachea.](image4)
effusion and small area of consolidation (Figs. 4a, 4b). MRI done to confirm the nature of lesion (on 28th April), which revealed a saccular to fusiform aneurysm of descending thoracic aorta with area of thrombosis and thickened endothelial lining, measuring 101 mm in lateral dimension, 103 mm in AP dimension, 94 mm in cranio-caudal dimension, with pressure effect seen on mid and anterior mediastinal structure displacing vessels. Area of infiltration is seen in the left lung lower zone (Figs. 5, 6).

Consultation with Cardio thoracic surgeon was done and Metoprolol (25 mg BD) and Enalapril (5mg BD) was started in place of Amlodipine as per the advice of the cardiothoracic surgeon. The surgery was planned on 1st May, but on 30th April evening, suddenly the patient went on shock and all sort of resuscitative measures failed.

**DISCUSSION**

Aneurysmal degeneration though most common in abdominal aorta, it can occur anywhere in the human arterial system. By definition, an aneurysm is a localized or diffuse dilation of an artery with a diameter at least 50% greater than the expected size of the artery. The normal diameter of the thoracic aorta is less than 4.0 cm for the ascending, and less than 3.0 cm for the descending portions. A diameter exceeding 5 cm in descending thoracic aorta is usually considered as aneurysm of descending thoracic aorta. In our patient the diameter of the dilated part of descending thoracic aorta was 10.1 cm laterally and 10.3 cm in anteroposteriorly. Among the all thoracic aortic aneurysm descending thoracic aorta is involved in 27% and an estimated total incidence of des-thoracic aneurysm is 5.9 cases per 100,000 person year.

Aneurysmal degeneration occurs more commonly in the aged population. Aging results in changes in collagen and elastin, which lead to weakening of the aortic wall and aneurysmal dilation. The true etiology of aneurysm is probably multifactorial, and the condition occurs in individuals with multiple risk factors. Risk factors include smoking, hypertension, atherosclerosis, bicuspid or unicuspid aortic valves, and genetic disorders. Aneurysms are more common in men than in women and are more commonly associated in persons with chronic obstructive pulmonary disease than in those without the lung disease. In our case the patient was elderly male of 69 years. In him a number
of the risk factors like male sex, higher age, heavy smoking, hypertension, atherosclerotic vascular disease (as evidenced by IHD, old MI) and chronic obstructive lung disease were present.

Most thoracic aortic aneurysm are asymptomatic and are detected by chance on chest X-ray. In few percentage of cases the presentation is death due to sudden rupture. Symptomatic presentation occurs in very few percentages which are anterior chest pain (most common) due to rapid expansion of the aneurysm. Compressive symptoms like hoarseness of voice, stridor, cough, wheeze, left diaphragmatic palsy, dysphagia, are also reported as presenting symptoms. In few cases aneurysm may leak in pulmonary parenchyma causing Hemoptysis. Occasionally they may erode adjacent structures causing hemorrhage, tamponade and death. Erosion into the spine may cause back pain or instability. Spinal cord compression or thrombosis of spinal arteries may result in neurological symptoms of paraparesis or paraplegia.

In our case the patient presented with cough hemoptysis and painless massive hemorrhagic pleural effusion, all this symptoms are possibly due to infiltration of the aneurysm in the lung parenchyma and local compression of the trachea due to it’s large size.

In a elderly male smoker who present with symptom complexes of cough hemoptysis and massive painless hemorrhagic pleural effusion with X-ray evidences of mass lesion bronchogenic carcinoma comes as a first and foremost provisional diagnosis, but this case study suggest that aneurysm of des-thoracic aorta, though rare should be kept in mind as a differential diagnosis in these situations.

REFERENCES

Announcement

The 3rd A.P. State APICON Annual Conference APICON-KAKATIYA-2007 will be held at Kakatiya Medical College, Warangal on 11th and 12th August 2007.

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