

INTERESTING CASE OF IATROGENIC HAEMOTHORAXAjoy Kumar Behera¹, Narayan Mishra², Damodar Bindhani³¹Associate Professor, Department of Pulmonary Medicine, KIMS, Bhubaneswar.²Former Professor and HOD, Department of Pulmonary Medicine, MKCG Medical College, Berhampur.³Consultant Chest Physician, Aditya Care Hospital, Bhubaneswar.**ABSTRACT**

A middle aged male, known case of type-2 Diabetes Mellitus and Hypertension with irregular history of treatment presented with features of pneumonia left side with minimal pleural effusion. On admission investigation revealed Coronary Artery Disease (CAD) and treated aggressively for pneumonia and CAD with a plan for Angiogram. Subsequently, he developed pleural effusion on right side with increase in Shortness of Breath (SOB) for which thoracocentesis was done and fluid aspirated was exudative in nature with a lymphocytic predominance. Patient developed massive haemorrhagic effusion on right side with deteriorations of haemodynamic condition necessitating stopping of anticoagulant therapy, ICU admission for ventilation, ICT drainage and further urgent surgical intervention to remove huge clot from the right pleural cavity to save his life. It was a great experience in our learning curve and a message for all to stop anticoagulant therapy much ahead before even if planning for a very minor procedure like diagnostic thoracocentesis.

KEYWORDS

Pleural Effusion, Anticoagulant Therapy, Thoracocentesis, Haemothorax.

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INTRODUCTION

The accumulation of blood in the pleural cavity is known as haemothorax. The blood may come from chest wall, lung parenchyma, heart or great vessels. At times haemothorax is induced advertently by a physician or surgeon or by medical treatment or diagnostic procedure, which is known as "Iatrogenic Haemothorax." Here is an interesting case of life-threatening iatrogenic haemothorax with a major bleeding into the right pleural cavity, which occurred due to a simple procedure like a thoracentesis in a patient who was on Low Molecular Weight Heparin (LMWH) and needed surgical intervention along with prolonged ICU management to save the life.

History on Admission

A 51 years male, known case of type 2 diabetes mellitus and hypertension for last 10-12 years on irregular treatment admitted to the hospital on 29.4.2012 with complaints of body ache, fever, dry cough, mild SOB for one week with sudden discomfort and pain on left side of chest.

On admission patient was conscious, febrile (Temperature 101.6° F), pulse - 112/min, Respiration Rate - 29/min, BP - 150/90 mmHg, SpO₂ - 99% on RA. On examination, there was dull percussion note over left lower hemithorax along with diminished breath sound and coarse crepitation over that area.

Investigations on Admission

Cardiovascular examination - ECG showed normal sinus rhythm with HR - 110/min with ST Depression from Lead V1 to V6 lead; 2D Echo showed hypokinesia of lateral wall, EF - 45%, no PE, no MR. Trop-t test was positive.

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X-ray chest PA view showed features of pneumonia of left lower zone and mid zone with minimal pleural effusion left side (Fig. 1).

Blood investigation revealed increased total WBC count (14,400/ μ L), Haemoglobin 14.4 gm%, total platelet count 2.02 with PT/INR 18.4/1.45.

Renal function test (Serum urea 27.7 mg/dL and creatinine 0.9 mg/dL), liver function test and electrolytes like Na⁺ and k⁺ were within normal limit.

Provisional Diagnosis

Diabetes mellitus type-2, hypertension, CAD with consolidation of left lower lobe with minimal pleural effusion left side.

Treatment and the Course of Illness

Treatment was started immediately for DM, pneumonia with broad-spectrum antibiotics (Inj. Amoxicillin + Azithromycin), anti-coagulant/anti-platelet therapy (Sc low molecular weight heparin, Ecospirin and Clopidogrel) and Inj. Actamase along with other supportive treatment.

After 2 days fever started responding, but gradually SOB increased. Repeat X-ray on 4.5.12 showed bilateral pleural effusion (Fig. 2), for which thoracocentesis was done from both the sides (Right 360 mL and left 120 mL) which was straw in colour and pleural fluid analysis was suggestive of exudative fluid with lymphocytic predominance. TWBC count remained high with an HB of 9.6%. Antibiotic was switched over to Inj. Imipenem.

Patient got little relief on the same day, but slowly again his SOB increased and became grossly dyspnoeic on 7.5.12 with cardiorespiratory embarrassment with a clinical feature of massive effusion on right side. An urgent thoracocentesis was again done and to our surprise about 900 mL frank haemorrhagic fluid was aspirated from right side. TWBC count was still very high (25,800/ μ L) with a low HB of 5%.

Anticoagulant therapy was stopped, packed red cell transfusion was started, Inj. Tranexamic acid was given and antibiotic was switched over to Inj. Doripenem and Cubicin.

After about 2 hrs., the condition of the patient deteriorated (Syncope, pulse rate 150/min, RR 48/min, BP-not recordable and disoriented) for which he was shifted to ICU immediately and intubated. X-ray and ultrasound revealed an organized collection of size 10.6 cm - 8.9 cm in the lower part of right pleural cavity adjacent to diaphragm along with free fluid (Fig. 3). Intercostal Tube Drainage (ICTD) was given which drained about 1.5 litres of blood and urgent cardiothoracic consultation was sought for. Continuous fresh blood transfusion, packed red cell and other measures for circulatory failure were taken care of. Ultimately, explorative thoracotomy was done under GA and a huge clot (1.5-2 litres) was removed from right pleural cavity. No definite site of bleeding could be visualized.

Then the lung expanded well. There was no further drainage through ICTD. Patient started improving. He was extubated on 9.5.12. X-ray chest on 14.5.12 (Fig. 4) showed almost clear lung field on both sides and patient was asymptomatic. ICTD was removed on 14.5.12. He was discharged from hospital on 18.5.12.



Fig. 1: X-ray Chest PA View on 29.4.2012 on Admission



Fig. 2: X-ray Chest PA View on 4.5.2012



Fig. 3: X-ray Chest PA View on 7.5.2012



Fig. 4: X-ray Chest PA View on 14.5.2012

DISCUSSION

We dealt with a known case of diabetes mellitus and hypertension, who was admitted to hospital for community acquired pneumonia and recent CAD. Along with aggressive antibiotics patient was administered with anti-coagulant and antiplatelet therapy. He subsequently developed bilateral pleural effusion.

Usually, Low Molecular Weight Heparin (LMWH) is associated with less major bleeding than Unfractionated Heparin (UFH) and other group of anticoagulant.^[1] Thoracentesis being a very minor procedure, the fact about the anti-LMWH coagulant therapy is completely forgotten and it is being carried out with good intention without stopping it. But unfortunately such a small procedure lead to profuse bleeding in the pleural cavity (Iatrogenic Haemothorax) amounting to life-threatening cardiorespiratory embarrassment, which required an urgent thoracotomy and evacuation of clot to save the life of the patient with a prolonged ICU management. In the process the patient had to take 5 units of packed red cells and 3 units of fresh blood transfusion.

During anticoagulant therapy even without any intervention spontaneous haemothorax is reported.^[2] One of the relative contraindication to pleural fluid aspiration is anticoagulant therapy. It is reported by Nitin and Douglas.^[3] that during cardiac catheterization using percutaneous intervention using transfemoral route one of the fatal complication is retroperitoneal haemorrhage and one of the risk factor is use of pre- and post-procedure heparin.

When the amount of bleeding calls for an urgent medical intervention like transfusion and surgery or causes a great amount of morbid or become fatal is classified as a major bleeding.^[4,5] In this case, we encountered major bleeding due to anti-coagulant therapy due to use of LMWH. The classical anti-coagulant therapy like UHF and coumarin have more undesirable side effects, but specific antidotes against these drugs are available by which bleeding can be controlled very easily. Yet there is no strong evidence to guide for the management of bleeding related to the newer anticoagulants. Though it includes specific agent like protamine sulphate, it is less effective. So the mainstay in the management of major bleeding includes blood products (Fresh frozen plasma, red packed cells, fresh whole blood transfusion, etc.), protamine sulphate, tranexamic acid, etc. along with supportive management and in worst case surgical intervention.

CONCLUSION

This is an interesting case of life-threatening Iatrogenic Haemothorax, which occurred due to a simple procedure like thoracentesis in a patient who was under anti-coagulant therapy which was ignored and not stopped before the procedure. As a result, the patient had to undergo an urgent surgical intervention like thoracotomy and prolonged ICU management to save the life. This is a great experience in our learning curve and message for all to stop anticoagulant therapy much ahead before planning for any minor procedure.

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