ORIGINAL RESEARCH PAPER

Volume-8 | Issue-6 | June-2019 | PRINT ISSN No. 2277 - 8179

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

MYELOMATOUS PLEURAL EFFUSION – A CASE REPORT AND REVIEW OF LITERATURE

Pulmonary Medicine

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ABSTRACT

Multiple myeloma presenting with pleural effusion as the initial manifestation is uncommon. Usually the effusion is due to non-malignant causes. Myelomatous pleural effusion is an extremely rare entity. Here, we report the case of a 70 year old man who presented with right sided pleural effusion. The diagnosis was made cytologically by abnormal plasma cells in pleural fluid and high levels of monoclonal band in both serum and pleural fluid. The patient received one cycle of treatment despite of which, he had a downhill course. We review the clinical details of this case and related literature.

KEYWORDS

Multiple myeloma, Pleural effusion, Myelomatous effusion.

INTRODUCTION

Multiple myeloma represents malignant proliferation of plasma cells derived from a single clone. Multiple myeloma usually present as bone pain, recurrent infections, fatigue, or renal failure. Pleural effusion as the initial manifestation of multiple myeloma is rarely reported in literature.

CASE REPORT

A 70 year old male presented to us with breathlessness and right sided pleuritic chest pain and loss of appetite for one month duration. No history of fever, cough, hemoptysis. On admission he was afebrile with stable vitals. Examination revealed stony dullness with reduced breath sounds in right hemithorax. His blood routine showed hemoglobin 9gm/dl, total count -9800, platelet -2.7 lakhs and ESR – 110 mm/hr. blood urea-44, creatinine-1mg/dl, Sodium -138 meq/L, Potassium -4.1meq/L. His total protein was 7.5 gm/dl and Albumin 2.5 gm/dl. His sputum AFB, sputum culture, and blood cultures were negative.

CXR showed right sided pleural effusion (Fig1). CT thorax showed massive right pleural effusion with right lung collapse and a pleural based soft tissue lesion involving postero-medial aspect of right lower hemithorax. There was invasion of chest wall with erosion of adjacent ribs (Fig 2).

Pleural fluid aspirate was haemorrhagic with TC -1300 and lymphocytic predominant. Pleural fluid protein was 6.4mg/dl, sugar -89mg/dl, AFB smear was negative and ADA was 60.4. Pleural fluid cultures were sterile. Cytological examination of pleural fluid showed 30% Plasma cells with pleomorphic features.

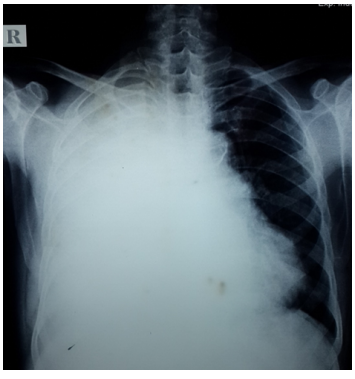

Fig1: CXR showing massive right sided pleural effusion.

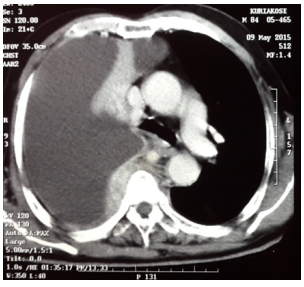

Fig2: CT Thorax showing right massive effusion with underlying lung collapse

Since the patient had anemia, raised ESR, AG reversal and pleural fluid showed plasma cells, we proceeded with urine BJP and serum electrophoresis. Urine BJP was negative. Serum calcium was 8.6mg/dl. Serum electrophoresis showed abnormal monoclonal band in the gamma region. Bronchoscopy and bronchoalveolar lavage was done. BAL cultures and AFB stain were negative. USG guided transthoracic needle aspiration from the pleural based soft tissue lesion was done and the result was consistent of plasma cell neoplasm. Pleural fluid electrophoresis revealed monoclonal spike in the gamma region. Bone marrow aspiration showed 18% plasma cells consistent with multiple myeloma.

Hence a final diagnosis of multiple myeloma with Myelomatous pleural effusion was made. Since the patient did not prefer tube thoracostomy and pleurodesis, we performed therapeutic pleural aspiration and the patient was referred to hematology. He received one course of dexamethasone and thalidomide, despite of which his condition deteorated and he died in the third month due to disease progression.

DISCUSSION

The usual presentations of multiple myeloma include bone pain, recurrent infections, renal failure, fatigue etc[1]. Pleural effusion in multiple myeloma is uncommon and occurs in 5-6% cases only[2]. Usually it occurs secondary to cardiac failure, amyloidosis, renal failure, infections, and pulmonary embolism. Multiple myeloma presenting with pleural effusion as its initial manifestation is rarely reported[3]. The proposed mechanisms of Myelomatous effusion are direct infiltration of pleura by myeloma cells, invasion from adjacent skeletal lesions or by hematogenous spread[4]. The diagnosis can be made by cytological demonstration of malignant plasma cells in

pleural fluid, pleural fluid electrophoresis for identifying monoclonal band and transthoracic aspiration of pleural based mass[5,6]. In our case, all the results were positive and supported by routine blood results and bone marrow study.

The clinical implication of our case is that, hematopoetic disorders must also be a differential diagnosis in patients with massive effusion. A high value of pleural fluid ADA should not lead us to the final diagnosis of tuberculous effusion in all cases. Pleural effusion in multiple myeloma occurs in the terminal stage and carry a poor prognosis and survival[7].

To the best of our knowledge multiple myeloma presenting as pleural effusion, with pleural fluid cytological evaluation, pleural fluid electrophoresis and TTNA from pleural based lesion all consistent with Myelomatous pleural effusion has been rarely reported in literature so far.

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