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Papillary Mesothelioma of Pleura: Case Report

Sandip Patel[1], Ashwin Rajbhoj[1], Kulbhushan Marathe[1], Tanmai Yermal[1], Amit Thopte[1], M.A Ghanekar[2]
[1]Post graduate Resident, Department of Medicine, PDVVPF's Medical College and Dr. Vikhe Patil Hospital, Ahmednagar
[2]Professor and Head, Department of Medicine, PDVVPF's Medical College and Dr. Vikhe Patil Hospital, Ahmednagar

***Corresponding Author:**
Name: Dr. Sandip Patel
Email: sandip.patel1720@gmail.com

Abstract: Papillary mesothelioma of pleura is a rarely observed well-differentiated subtype of epithelial mesothelioma which is a less aggressive, slow growing cancer that does not typically metastasize (spread) to other parts of the body. We report a 55 year old male, farmer by occupation, presented with complaints of breathlessness, cough with expectoration, left-sided chest pain and generalized weakness for 3 months with no history of asbestos exposure nor any lung disease in family. On systemic examination there was restricted chest wall movement on left side with left side bulging of chest, there was decreased breath sounds and presence of stony dullness. Chest X-ray and CT chest revealed left-sided massive pleural effusion. Thoracoscopy guided pleural biopsy was taken which confirmed the diagnosis of papillary mesothelioma.Papillary mesothelioma is well described in the literature, with most reported cases arising from the peritoneum in women of reproductive age. Although less common, doctors have found papillary mesothelioma growth on several of the body's protective membranes, including the linings of the lungs (pleura), heart (pericardium) and testicles (tunica vaginalis). Unlike malignant mesotheliomas, which are typically associated with asbestos exposure, there is no conclusive evidence linking papillary mesothelioma to asbestos exposure. We conclude that papillary mesothelioma is a rare and unusual mesothelial tumor, characterized by a no evident linkage with asbestos exposure, lack of deep invasion and associated with an indolent clinical course, better prognosis with absence of metastasis and long survival.
Keywords: Malignant pleural mesothelioma (MPM), Pleura, Thoracoscopy, Pleural biopsy

INTRODUCTION

Malignant pleural mesothelioma (MPM) is the most common neoplasm of pleura which is a cancerous proliferation of mesothelial cells involving a large extent of pleural cavity [1, 2]. Papillary mesothelioma of pleura is a rarely observed well-differentiated subtype of epithelial mesothelioma which is a less aggressive, slow growing cancer that does not typically metastasize (spread) to other parts of the body [4]. Most common etiological factor is asbestos exposure [3]. Other risk factors include nanomaterials, viral oncogens, radiation therapy, genetic factors etc. [5, 7]. Rarely unusual presentations have also been reported. We report here one such unusual case.

CASE REPORT

A 55 year old male, farmer by occupation, presented with complaints of breathlessness, cough with expectoration, left-sided chest pain and generalized weakness for 3 months. His breathlessness was initially associated with vigorous activity, but within few months, it occurred with mild exertion. There was no history of fever, hemoptysis and leg edema. He gave history of tobacco chewing since 30 years. There no history of alcohol intake. There was no past history of diabetes, hypertension and tuberculosis. He denied of engaging in any activity that might have put him at risk for asbestos exposure. He had no history of any lung diseases in family.

On Examination patient was well built, pale, no clubbing, no cyanosis. His systolic blood pressure was 128 mm of Hg and diastolic blood pressure, 82 mm of Hg; pulse rate, 92/min and regular; and respirations, 20/min. On systemic examination there wasrestricted chest wall movement on left side with left side bulging of chest,there was decreased breath sounds and presence of stony dullness.

Blood investigations showed severe anemia and leukocytosis and other biochemistry investigations were within normal limits. Spirometry revealed restrictive pattern. Chest X-ray revealed left-sided massive pleural effusion (Fig. 1). USG chest s/o massive, loculated and hemorrhagic left pleural collection. Diagnostic Pleural aspiration revealed hemorrhagic fluid which was exudative. Fluid examination did not show AFB and any malignant or abnormal cells. Hence, CT scan of thorax showed severe left loculated effusion with mild pleural

thickening and underlying collapse right lung (Fig. 2-5). Therefore a possibility of lung malignancy needs considered. Empirically, we started with antibiotics. And a thoracoscopy was done and guided pleural biopsy was taken which showed the presence of atypical mesothlial cells and stroma with altered N/C ratio and hyperchromatic nucleus and also cells which were arranged in papillary pattern with a fibrovascular core confirming the diagnosis of papillary mesothelioma (Fig. 7). During the procedure 1500ml of hemorrhagic pleural fluid removed and intercostal drainage was put (Fig. 6). Patient was referred to higher center for further treatment.

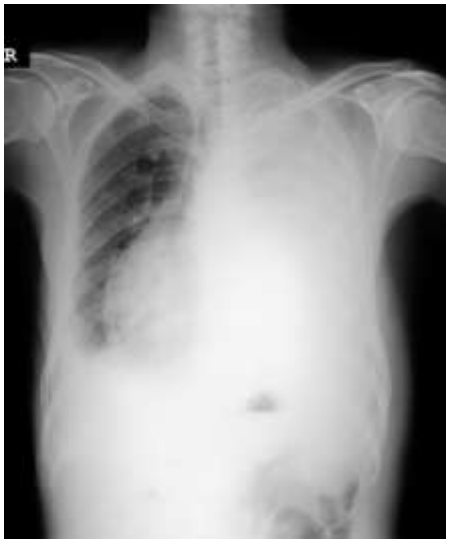

Fig. 1: Chest X-ray PA view showing hemithorax with shift of mediastinum on right side s/o Massive left pleural effusion.

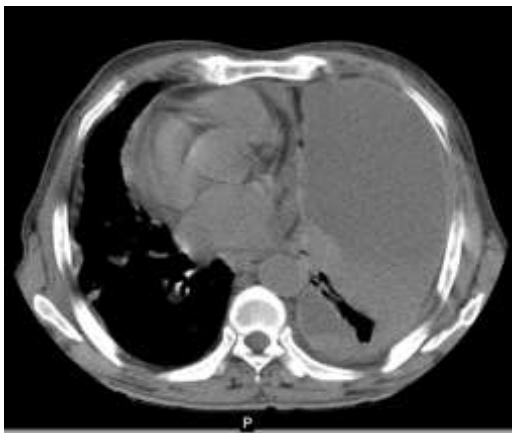

Fig. 2: Axial CT showing complete opacification of right left pleural effusion with collapsed left lung. Mediastenum shifted to right side with mild pleural thickening seen.

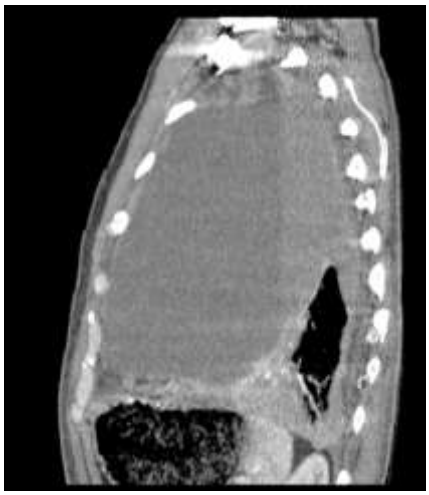

Fig. 3: Plain CT Lateral view showing left pleural effusion with collapsed left lung.

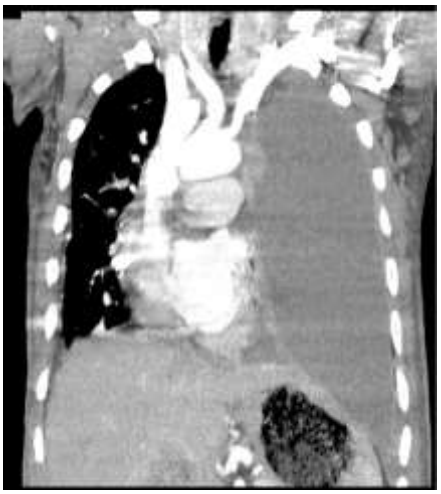

Fig. 4: Plain coronal CT showing left loculated pleural effusion with collapsed left lung with Mediastinum shift towards right.

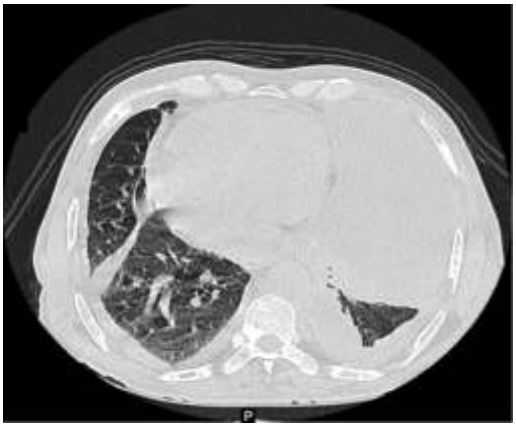

Fig. 5: HRCT showing severe left loculated pleural effusion with mild pleural thickening and underlying collapse right lung.

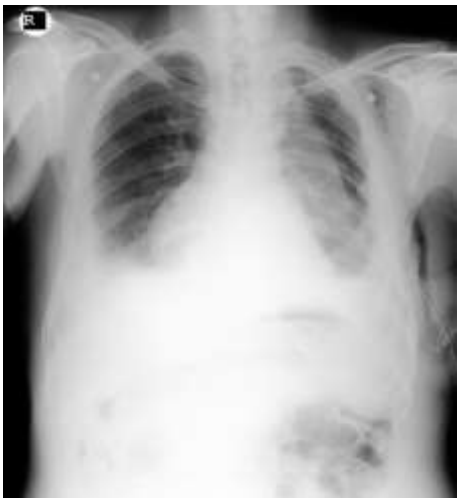

Fig. 6: Chest X-ray PA view: Post Intercostal drainage insertion

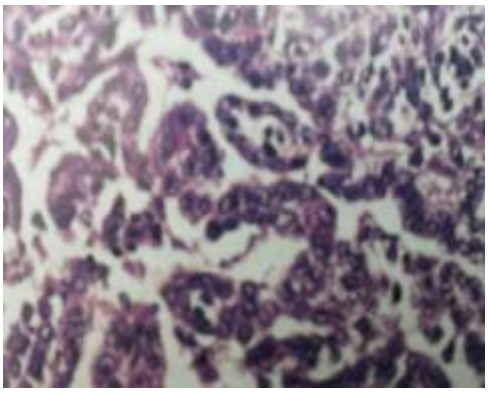

Fig. 7: Papillary mesothelioma (H&E; 100x view)

DISCUSSION

The incidence of MPM is higher in men than in women. It is likely due to increased occupational asbestos exposure among men [6].

Patients with MPM usually present with pleural effusions. Radiographic investigations reveal pleural effusion (exudative/hemorrhagic), pleural nodular shadows (diffuse or localized), or involvement of lungs, ribs, spine, etc. [8].

MPM patients are typically present with shortness of breath due to pleural effusion or chest pain in a more advanced stage [9].

Diagnosis of MPM is usually suggested by imaging studies (unilateral pleural thickening; pleural effusion). Cytological examinations can also be used for diagnosis. Pleuroscopy may provide accrate histological diagnosis [9].

Papillary mesothelioma can sometimes be found with an imaging test like CT scan, but it is not enough sensitive to detect tumors smaller than 1 centimeter in size. The definitive procedure for diagnosing papillary mesothelioma and other mesotheliomas is biopsy [4].

Treatment for papillary mesothelioma is not standardized. Therapy usually involves some combination of the main types of mesothelioma treatment: Surgery, chemotherapy and radiotherapy. Surgery is typically recognized as the preferred treatment [9, 10].

CONCLUSION

We conclude that papillary mesothelioma is a rare and unusual mesothelial tumor, characterized by a no evident linkage with asbestos exposure, lack of deep invasion and associated with an indolent clinical course, better prognosis with absence of metastasis and long survival. Therefore an inaccurate diagnosis can put patients on aggressive treatment which may not even improve the outcome and therefore it is necessary to biopsy the tissue samples for diagnosis.

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