Pulmonary Hyalinizing Granuloma Presenting with Dysphagia

GC Khilnani,* A Kumar,** S Datta Gupta,*** A Surendranath*, S Sharma****

Abstract
We describe a middle aged, non-smoking female who presented with dysphagia and underwent repeated endoscopies and oesophageal dilatation for a period of six months without any response. On imaging she was found to be having a lobulated mass with a radiological differential diagnosis of malignancy, lymphoma or a rare inflammatory lesion. After an inconclusive CT guided biopsy the patient underwent thoracoscopy on which an unresectable mass was found. The biopsy from the mass revealed pulmonary hyalinizing granuloma (PHG). To best of our knowledge this is the first case of PHG presenting as dysphagia reported in the English Literature. Literature on this rare entity is reviewed.

INTRODUCTION
Patients complaining of dysphagia usually present to gastroenterologist for management. In the absence of pathology of oesophagus, a mediastinal or pulmonary pathology causing extrinsic compression of oesophagus should be considered. Pulmonary hyalinizing granuloma (PHG), a term which is described as a rare histopathologic entity of unknown etiology, presents as pulmonary nodules with minimal symptoms.1 The disease may present without any symptoms and may be detected on routine chest radiograph or may have symptoms such as cough, haemoptysis, chest pain, shortness of breath. Predominant features are multiple pulmonary nodules consisting of extracellular, eosinophilic hyaline lamellae. An immune response to the antigenic stimuli by infection or autoimmune process has been postulated in the pathogenesis but the precise etiology yet remains obscure.2 This case is being presented for its unique presentation, rarity and highlights the importance of invasive techniques for achieving diagnosis.

CASE HISTORY
A forty year old, married female, a non-smoker, presented to us with a history of difficulty in swallowing for solids of past three years. She also gave a history of low grade undocumented fever with evening rise for the same duration. She had lost 8 kgs of body weight during this period. There was no history of cough, haemoptysis, dyspnoea, fatigue, loss of appetite, or arthralgia. She did not give history of heartburn, sour eructation’s, water brash, haematemesis, malena, abdominal pain or diarrhoea. In the past there was history of having received antituberculosis treatment of genital tuberculosis 15 years back. She also underwent hysterectomy with bilateral salpingo-oophorectomy for uterine fibroid and left ovarian cyst one year prior to presenting to us. Physical examination revealed a middle-aged female of thin built who was not dyspnoeic at rest. She was afebrile, with a pulse rate of 84/min, respiratory rate of 18/min and blood pressure of 120/76 mm Hg. There was no pulsus paradoxus. There was no anaemia, icterus, cyanosis, clubbing, oedema feet and jugular venous pressure was not raised. Examination of respiratory system was unremarkable. She had undergone serial endoscopic oesophageal dilatations before and after presenting to this hospital.

INVESTIGATION
On investigation Hb was 11.2 gm/dl. TLC was 4500/cu mm and DLC was N66, L36, E3, M1, ESR was 35 mm/1st hr (Wintrobe). Fasting blood sugar was 85 mg/dl. Liver functions and renal functions were within normal limits. The chest radiograph revealed homogenous opacities in right lower zone and right hilum, and cardiac size was within normal limits. Pulmonary functions revealed vital capacity of 63.46% predicted and FEV1/FVC of 93%. Sputum for AFB and cytology done three times each were negative. Mantoux test was also negative. An echocardiogram was within normal limits. On barium swallow (Fig. 1) thoracic esophagus below the level of carina showed smooth, long segment of concentric narrowing and persistent non-distensibility. Proximal esophagus showed hold-up of barium and dilatation. Esophageal mucosal folds were normal. The distal esophagus
and gastroesophageal junction were unremarkable. The rheumatoid factor, antinuclear antibody and antinuclear cytoplasmic antibody (cANCA) were negative. Serum C3 was 0.83 g/L (0.07 - 0.12 g/L) Serum IgG was 1.482 g/L (0.9 - 1.96 g/L), IgA 0.30 g/L (0.12 - 0.38/L) and IgM was 0.13 g/L (0.09 - 0.24 g/L). Upper gastrointestinal endoscopy revealed stricture at 30 cm and oesophagus was dilated to 12.8 mm. The scope could not be negotiated into stomach and oesophageal biopsy revealed pseudoepitheliomatous hyperplasia and chronic inflammation. A computed tomogram (CT) (Fig. 2) of chest revealed a lobulated soft density mass of 8 X 7 X 5 cm in size predominantly involving the apical segment of right lower lobe and extending laterally. The mass showed small calcific foci within it and homogenous enhancement following contrast administration with no areas of necrosis. It also showed encasement of bronchus intermedius and the proximal basal segmental bronchi. It was also seen to extend into the mediastinum causing oesophageal involvement in the form of marked mural thickening causing luminal compromise (Fig. 2). CT guided FNAC from the lung mass revealed only blood. On bronchoscopy there was no endobronchial growth and bronchial biopsy showed fibrocollagenous tissue with some inflammatory cells. Bronchial aspirate did not show malignant cells and stain for acid fast bacilli was negative. Patient was taken up for thoracoscopic lung biopsy. At surgery there were extensive adhesions between the parietal and visceral pleura. After mobilization of adhesions, an intraparenchymal nodule was felt in the right lower lobe, which was wedged out. Rest of the lung was normal. A biopsy was taken

On histopathology, multiple sections from the lung showed areas of hyalinization. These areas were composed of thick collagenous bands which were arranged concentrically around blood vessels in many areas. Numerous lymphocytes, histiocytes and plasma cells were found either admixed in collagenous bands or focally as aggregates. These features are diagnostic of pulmonary hyalinizing granuloma (Fig. 3). Post-operative period was uneventful. On follow-up over the three years patient is keeping in good health and has minimal difficulty in swallowing. Repeat CT scans have not shown increase in the size of lung mass.

**DISCUSSION**

Pulmonary hyalinizing granuloma is a rare pathology and presents most commonly as slowly enlarging nodules in lung parenchyma. It has been reported in the literature as a form of localized amyloidosis, a granulomatous reaction, secondary to pulmonary histoplasmosis, an isolated pulmonary hypersensitivity reaction, a plasma cell granuloma and sarcoidosis. This nodule is usually bilateral, and may occasionally cavitate or calcify. However, PHG has also presented as sclerosing mediastinitis. The differential diagnosis chiefly includes neoplasms, rheumatoid nodules, macronodular variant of sarcoidosis, Wegener granulomatosis, plasma cell granulomas,
lymphomatoid granulomatosis, histoplasmosis and other fungal infections. The cause of PHG is unknown but immune mechanism is suggested, as there are many immune-mediated diseases, which are associated. These include rheumatoid arthritis, sclerosing mediastinitis, retroperitoneal fibrosis, uveitis, and ocular papillitis. It is postulated that the disease is the result of immune mechanism triggered by tubercular bacilli, histoplasma organisms or other infectious agents. It is also suggested that pulmonary lesions of differing etiologies may terminate as hyalinizing granulomas. Engleman and associates postulated that PHG represents a chronic immune response to unidentified agents.

PHG is usually found in young and middle-aged adults who may be asymptomatic or present with mild symptoms like cough, fatigue, vague thoracic pain, fever, dyspnoea or hemoptysis. Our patient underwent several esophageal dilatations before getting x-ray chest done. Also, she had significant constitutional symptoms. There are no reports of PHG presenting with dysphagia.

The chest radiograph usually reveals multiple, solid, well circumscribed pulmonary nodules, which show ill-defined borders with or without calcification or necrosis within them. Our patient had a lung mass, which had calcification within it. Usually they do not grow or grow slowly. A doubling time of one year was reported in one case. These nodules histologically are composed of randomly arranged bundles of collagen surrounded by chronic inflammatory cells. The disease follows a relatively benign course with the nodules slowly increasing in size over a period of years. However, there are two reported cases of PHG complicated by lymphoma, therefore, a follow up is required. Because of absence of markers a biopsy is required to establish the primary diagnosis of PHG.

The present case is reported with the intention of highlighting the association of PHG with dysphagia, and mass stimulating malignancy. Hence in any case of dysphagia with absence of mucosal lesion, investigations should be directed to look for pulmonary or mediastinal pathology. This patient received several oesophageal dilatations before the diagnosis of a mass in the lung was made. We would agree that this entity was not considered in our differential diagnosis, which could only be achieved by a lung biopsy. The importance of computed tomogram in the diagnosis of PHG cannot be over-emphasized. A high index of suspicion with use of lung biopsy would achieve diagnosis in such cases. Because of rarity the natural history of this rare disease is not known. Although the usual course is benign a close follow up of these cases is warranted.

REFERENCES