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Pulmonary puzzle

ANSWER

From question on page 309

The major abnormalities shown in the CT and bronchoscopic images are nodularity and plaques on the anterolateral walls of the trachea and main bronchi. This is caused by tracheobronchopathia osteochondroplastica (TO). First described by Samuel Wilks in 1857,[1] it is a rare benign condition of unknown aetiology observed in about 0.1% of bronchoscopies.[2] A diagnosis of TO is suggested from characteristic sessile submucosal cartilaginous or bony nodules enlarging and protruding into the lumina of the anterior and lateral walls of the lower trachea and upper main bronchi.[3] The posterior membranous portion is usually spared. Other causes of tracheobronchial irregularity include malignancy, amyloidosis, endobronchial sarcoidosis, Wegener granulomatosis and calcifying lesions of tuberculosis. Therefore, if endobronchial biopsy is possible, abnormally distributed mineralisation usually confirms the diagnosis. Most patients are asymptomatic or have a mild cough or haemoptysis requiring occasional courses of antibiotics or inhalers.[3] Indeed, this patient had evidence on the CT scan (not shown) of a 'tree-in-bud' pattern of shadowing in the left lower lobe suggestive of an infective process, which can in itself cause haemoptysis. Large protrusions may cause retention pneumonias or severe dyspnoea from luminal obstruction. Therapeutic options include stenting, debulking with cryotherapy, surgical resection or laser photovaporisation.[2]

In normal subjects the bronchial basement membrane autofluoresces with a regular fine cross-hatching structure under probe-based confocal laser endomicroscopy (pCLE) imaging; this regular pattern is destroyed in neoplasia and is possibly also disrupted in benign conditions.[4] pCLE imaging of the nodular excrescences in this patient showed a mottled brightly autofluorescing submucosa but without any evidence of the cross-hatched healthy basement membrane. Some clinicians challenge the need to attempt tissue biopsy of certain benign lung conditions such as presumed TO; in the future, optical biopsy techniques such as pCLE may avoid this dilemma.

While this patient still has a dry cough, his haemoptysis was successfully treated with a course of oral ciprofloxacin and prednisolone. Together with his chronic obstructive pulmonary disease, his TO symptoms will be monitored and treated accordingly.

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