Aspergillus nodule: a less common manifestation of chronic pulmonary aspergillosis

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INTRODUCTION

CPA has a number of recognised manifestations, including subacute invasive pulmonary aspergillosis (SAIA) [also sometimes called chronic necrotising pulmonary aspergillosis (CNPA)], chronic cavitary pulmonary aspergillosis (CCPA) and chronic fibrosing pulmonary aspergillosis (CFPA).

Little is known about the form of CPA which presents as single or multiple nodule(s) without cavitation in immune competent hosts.

The purpose of this study is to review the presentation, radiology and histological features of pulmonary nodules caused by Aspergillus spp.

METHODS

Patients with nodular Aspergillus disease were identified from patients attending our specialist CPA clinic in the National Aspergillosis Centre (NAC). A nodule was defined as a rounded opacity, well or poorly defined, measuring up to 3 cm in diameter as per the Fleischner Society: Glossary of Terms for Thoracic Imaging.

Patients with cavitating lung lesions, with or without fibrosis and those with aspergillomas were excluded. Patients with a diagnosis of invasive aspergillosis were also excluded.

A. fumigatus IgG was measured using the ImmunoCap™ assay (Phadia, Uppsala, Sweden) and Aspergillus precipitins using the Microgen antigens and counterimmunoelectrophoresis (Microgen, Camberley, Surrey, UK).

RESULTS

Thirty three patients with pulmonary nodules and supportive features diagnostic of CPA (histology and/or laboratory findings) were identified.

Eighteen (54.5%) male

Mean age was 58 years (range 27-80 years).

Nineteen (57.6%) were current or former smokers

The median Charleston co-morbidity index was 3 (range 0-7).

All patients complained of at least one of the following symptoms on presentation: cough, dyspnoea, haemoptysis, or weight loss.

Twenty nine patients (88%) complained of cough, 23 (70%) of dyspnoea, 11 (33%) had weight loss, and 5 (15%) haemoptysis. No patients reported a history of fever.

Twenty patients (60%) had upper lobe disease alone, with the nodule(s) being present unilaterally or bilaterally.

Seven patients (6%), had all lobes involved

Twelve patients (36%) had a single nodule, six (18%) between 2 and 5 nodules, 2 (6%) between 6 and 10 nodules and 13 (39%) more than 10 nodules.

The maximum size of the nodules ranged between 5-50mm, mean 21mm. Only six patients (18%) had associated lymphadenopathy.

Eight patients (24%) had positron emission tomography imaging for review, in all cases the FDG uptake was low- moderate (SVUmax <5.4).

CONCLUSIONS

Pulmonary nodules are a less common manifestation of aspergillosis in immune competent patients.

Their natural history is not yet defined, although in this series many of the patients presented with cough alone.

These nodules may be difficult to distinguish from other lung pathology on CT findings alone and it would appear that PET imaging is not helpful.

A high proportion of patients with negative Aspergillus IgG, may mean that to exclude malignancy there remains a necessity to biopsy these lesions.

Chronic pulmonary aspergillosis, should be considered as a potential differential diagnosis in patients presenting with single or multiple pulmonary nodules.