Pulmonary Aspergilloma: A case report

Clinical History: A 32 year old female presented with history of cough with expectoration since 8 days. There was no history of fever. She was an old case of pulmonary tuberculosis, completed treatment 4 years back. Chest X ray showed opacities in both upper lobes. Patient was referred for high resolution CT scan of thorax.

Findings:

Thin walled cavities are noted in apico-posterior segment of left upper lobe (Fig 1, 4) and superior segment of right lower lobe (Fig 3).

Isoattenuating soft tissue masses are noted in these cavities, which appear mobile on prone images (Fig 2).

Crescent of air is seen around the soft tissue masses (Fig 4), Monod sign.

Diagnosis: Pulmonary aspergilloma.
Discussion:
Introduction
Presence of aspergilloma is the most common and recognized form of non-invasive aspergillous pulmonary involvement. The aspergilloma (fungus ball) consists of masses of fungal mycelia, inflammatory cells, fibrin, mucus and tissue debris, usually developing in a preformed lung cavity. Although other fungi may cause the formation of fungus ball (eg. zyomycetes and fusarium), aspergillous fumigatus are by far the most common etiologic agents.
Aspergilloma have been found in preexisting cavities formed secondary to tuberculosis, sarcoidosis, bronchiectasis, bronchial cysts and bullae, ankylosing spondylitis, neoplasm or pulmonary infarction. Of these tuberculosis is the most frequently associated condition.

Imaging findings:
The mycetoma can be seen on both plain films and CT as an intracavitary mass surrounded by a crescent of air. It is used by many to describe the air around an aspergilloma and the crescents of air that become visible in recovering angioinvasive aspergillosis. Some prefer the term Monod sign in the setting of aspergilloma, although it is less widely recognised.

Plain film
Aspergillomas typically appear as rounded or ovoid soft tissue attenuating masses located in a surrounding cavity and outlined by a crescent of air.

CT
Appearances are those of a well formed cavity with a central soft tissue attenuating rounded mass surrounded by an air crescent sign or a Monod sign. The mass is typically spherical or ovoid. On different positioning of the patient, the mass can be shown to be mobile. On occasion the mass may entirely fill the cavity, thus taking on the shape of the cavity, obliterating the surrounding air crescent and no longer being mobile.
Calcification is not uncommon, which can range from none to heavy. Due to the inflammation and vascular granulation tissue formation, the bronchial arteries supplying the wall can sometimes be seen as markedly enlarged.

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N.B: This case is authentic and from the archives of Radiance Diagnostics. For any queries/suggestions/feedback write to us at radiance@radiancediagnostics.in Case of the month can also be accessed anytime online at VIEW BOX at www.radiancediagnostics.in