RADIOLOGICAL QUIZ

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A 35-years-old soldier presented with chronic pulmonary pathology undergoing treatment. All routine investigations were within normal

limits except for raised erythrocyte sedimentation rate. Plain radiograph of the chest (Fig 1) and CT chest (Fig 2) were performed.

Fig. 1 : PA view chest shows the lesion in right upper zone

Fig. 2 : HRCT chest through right upper lobe in supine position

Answer to Quiz on Pg. 172

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Answer to the Quiz

A mycetoma (fungus ball) is a matted collection of fungal hyphae, cellular debris, fibrin and mucous. The fungus may be an aspergillus, candida, nocardia, phycomyces or trichophyton. However majority of mycetomas are caused by aspergillus, to the extent the term aspergilloma is often used synonymously. Aspergilloma is a common complication in patients with cavitory tuberculosis [1] as seen in this case or in patients having pulmonary involvement in ankylosing spondylitis [2]. It is occasionally seen to complicate acute necrotising bacterial infection, lung infarction, necrotic neoplasm or bronchiectatic cavity [3]. CT is far more efficacious than the chest radiograph in detecting intracavitary aspergilloma. A mature fungal ball is easily identified as a well circumscribed intracavitary mass or opacity, associated with air crescent sign (Fig 2). Typically the position of the intracavitary opacity (and therefore the air crescent) changes when the patient is scanned in supine and then prone position (Fig 2 and 3) as it lies free in the cavity.

The precise frequency of pulmonary involvement in ankylosing spondylitis is not known and a range of 0% to 30% has been reported [2]. In the largest single series frequency of 1% [4] has been reported. The process begins as apical infiltrate which may progress to cyst formation. Generally the disease begins unilaterally and becomes bilateral. The chest radiograph may mimic tuberculosis. Patients are usually asymptomatic but the cavities become secondarily infected, most commonly by species of *Aspergillus fumigatus* or *niger* [5].

As described by Roberts et al [1] immature or developing aspergillomas can have different appearance. In distinction to well formed ball, immature mycetoma are identifiable as an irregular sponge work of soft tissue containing multiple small air spaces obliterating the cavity. Presumably this appearance reflects the presence of irregular fronds of fungal mycelia mixed with some residual intracavitary air. Furthermore thickening of the wall of tuberculous cavity can be a

Fig. 3 : HRCT chest through the right upper lobe in prone position showing a tuberculous cavity with a nodular mass (aspergilloma). The mass moves within the cavity with change in patient's position (Compare its position in supine HRCT in Fig. 2) and also note the change in position of air crescent.

finding of superimposed fungal infection prior to the development of a fungal ball.

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