

# Differentiating pleural tumors

Dear Sir,

We read with great interest the article entitled "Radiological review of pleural tumors" by Sureka *et al.*<sup>[1]</sup> published in the October-December 2013 issue of the IJRI. We wish to supplement few points regarding differentiation of the pleural tumors.

In continuity of the points mentioned by Sureka *et al.*<sup>[1]</sup> for diagnosing and characterizing the solitary fibrous tumor of pleura (SFTP), it is further elaborated that direct visualization of the thin pedicle or stalk on imaging is virtually pathognomonic of SFTP.<sup>[2]</sup> But the problem is that in spite of the best efforts, it is seldom achieved in practice. Therefore, we have to rely on an indirect (but highly suggestive) sign, viz. "dependent movement/change in intrathoracic position of the mass with change in patient positioning," indicating that the mass is attached by a stalk/pedicle.<sup>[2]</sup> To assess this sign practically, supine computed tomography (CT) is usually followed by prone CT and any change in positioning of the mass is noted. This change in position of the mass can also be noted during fluoroscopy. It is important to note that this sign should not be confused with the other sign, viz. "change in shape of the mass with respiration/change in patient positioning," which suggests the diagnosis of subpleural lipomas owing to their pliable nature.<sup>[2]</sup>

Another important differential that needs consideration is round atelectasis. This condition is most commonly seen with asbestos-related pleural disease; although it can occur with any condition causing exudative pleural effusion. It develops during the resolving phase of pleural effusion due to formation of pleural adhesions; the re-expanding adjacent part of lung rolls up into a ball. It is most commonly seen as a round opacity along the inferior and posterior costal pleural surfaces adjacent to an area of pleural thickening/plaque. Plain radiograph apparently shows a pleural-based mass; but CT appearance is diagnostic, and therefore, no further workup is usually required. The lesion is better appreciated in prone CT, which shows a peripheral rounded/wedge-shaped/triangular mass forming acute angle with the pleura. Vessels and bronchi are seen curving between the hilum and the apex of the mass, giving the characteristic "comet tail" appearance. Contrast-enhanced CT may show the enhancing atelectatic lung.<sup>[3]</sup>

Frequently, pleural aberrations and effusions (mimicking pleural tumors on imaging) can also be due to tuberculosis or fungal infections; therefore, it is essential to consider these diseases also in the differential diagnosis of pleural tumors.<sup>[4]</sup> Tuberculosis, being highly prevalent in India, is of particular importance. In areas where tuberculosis is highly prevalent, pleural fluid adenosine deaminase (ADA) level of >40 U/L suggests >90% sensitivity and ~85% specificity for the diagnosis of tuberculosis.

This specificity of ADA for tuberculosis further increases to >95% in lymphocyte-predominant pleural effusion.<sup>[5]</sup> It is said that a lymphocytic pleural fluid with high ADA activity should be considered tubercular until proved otherwise. However, it should be noted that if the tubercular patient is simultaneously infected with human immunodeficiency virus, pleural fluid ADA levels may be normal.

At times, pleural fluid aspiration and gross appearance of the pleural fluid may substantially narrow the radiological differential diagnosis of pleural tumors [e.g. grossly bloody fluid suggests malignancy or asbestos-related effusion (mesothelioma)].<sup>[4]</sup>

Therefore, it should be kept in mind that gross appearance of the pleural fluid and/or few biochemical markers (in pleural fluid) may sometimes point to a direct diagnosis or can suggest the next step in patient evaluation.

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