

Sp5 -Should a chest x-ray be performed and efforts for ruling out other focus primary tuberculosis done in all patients diagnosed with spinal tuberculosis?

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Response/Recommendation: Based on available data, it appears that there is a substantial percentage of patients with spinal tuberculosis who have concomitant pulmonary involvement and hence, chest radiography should be performed in all patients diagnosed with spinal tuberculosis. However, this may not reflect the level of contagiousness in these patients in the absence of sputum smear or culture positivity.

Level of Evidence: Low

Delegate Vote:

Rationale: Spinal tuberculosis (STB) accounts for more than 50% of skeletal tuberculosis cases and is commonly encountered by healthcare practitioners, particularly in countries where tuberculosis is endemic. In the absence of standardized guidelines detailing the diagnostic work-up in patients confirmed or suspected to have spinal tuberculosis, institutional protocols usually dictate the approach for most clinicians. The question of whether patients with STB should undergo chest radiographs or other tests directed at detection of a primary focus of disease elsewhere has two important implications: (i) While extra-pulmonary tuberculosis (EPTB) is generally considered to be non-infectious, the presence of concomitant pulmonary disease can still render these patients infectious – this may in turn require such patients to be kept in isolation to prevent nosocomial transmission of the disease to other patients or healthcare workers, and (ii) concomitant involvement of other systems or organs may portend increased morbidity when compared to patients with only STB – identification of such patients may require involvement of multidisciplinary teams to improve outcomes.

While reviewing the current evidence, we noted that there is a lack of studies that have directly addressed this question. Chest radiographs have been included as a part of diagnostic work-up in several epidemiological studies, and the rates of concomitant pulmonary tuberculosis in these studies varies as widely as 4%-66%. In a cohort of 50 consecutive Korean patients proven to have spinal tuberculosis, 21/50 (42%) patients had concomitant active pulmonary tuberculosis – furthermore, the authors noted that the presence of a concomitant active tubercular chest lesion correlated positively with the location of the spinal lesion in the cervical or thoracic spine.(1) In a study which included 694 patients with STB published from Turkey, 35 patients had multi-focal tuberculosis – sixteen of whom had pulmonary affliction.(2) The percentage of patients with STB and concomitant pulmonary involvement in another study conducted in China was 25.7%.(3) In one of the largest case series of patients with spinal tuberculosis from a single center, Garg et al. reported concomitant active pulmonary tuberculosis in 69/1,652 patients (4.1%) – chest radiography was used to look for simultaneous involvement of pulmonary tuberculosis in this study as well.(4) In a single-center study conducted in Malaysia, as many as 67% of patients with STB had concomitant pulmonary TB.(5)

While a number of case series and case reports have mentioned concomitant pulmonary and extrapulmonary involvement, we find that critical information required to draw definite conclusions is missing in literature – this includes the nature of radiographic findings on chest

radiographs, whether the disease was active or inactive (healed) and whether the patients were subjected to additional microbiological tests like sputum culture or PCR to confirm active disease or more specifically, infectivity. Parimon et al. observed that there was no significant difference in the occurrence of positive sputum-culture results in patients with or without abnormal chest radiograph findings – which would defeat the primary objective of including a chest radiograph in the diagnostic work-up of a patient with spinal tuberculosis.(6)

In other studies, computed tomography (CT) scans have been shown to be both more sensitive and more specific in diagnosing cases of pulmonary tuberculosis – it can also show pleural disease which is not readily visible on chest radiographs.(7) However, the affordability and accessibility of chest radiography greatly favors its use when aiming to unravel a concomitant pulmonary involvement. While involvement of other foci such as lymph nodes, pleura or ribs have been mentioned in various studies, there is no recommendation of conducting specific tests to look for the same in patients with known STB.

References:

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