Title: Diagnostic role of fiberoptic bronchoscopy in suspected smear negative pulmonary tuberculosis

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Body: Background: Sputum smear-negative pulmonary tuberculosis is a common problem faced by clinicians. Bronchoscopy-related transmission of Mycobacterium tuberculosis is rarely reported. Methods: The retrospectively study evaluated 40 patients(26males, 14females; mean age 45±19.6years; range:19-88years) who had respiratory symptoms and radiographic findings consistent with pulmonary TB, but who were unable to produce sputum spontaneously or had three samples of spontaneously produced sputum that was smear-negative for AFB. Induced sputum tests, bronchial washings and bronchoalveolar lavage were performed where indicated. The relevant specimens were sent for direct smear for acid fast bacilli by Ziel-Neelsen method and culture for M. tuberculosis in Lowenstein medium. Data obtained were analyzed using MS Excel 2007. Results: Bronchoscopy confirmed or contributed to the diagnosis in 18 patients. In 8 patients(45.5%) upper lobe mucosal inflammation with/without narrowing and scarring was detected. Sputum culture confirmed the diagnosis in 12(30%) cases: 7(17.5%) had culture positive specimens(p<0.005), 4(10%) was culture positive on bronchoscopy and one(2.5%) on induced sputum. All patients had negative HIV test, 31(77.5%) new cases and 35(87.5%) with high erythrocyte sedimentation rate. Majority of radiological findings were infiltrative ulcerated and cavitation lesions which affect one lobe lung. Conclusions: Flexible bronchoscopy is a widely accepted diagnostic modality for tuberculosis specifically in patients who cannot produce an adequate sputum sample despite hypertonic saline induction. Bronchial aspirates obtained during bronchoscopy considerably increase the diagnostic yield in tuberculosis.