

Changing Trend of Surgery in Pulmonary Tuberculosis

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Abstract

Pulmonary tuberculosis is one disease that has created, nurtured & modified thoracic surgery. With the invention of effective antitubercular drugs, role of surgery in pulmonary TB declined over decades, but with appearance of MDR/XDR TB – role of surgery is again becoming important.

Keywords: Thoracic surgery; Pulmonary tuberculosis; Drug resistant tuberculosis

Editorial

Pulmonary Tuberculosis (TB) is the disease that moulded Thoracic Surgery and Respiratory Medicine and now has a new lease of life with the HIV pandemic, poorly funded national TB programmes and globalization. Recently it has been aptly defined as the “the phoenix of Thoracic Surgery” [1-3].

Prior to invention of effective antitubercular drugs, therapies against TB were ineffective. Surgical treatment for TB began with various forms of collapse therapy like wax or Lucite ball plombage, pneumoperitoneum, induced pneumothorax, thoracoplasty and phrenic nerve crush or interruption [4]. Thoracoscopy for pulmonary tuberculosis was introduced by Jacobaeus [5].

With the new effective anti-TB drugs, the role of the Thoracic Surgeon gradually declined to the treatment of complications of TB: i.e. - destroyed lobes and lungs, tuberculous pleural empyema with or without broncho-pleural fistula, hemoptysis, bronchoconstriction etc. [6].

Preoperative evaluation includes routine laboratory tests, acid-fast bacilli sputum smears and cultures, an accurate assessment of TB lesions' localization & nutritional assessment. Fiber-optic bronchoscopy is necessary to evaluate endo-bronchial tuberculosis, bronchial stenosis, contralateral disease, and coexisting eventual malignant disease. Pulmonary-function test & Echocardiography is needed to assess pulmonary reserve & to rule out pulmonary hypertension and congestive heart failure [7-9].

Currently, the surgical indications in pulmonary TB are: TB complications (e.g., haemoptysis, empyema, cavity formation associated with aspergilloma, bronchopleural fistula, bronchial stenosis, trapped lung); cases displaying an inappropriate healing response to medication, in which clinical and radiological pictures remain unchanged or indicate progression (e.g., cavity, tuberculoma); acid-fast bacilli sputum smears positivity after 3-month treatment period, with a circumscribed radiological lesion or a destroyed lung; and previous relapse(s) in patients with histories of TB and proper drug regimen. The management of post-resection complications is still debated, featuring a wide range of procedures in order to reinforce the

bronchial stump like omental pedicled flap or intercostal muscle flap or use of pericardium, to sterilize the residual cavity, and to obliterate it. The harvested pedicled latissimus dorsi and serratus anterior muscle graft transferred to affected side can fill out the residual post-resection space [10].

With increased incidence of drug resistant TB - the Thoracic Surgeon have to deal with more complex situation than ever before. Anti-tubercular drug for resistant forms should be handled by experts in the field. Selective localized tuberculous lesions can be treated by Video Assisted Thoracic Surgery (VATS) resections. One of the commonest complications of TB is the tuberculous pleural empyema for which the drainage is almost never sufficient and often complex procedures are needed. The presence of any broncho-pleural fistula is a real challenge for the Thoracic Surgeon who has to manage different demolitive and reconstructive methods to get the best possible final result [11].

Factors favoring Surgery in drug resistant TB are i) medical cure is unlikely, ii) Localized lung damage (cavitary lung disease, destroyed lung) that might be a focus of persistent disease and/or further acquired resistance, iii) Allergies or intolerance to essential medications that might afford cure, iv) Lack of access to curative chemotherapy. Surgery in selected patients of MDR/XDR TB can offer benefits like i) Rapid bacteriologic conversion, ii) Removal of bronchiectatic/fibrotic lung, iii) Increased chance of cure in some patients. However, surgery is also not without risks, some of which are i) Morbidity and mortality related to surgery, ii) Potential long-term functional deficits, iii) Transmission in the health facility etc. [2,3,9,10].

The probability of ultimate success depends on several factors: (I) proper & adequate antibiotic therapy; (II) compliance of the patient; (III) effective multidisciplinary teamwork; (IV) experience in carrying out “not-routine surgical procedures”; and finally (V) ability to keep the patient hospitalized for a long time. The probability of good patient outcome is higher when all of these criteria are satisfied [11].

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