The Surgical Treatment of Tracheobronchial Tuberculosis

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Named also: **endobronchial tuberculosis**, EBTB

- defined as tuberculous infection of the tracheobronchial tree with microbial and histopathological evidence.
Pathology

- mucosal and submucosal tuberculous infiltration, ulcer, granuloma, fibroplasias and tracheobronchial stenosis.
- tuberculose focuses are not merely localized to mucosa and submucosa. They may affect any part and any layer of the tracheobronchial wall including lamina muscularis and cartilage.
- Acid-fast bacilli staining may be positive.
Clinical features

• The clinical manifestations may be acute, insidious, or delayed
• Common chief complaints: cough, expectoration, hemoptysis, short breath, wheezing and fever.
• Frequent signs: diminished breath sound, respiratory rudeness, rhonchus and localized moist rales.
Radiological finding

• 10 to 20 percent patients may have a normal chest radiograph
• CT scan should include both multiplanar and three-dimensional (3D) images: tracheobronchial stenosis, tracheobronchial wall incrassation, intraluminal neoplasm, fibrotic and calcific focus, cavity, inflammatory infiltration, bronchiectasis, intrathoracic lymphadenectomy and pleural effusion.
bronchoscopic appearance

- nonspecific bronchitis
- edematous- hyperemia
- actively caseating
- granular nodules
- mucosa ulcerate
- tumorous like
- fibrous hyperplasia and contracture.
Therapy

- main goals: eradication of Mycobacterium tuberculosis and prevention of tracheobronchial stenosis
- The course and the prognosis vary largely:
  - being cured without sequela in a shorter period of time
  - resulting in long-term sequela such as tracheobronchial stenosis or leading to death.
Therapy

• Anti-tuberculosis chemotherapy in active stages is generally a combination regimen composed of four kinds of anti-tuberculosis drugs, and the time of treatment ought to be more than nine months.
Therapy: Local medications

- inhalation of nebulized antituberculosis drugs,
- the diseased region lavage of antituberculosis drugs
- the submucous injection of antituberculosis drugs.
• For patients in which fibrostenosis already develops or extensive granulation tissue appears, the curative effect of anti-tuberculosis chemotherapy is unfavorable.

• Glucocorticoid is mainly used to relieve symptoms, tracheobronchial mucosal edema and hypersensitivity to the antigens of Mycobacterium tuberculosis. There are controversies about whether or not glucocorticoid can prevent fibrostenosis shaping.
Interventional bronchoscopy

• Tracheobronchial stenosis shaped by extensive granulation tissue can be relieved by surgical removals on bronchoscope.

• Available approaches include laser ablation, microwave ablation, electrocautery and cryotherapy.
Interventional bronchoscopy

- Fibrostenosis is the indication of balloon dilatation and stent implantation on bronchoscope.

- Restenosis after balloon dilatation is commonly seen, and the incidence of restenosis is about a month after balloon dilatation.
• The protective efficacy of stent implantation is yet unsure, because the stent, a foreign body, may cause granulation tissue hyperplasia around it, which in turn can lead to stenosis.
Surgical Therapy

• Severe tracheobronchial stenosis, which causes repeated pulmonary infection or lung damage and cannot be relieved by medical treatments, may require chest surgery.
operation modes

• trachea resection and tracheoplasty
• carinal resection and reconstruction
• lobectomy+ tracheal sleeve resection
• tracheal sleeve resection
• sleeve segmentectomy
trachea resection and tracheoplasty
carinal resection and reconstruction
lobectomy + tracheal sleeve resection
• Most of the patients can have a good prognosis

• The most frequent complication is anastomotic stenosis

• Lobectomy or pneumonectomy with trachial or bronchial plasty is a very useful technic
Thank you!