

Pulmonary conditions of surgical :importance

:C. Bronchiectasis

:Definition

Abnormal and permanent distortion of one or more bronchi beyond the subsegmental level prevents secretions from being adequately cleared from the lung, it is of three types, normally the bronchial diameter is 1-1.5 time the diameter of the adjacent vessel, if it become more than 1.5 time that diameter it considered .as bronchiectasis

:morphological types

- .1 Cylindrical
 - .2 Varicose
 - .3 Saccular
- .The LT lower lobe most commonly affected followed by the RT lower lobe

:Etiology

congenital bronchiectasis: it formed 25% of all causes, a condition called .1 Kartagner's syndrome (bronchiectasis, situs inversus, sinusitis, and infertility), the main pathology is a genetic disorder with abnormal ciliary movement and impaired sputum clearance with the resultant of bronchiectasis and sperm hypo-motility that .causes infertility

:acquired bronchiectasis .2

- a. *bronchial obstruction:* by missed foreign body, enlarged lymph node, or .neoplasm
- b. *air way infection:* viral or bacterial infection

The main underlying pathophysiology is airway obstruction superadded by infection, the obstruction causes stasis of secretion, stasis will encourage infection, and infection weaken bronchial cartilages lead to bronchial dilatation and more stasis .and further more infection and destruction ending with bronchiectasis

:Clinical manifestations

The onset of the disease starts at childhood whereas the symptoms appear in the 2nd or 3rd decade of the life, it affects female more than male, the major symptom is chronic coughing and expectoration of a large quantity of purulent sputum with fetor oris. 50% of patients may present with hemoptysis, and other have repeated .chest infection, develop osteoarthropathy with fingers clubbing

:Diagnosis

- .1 **clinical features:** chronic cough and expectoration, fingers clubbing

chest X-Ray: prominent broncho-vascular markings, visible cystic changes may .2
.appear in advanced disease

C-T scan of the chest: the most important single non-invasive tool for diagnosis .3
.and assessment of the distribution and severity of the disease

bronchoscopy: diagnose obstructive lesion, take sample of bronchial wash for .4
.culture and sensitivity, and assess the site of discharging sputum, pus and blood

pulmonary function tests: for assessment of patient fitness for general .5
.anesthesia and the proposed surgery of pulmonary resection

:Treatment

A. conservative: by keeping the infection under strict control by taking a sputum sample for AFB and culture and sensitivity, and to initiate antibiotics according to the results. Always do preoperative flexible bronchoscopy for tracheobronchial lavage to keep the bronchial secretion at a level as minimal as possible during .surgery to decrease the risk of bronchogenic spread at time of surgery

B. surgery: it reserved for symptomatic patient despite prolonged medical treatment, it includes pulmonary resection of the diseased part of the lung, so this .may be achieved by segmentectomy, lobectomy and pneumonectomy

\

:D. Lung abscess

Definition: It is a localized area of suppuration and cavitation in the lung results .in a circumscribed cavity filled with purulent material and air

:Etiology

primary lung abscess: it is caused by aspiration of infected material from the oro- .1
.pharynx through the tracheobronchial tree to a previously healthy lung tissue

secondary lung abscess: due to .2

- a. **infection of pre-existing lung cavity**, like ruptured hydatid cyst, congenital or .acquired pneumocyst, bronchial cyst and bronchiectasis
- b. **spread from nearby infected organ** like chest wall abscess, empyema and .ruptured esophagus
- .c. **distant metastasis** of infected embolus in infective endocarditis
- .d. **air way obstruction** by foreign body aspiration or neoplasm
- .e. **immune suppressed** patients

The aspiration of infected material causes local severe pneumonitis in the lung parenchyma with liquefaction followed by emptying of the liquefied necrotic .material into the nearby bronchus forming a cavity containing pus and air

:Clinical features

Cough with expectoration of foul smelling sputum, fever, pleuritic chest pain, .night sweating and weigh loss, and in severe cases dyspnea, cyanosis and cachexia

:Diagnosis

Chest X-Ray shows characteristic air fluid level, and chest C-T scan is diagnostic
.for the abscess and any underlying lung pathology

:Treatment

medical: consist of prolonged antibiotic course depending on the results of .1
culture and sensitivity, vigorous chest physiotherapy, and postural drainage.
Bronchoscopy may be used to drain more of pus and to remove any foreign body,
and some time in severely toxic patient an intracavitary chest tube is inserted under
.C-T scan guide to drain pus directly outside the lung and relief the toxic condition

surgery: it is indicated in the following conditions .2

- .a. failure of proper prolonged medical treatment
- b. massive hemoptysis neither responding to medical treatment nor bronchoscopic
.control by cold or iced normal saline or local diluted ephedrine solution
- .c. persistent thick wall cavity in symptomatic patient
- .d. if malignancy is suspected
- .e. empyema due to rupture of abscess into the pleural cavity

B. Surgical treatment of pulmonary tuberculosis:

Indications of surgery:

1. Massive or recurrent severe hemoptysis, surgery for removal of the source of bleeding "that part of lung parenchyma".
2. Tuberculous broncho-pleural fistula.
3. Open cavity and positive sputum that resist treatment for 3-6 months.
4. Tuberculous bronchiectasis.
5. Suspected malignancy, as tuberculosis and malignancy may co-exist, or carcinoma may arise on tuberculous scar.
6. Trapped lung syndrome, after chronic empyema.
7. Recurrent hemoptysis secondary to pulmonary mycetoma.
8. Residual destroyed segment, lobe or lung, or cavity or tuberculoma, as anti-tuberculous drugs cannot penetrate dense fibrous tissue in sufficient concentration.

Type of surgery:

1. anatomical pulmonary resection: segmentectomy, lobectomy and pneumonectomy.
2. decortication with or without pulmonary resection: decortication is to remove thickened and adherent visceral and parietal pleura.

1. Complications:

2. tuberculous broncho-pleural fistula.
3. bronchogenic spread of tuberculosis.

Contraindications:

- A. impaired cardiac function.
- B. b. insufficient respiratory reserve.
- C. c. debilitated patient.

Usually surgery is postponed for 3-6 months after the initiation of anti-tuberculous therapy.