Aspiration pneumonia develops after the aspiration of colonized oropharyngeal contents. Aspiration of pathogens from a previously colonized oropharynx is the primary pathway by which bacteria gain entrance to the lungs.

Pathogenesis:
- Any condition that increases the volume and/or bacterial burden of oropharyngeal secretion in the setting of impaired host defense mechanisms may lead to aspiration pneumonia.
- Colonization of the oropharynx is another important step in the pathogenesis of aspiration pneumonia. The elderly have increased oropharyngeal colonization with pathogens such as Staphylococcus aureus and aerobic gram-negative bacilli (e.g., Klebsiella pneumoniae and Escherichia coli).
- Dysphagia is a key risk factor & commonly develops in the setting of stroke or neurodegenerative disease.

Clinical features:
- In patients with aspiration pneumonia, unlike the case of aspiration pneumonitis, the episode of aspiration is generally not witnessed. The diagnosis is therefore inferred when a patient with known risk factors for aspiration has an infiltrate in a characteristic bronchopulmonary segment.
- In patients who aspirate in the recumbent position the most common sites of involvement are the posterior segments of the upper lobes and the apical segments of the lower lobes. In patients who aspirate in the upright or semi-recumbent position the basal segments of the lower lobes are favored.
- The usual picture is that of an acute pneumonitis process, which runs a course similar to that of a typical CAP. If untreated, however, these patients appear to have a higher incidence of cavitation and lung abscess formation.

For initial treatment of aspiration pneumonia, use:
- benzylpenicillin 1.2 g (child: 30 mg/kg up to 1.2 g) IV, 6-hourly
- metronidazole 500 mg (child: 12.5 mg/kg up to 500 mg) IV, 12-hourly
- or metronidazole 400 mg (child: 10 mg/kg up to 400 mg) orally, 12-hourly.
- Alternatively, or in patients with immediate penicillin hypersensitivity, as a single drug use:
  - clindamycin 450 mg (child: 10 mg/kg up to 450 mg) IV or orally, 8-hourly
  - or lincomycin 600 mg (child: 15 mg/kg up to 600 mg) IV, 8-hourly
- Empirical therapy is appropriate in patients who aspirate gastric contents in the setting of small bowel obstruction or in other circumstances associated with colonization of gastric contents.

- Switch to oral therapy after there has been significant improvement (eg when fever and/or other objective signs are resolving), and the patient is able to tolerate oral medication.
- amoxicillin/clavulanic acid 875+125 mg (child: 22.5+3.2 mg/kg up to 875+125 mg) orally, 12-hourly.
- In patients with penicillin hypersensitivity, use:
  - clindamycin 450 mg (child: 10 mg/kg up to 450 mg) orally, 8-hourly.
- For uncomplicated aspiration pneumonia, 7 days of therapy is usually adequate, but extensive disease or abscess formation may require more prolonged high-dose therapy and/or surgery.

Lung abscesses usually develop either as a result of aspiration of organisms in patients with dental caries, aspiration of foreign bodies (eg a tooth, a peanut), or as a consequence of severe necrotising pneumonia.

- Patients with altered consciousness states (eg from anaesthesia, or alcohol intoxication, or postictal) and/or with swallowing difficulties are at particular risk. Septic emboli are occasionally a cause in intravenous drug users, often with right-sided endocarditis.
- Lung abscesses can also be a consequence of septic thrombophlebitis of pelvic or internal jugular veins (Lemierre syndrome).
- Infection of pre-existing bullae in a patient with emphysema can masquerade as a clinical manifestation.
- In patients with penicillin hypersensitivity, use:
  - clindamycin 450 mg (child: 10 mg/kg up to 450 mg) orally, 8-hourly.
- If infection with Staphylococcus aureus is suspected or proven, see Staphylococcal pneumonia.
- In patients with dental caries, aspiration of foreign bodies (eg a tooth, a peanut), or as a consequence of severe necrotising pneumonia.

- Where possible, attempts should be made to identify the causal organism.
- Bronchoscopy or fine needle aspiration may be needed to obtain diagnostic specimens or remove a foreign body.

- If the abscess has clearly cavitated and the patient has a productive cough, the abscess is probably draining into the airways, and antibiotics and physiotherapy should be sufficient. If that is not the case, drainage of the abscess via a catheter (eg inserted under ultrasound or computerised tomography [CT] guidance) is recommended.
- For empirical antibiotic therapy (after obtaining appropriate cultures), see recommendations for aspiration pneumonia.

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