

Aspiration Pneumonia

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ABSTRACT

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Disappointingly, despite the availability of an effective range of preventive and therapeutic measures, pneumonias remain the most common infectious cause of death. Pneumonia is usually referred to a syndrome caused by acute infections involving lung parenchyma or interstitium usually due to bacteria and is characterized by consolidation, both clinical and radiological.

Aspiration of contaminated material from oropharynx and/or stomach is by far the most common mechanisms of nosocomial pneumonia.

Clinical features of aspiration pneumonia may not be that dramatic to start with and depend upon the stages from pneumonitis to abscess.

Keywords: Aspiration pneumonia, Aspiration, Suppuration, Oral flora.

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Disappointingly, despite the availability of an effective range of preventive and therapeutic measures, pneumonias remain the most common infectious cause of death. Pneumonia is usually referred to a syndrome caused by acute infections involving lung parenchyma or interstitium usually due to bacteria and is characterized by consolidation, both clinical and radiological. The clinical context in which a pneumonia develops is highly suggestive of the likely organism involved and hence the immediate choice of antibiotics. From the clinical point of view pneumonia can be classified to community acquired pneumonia, nosocomial pneumonia, aspiration pneumonia and pneumonia in immunocompromised host. Various ways in which potential pathogens can gain access to the respiratory tract include; direct inoculation, hematogenous spread through vascular system, inhalation of aerosol inocula and colonization of the respiratory mucosal surface and subsequent aspiration. Aspiration of small amounts of oropharyngeal contents occur in healthy people during sleep. Aspiration occurs in 45-50% of healthy subjects and 70% with impaired consciousness. The defense mechanisms of the lung are not that efficient against aspirated bacteria as they are against inhaled or aerosolized organisms.

Aspiration of contaminated material from oropharynx and/or stomach is by far the most common mechanisms of nosocomial pneumonia. Colonization of the oropharynx by gram negative bacilli occur

in 10% of normal individuals. Hospitalization and stressful conditions like acute illnesses increases the rate of colonization to 30 to 40%. The rate of gram negative bacilli oral colonization increased to 70 to 75% in moribund or chronically ill patients. Advanced age is a major risk factor for pneumonia. The death rate due to pneumonia in the elderly aged above 75 years is twenty times more than in those below 60 years. This predilection of pneumonia for the elderly lead Sir William Osler in 1898 to describe the condition as “the friend of the aged”.

Normal oral flora consist of 10⁸ anaerobes/ml of saliva. With various species of bacteroides, fucobacterium and anaerobic cocci. Counts of anaerobes are lower for edentulous subjects and higher for patients with gingivitis and periodontal disease. The increase in counts of anaerobes in oral sepsis could be as high as 1000 times more than normal subjects. Gram negative bacilli colonization is common in alcoholics and in patients who are acutely or chronically ill.

Suppurative pneumonia with pneumonic consolidation and destruction of the lung parenchyma with characteristic microabscess formation and sometimes with lung abscess formation is met with high morbidity and mortality. It may be produced by infection of previously healthy lung tissue with *Staphylococcus aureus* or *Klebsiella pneumoniae*. More frequently suppurative pneumonia and lung abscess develop after inhalation of septic material during operations on the

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nose, mouth or throat under general anaesthesia or of vomitus during anaesthesia or coma. In such occasions oral sepsis may be a predisposing factor. Microbial aetiology of the infection depends upon the setting in which aspiration occurs in community acquired pneumonia the indigenous oropharyngeal flora which largely consist of anaerobes and streptococci. *Moraxella* (*Branhamella*), *Catarrhalis* and *Eikenella* *Coorodens* also may be involved.

Aspiration that occurs in a hospital settings in addition to above organisms typical nosocomially acquired pathogens such as *S.aureus* and various gram negative bacilli.

Clinical features of aspiration pneumonia may not be that dramatic to start with and depend upon the stages from pneumonitis to abscess. Diagnostic yield of sputum of anaerobic bacteria depend upon the use of anaerobic holding medium properly. Penicillin G continues to be the drug of choice for aspiration pneumonia. *Bacteroides fragilis* is resistant to penicillin, so metronidazole or chloramphenicol should be supplemented. Imipenem, Ticarcillin, Clavulanate, Clindamycin, Vancomycin and Cefoxitin are also effective against anaerobes. Prolonged therapy which is individualized and a period of 2 to 4 months of therapy may be required.^{1,2,4}

The study on the effect of professional oral care on the incidence of pneumonia in the elderly living in

nursing homes by Dr. Jacob Baby and Dr. Angel Fenol presented in this edition highlights the significance of oral hygiene in combating the number one infectious cause of mortality in the population.³

END NOTE

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