

# Aspiration Pneumonia and Pneumonitis



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## KEYWORDS

• Aspiration • Pneumonia • Pneumonitis • Aspiration pneumonia • Dysphagia

## HOSPITAL MEDICINE CLINICS CHECKLIST

1. Aspiration is the passage of food particulate, oropharyngeal secretions, or gastric contents into the trachea and lower respiratory system. It can occur in healthy individuals; however, it becomes pathologic when normal defense mechanisms are compromised or overcome by a large volume of aspirate.
2. Aspiration can occur before, during, or after a swallow. Several mechanisms prevent aspiration during a normal swallow.
3. A number of medical conditions predispose individuals to aspiration, including an altered level of consciousness, mechanical disruption in the gastrointestinal tract or respiratory system, neuromuscular disease, or gastro-esophageal disorders.
4. Pneumonia does not develop in all patients who aspirate, and the risk of developing pneumonia after an aspiration event is influenced by factors related to the host and pathogen.
5. The incidence of aspiration as a cause of pneumonia increases with age and certain risk factors, such as stroke.
6. Aspiration pneumonia and pneumonitis should both be managed with supportive care. Antibiotics should not be used in aspiration pneumonitis.
7. The clinical presentations of aspiration pneumonia and pneumonitis are similar and the time course for the development of symptoms in relation to the aspiration event is the main factor that can be used to distinguish the two entities.
8. Anaerobic coverage has traditionally been recommended for treatment of aspiration pneumonia, however, more recent data suggest that anaerobes are

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Nothing to disclose.

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infrequently implicated. Anaerobic coverage is only recommended when the classic syndrome presents in patients with a history of loss of consciousness as a result of alcohol or drug overdose, and after seizures in patients with concomitant gingival disease or esophageal motility disorders.

9. Enteral feeding has not been shown to decrease the risk of aspiration events.

**DEFINITIONS***What is the definition of aspiration?*

Aspiration is the passage of food particulate, oropharyngeal secretions, or gastric contents into the trachea and lower respiratory system and results from an inability to protect the airway or a swallowing disorder. This is distinguished from microaspiration, which occurs in healthy individuals, frequently during sleep. In such patients, intact clearance mechanisms and immune defenses prevent subsequent development of disease.<sup>1</sup> Silent aspiration occurs without any symptoms, such as shortness of breath or cough. Although aspiration, microaspiration and silent aspiration are not always pathologic, when normal defense mechanisms are compromised or the volume of aspirate overcomes these normal defense mechanisms, any of these conditions may result in pneumonia or pneumonitis.

*How are pathologic aspiration events classified?*

There are two main conditions encountered by hospitalists resulting from pathologic aspiration. Aspiration pneumonitis, also known as chemical pneumonitis or Mendelson syndrome, is caused by an inflammatory reaction to aspirated material. The acidic pH of stomach contents underlies the tissue damage that occurs in this condition.<sup>2</sup> In contrast, aspiration pneumonia is characterized by infection of the lung parenchyma caused by bacteria aspirated from the oral cavity and the immune response to this infection. Although microaspiration is the underlying mechanism for all types of pneumonia, *aspiration* pneumonia refers to pneumonia resulting from a *macroaspiration* event, typically caused by a large volume of less virulent bacteria.<sup>3</sup>

**PATHOPHYSIOLOGY***What is the physiology of a normal swallow?*

Although aspiration does not always occur during a swallow, a dysfunctional swallow can significantly increase a patient's risk for aspiration. In a normal, healthy individual, swallowing is a coordinated effort that can be separated into 4 steps, illustrated in **Fig. 1**. First, a bolus of food is formed in the mouth and propelled by the tongue into the back of the mouth. As the bolus reaches the epiglottis, the larynx moves upward and forward. Constriction of the pharyngeal muscles moves the bolus into the esophagus while the epiglottis simultaneously closes, preventing passage of food into the larynx.<sup>4</sup> Finally, peristalsis of the esophageal muscles then moves the bolus of food toward the stomach. When these steps occur in a coordinated manner, aspiration is unlikely.<sup>4</sup>

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