



NCCU CLINICAL GUIDELINES
SECTION: 2

RESPIRATORY PROBLEMS AND MANAGEMENT

Section 2: Respiratory problems and management
Pneumonia and aspiration pneumonia
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PNEUMONIA

Infection in the lung, most commonly bacterial but may be viral. May be categorised into the following:

- Pneumonia acquired from the mother: congenital/transnatal (infant thought to aspirate vaginal bacteria during the birth process. The onset of clinical signs is delayed for a few hours or days)
- Nosocomial pneumonia (Intubation a significant risk factor).
- Aspiration pneumonia (see below).

CLINICAL PRESENTATION

The diagnosis is made on history and clinical symptoms. Pneumonia may be one symptom of a clinical spectrum of sepsis. [See Section 8: Infection in the neonate](#)

SYMPTOMS INCLUDE

- Respiratory distress, apnoea.
- Pneumonia can be one symptom of the clinical spectrum of sepsis. Consider fungal infection in an infant who has been on broad spectrum antibiotics, who presents with a clinical deterioration, hyperglycaemia and thrombocytopenia.
- [See Section 8 - Infection, Septic Screening and Management of Infection](#)

INVESTIGATIONS

- CXR (AP and Lateral) X-ray findings may not be specific in pneumonia but may show non-specific areas of consolidation or atelectasis. [See Section 8 - Infection, Septic Screening and Management of Infection](#)

TREATMENT

[See Section 8 - Infection, Septic Screening and Management of Infection](#)

ASPIRATION PNEUMONIA

Inhalation of milk or other agents, associated with respiratory symptoms. The epidemiology is dependent on the cause of the aspiration.

1. Sucking/swallowing in-coordination caused by:
 - Prematurity.
 - Secondary to structural malformations or neurological disorders, cleft palate, Pierre-Robin syndrome, tracheo-oesophageal fistula, laryngeal cleft, HIE
 - Syndromes with poor sucking e.g. Prader-Willi.
2. Syndromes attributed to Gastro Oesophageal Reflux (GOR).

- In infants on IPPV – RUL collapse.
- Wilson-Mikity syndrome.
- Apnoeic attacks.

3. Massive regurgitation and inhalation of a feed.

PATHOPHYSIOLOGY

The anatomy of the pharynx and larynx is largely responsible for protecting the airway from inhalation. This is aided by 'defensive reflexes'. Material in the pharynx initiates swallowing and reflex breath holding. If the airway is still threatened, additional reflexes are provoked with the aim of protecting the airway. These include more prolonged apnoea, choking, laryngospasm and coughing. These mechanisms are less effective in the neonatal period than in older children and adults.

CLINICAL PRESENTATION

- Coordination of sucking, swallowing and breathing is more difficult at all gestations if the infant is sedated (opiates) or if the infant is tachypnoeic.
- Aspiration can be seen in these instances:
 1. In a term infant who during a breast/bottle feed in the first 48-72 hours of life chokes, splutters and may be transiently apnoeic and blue. Many of these are at the extreme end of normal spectrum in response to feeding.
 2. Silent aspiration in an ill or convalescent infant, provoking the apnoea alarm.
 3. Pneumonia following aspiration is more likely in infants with neurological defects, structural malformations or preterm infants.

INVESTIGATIONS

- Chest X-ray may show changes especially in the RUL or RLL. Alternative diagnoses especially infection should be considered.
- If the infant is very unwell-investigate as per general respiratory management.
- A barium swallow may be indicated to examine feeding coordination and to whether aspiration is present.

MANAGEMENT

As pneumonia is possible, we would advise to treat with antibiotics if the infant is clinically very unwell, or the infant has an immune-deficiency. Otherwise treatment is dependent on the extent of pulmonary compromise and the reason for aspiration.

REFERENCES

Greenough A., Milner A., Hannam D. et al Chapter 27 Pulmonary Disease of the Newborn (in particular table 27.8) p445-616 In Rennie and Robertson's Textbook of Neonatology Editor: Rennie J. 5th Edition 2012 Elsevier Ltd. <https://www.clinicalkey-com-au.kelibresources.health.wa.gov.au/#!/ContentPlayerCtrl/doPlayContent/3-s2.0-B9780702034794000271/>