

ONEPCN 10 MINUTE CLINIC PODCAST SHOW NOTES; CROUP

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Croup is a respiratory condition typically affecting children, characterized by a distinctive barking cough, hoarseness, and difficulty breathing. Caused primarily by viral infections, especially the parainfluenza virus, it inflames the larynx, trachea, and bronchi, leading to swelling and obstruction in the airway. Croup symptoms often worsen at night and can be triggered by environmental factors like cold air. In this 10 minute clinic podcast we look at how best to diagnose it, whether scoring systems are useful, and principles of effective management including when to consider hospital referral.

References and resources

[Croup - NHS \(www.nhs.uk\)](http://www.nhs.uk)

[Croup \(scot.nhs.uk\)](http://scot.nhs.uk)

[Croup: Diagnosis and Management - PubMed \(nih.gov\)](http://pubmed.ncbi.nlm.nih.gov)

[Glucocorticoids for croup in children - PubMed \(nih.gov\)](http://pubmed.ncbi.nlm.nih.gov)

[Nebulized epinephrine for croup in children - PubMed \(nih.gov\)](http://pubmed.ncbi.nlm.nih.gov)

[Croup | Treatment summaries | BNF | NICE](#)

Take home points

- Croup is an upper respiratory tract infection occurring in infants and toddlers.
- It affects 3% of children aged six months to three years of age
- Parainfluenza viruses account for the majority of cases - typically parainfluenza virus types 1 or 3.

- There is a characteristic inspiratory stridor caused by laryngeal oedema and thick tenacious secretions that block the trachea and airways.
- The onset is slower than that of acute epiglottitis and is usually preceded by a coryzal illness.
- Viral croup affects children and has peak incidence at two years of age. It is the commonest cause of airway obstruction in children 6 months to 6 years of age.
- Boys are affected more often than girls, and it is most commonly seen in the autumn and winter months.
- Spasmodic croup is associated with the viruses that cause viral croup. In this case, the onset is sudden, without a viral prodrome.
- Clinically, it is difficult to distinguish between viral and spasmodic croup, and is likely to be unnecessary as treatment decisions are based upon history and clinical severity of the airway obstruction.
- Croup normally starts with nonspecific symptoms of viral upper respiratory tract infection (URTI), such as runny nose, sore throat, fever and cough.
- This progresses over the course of a couple of days to include the characteristic barking cough and hoarseness. These symptoms tend to be worse at night.
- There is a high degree of variability in clinical findings. There may be a mild-to-moderate fever. Check vital signs (including temperature, pulse and blood pressure).
- A barking cough and hoarse cry are nearly always present.
- Stridor (harsh, low-pitched noise heard during inspiration) may be heard at rest or only when the child is agitated or active.

- Chest sounds are usually normal but can be decreased in volume where there is severe airflow limitation.
- A child whose stridor appears to be improving and in whom intercostal recession has disappeared may in fact be deteriorating with worsening airways obstruction.
- Drowsiness, lethargy, and cyanosis despite increasing respiratory distress should be considered as red flags for impending respiratory failure.
- The illness peaks between 24 and 48 hours and usually resolves within 7 days.
- The diagnosis is usually made on clinical grounds but a low SaO₂ on pulse oximetry (<95%) indicates significant respiratory impairment.
- Croup can be classified into mild, moderate or severe.
- Mild - seal-like barking cough but no stridor or sternal/intercostal recession at rest.
- Moderate - seal-like barking cough with stridor and sternal recession at rest; no agitation or lethargy.
- Severe - seal-like barking cough with stridor and sternal/intercostal recession associated with agitation or lethargy.
- Indications for hospitalization are cyanosis, pallor, respiratory distress, hypoxaemia, stridor at rest, a toxic-looking child and suspected epiglottitis.
- Sitting the child upright may improve the croup
- Humidification is often used but there is now convincing evidence that these are ineffective.

- Antipyretic agents should not be used with the sole aim of reducing body temperature and should be continued for only as long as the child appears distressed.
- In mild croup a single dose of oral dexamethasone (0.15 mg/kg) taken immediately appears to be of benefit in cases of mild croup compared with placebo.
- Oral dexamethasone 0.15mg per kg, or prednisolone 1-2mg per kg, is helpful in reducing upper airway inflammation, stridor and respiratory distress and there is evidence that the use of nebulised steroids reduces the need for inhaled adrenaline
- Use oxygen with caution. If you believe it is required then the child is seriously ill and in danger of respiratory arrest. Its use may make the monitoring of oxygen saturations difficult
- In most cases of moderate croup, symptoms resolve without significant complications, and with dexamethasone and nebulised epinephrine combination treatment, the prognosis for severe croup is excellent.
- About 15% of patients experience a complication of viral croup, including otitis media
- Death from croup is rare, occurring in about 1 in every 30,000 cases.