Case Scenario: Cough

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- A parent brings her four-year-old son in to the paedaitric clinic because her son has a loud cough and a runny nose.

What are the Questions that we need to ask?

Cough characteristics

- When did the cough start?
- Is the cough dry or productive?
- Has the child been feeling unwell recently (e.g. experiencing fever, runny nose, aches, pains and sore throat)?
- Is there wheeze associated with the cough?
- Is the child experiencing any stridor, tachypnoea or swallowing difficulties?
- Could this cough be aspiration of a foreign object?

Patient medical history

- Does the child have any medical issues?
- Are they currently taking any medicines?
- Is this the first presentation of cough?
- How old is the child and are they up to date with their childhood vaccination schedule?
- Has the cough had an impact on the child’s wellbeing (e.g. poor growth, finger clubbing, haemoptysis or shortness of breath)?

Scenario …continues…

- The parent explains that her son has been coughing for the past three days, mostly at night.
- It is a dry cough that sounds like a barking noise and his voice is a bit hoarse.
- The child has no previous respiratory symptoms nor has been hospitalised for any infections.
- He is up to date with his vaccination schedule.

On examination:

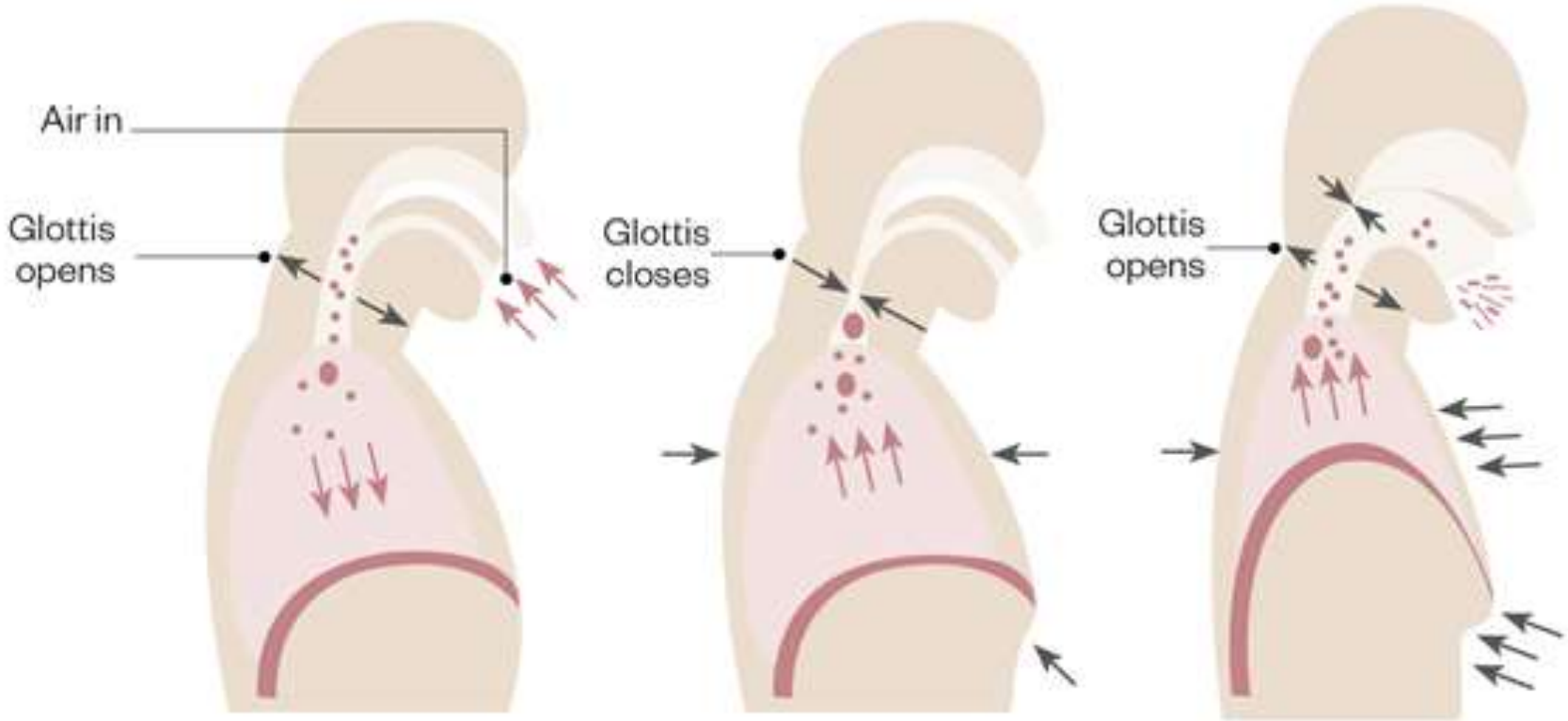
- The child looks well apart from a runny nose and he does not have a temperature or shortness of breath.

- **Diagnosis:** The child most likely has croup.
- This is a common viral illness in a child, which causes a characteristic ‘barking’ cough.
- The illness is self-limiting. However, to be managed with nebulized adrenaline and dexamethasone IM/IV if starts to have stridor at rest.

COUGH

Pathophysiology

- There is an initial deep breath (inspiratory mechanism);
- The closing of the epiglottis to entrap the air within the lungs (compressive mechanism);
- The opening of the glottis, closure of the nasopharynx and expiration through the mouth with noise (expulsive mechanism).



1. Inspiratory phase
Air is taken into the lungs (2.5–3.0 litres)

2. Compressive phase
Glottis closes and intrathoracic pressure builds as a result of expiratory muscle contraction

3. Expiratory phase
Sudden release of air at high velocity (50–500mph)

→ = Movement of air

What do you need to know to diagnose cough??

❖The two most common types of cough are a dry cough and a chesty/productive cough:

- **Dry cough:**

  A non-productive cough can be caused by the following:

- Asthma;
- Environmental irritants or medicines such as angiotensin converting enzyme (ACE) inhibitors.
- Common signs include lack of phlegm (mucus) and the patient may describe it as “tickly”.

- **Chesty/productive cough:**

➢Common causes include:

- Upper airway cough syndrome (previously referred to as post-nasal drip syndrome);
- Gastroesophageal reflux disease;
- Chronic obstructive pulmonary disease;
- Infection caused by a bacteria or virus.

Duration of cough?

❖**Acute cough:**

Defined as a cough persisting for less than three weeks.

Acute cough is usually self-limiting and can be caused by viral infections, bacterial infections or inhalation of a foreign irritant.

The choice of diagnostic test depends on the origin of the cough, allergy testing, throat swabs and examination of the throat.

❖ Subacute cough

- Defined as a cough lasting for between *three and eight weeks*
- Subacute cough is most commonly caused by airway hyper-responsiveness following specific infections such as Mycoplasma pneumonia.
- Alternatively, it may be following resolution of Bordetella pertussis infection, where a post-infectious cough persists.

❖ Chronic cough

- A cough lasting for more than eight weeks.
- It is most commonly caused by:

Asthma,

Upper airway cough syndrome (previously referred to as post-Nasal drip syndrome),

Upper respiratory tract infection

Gastroesophageal reflux disease (GORD).

The clinical assessment of a chronic cough includes:

- Cough severity (e.g. is there sputum or blood associated with the cough?);
- Frequency (e.g. is the cough occurring throughout the day or is it worse in the morning or at night?);
- Impact on the patient's well being (e.g. are they not able to do things they previously could?).

Identifying red flags

- Abundant production of sputum;
- Fever and sweats;
- Considerable breathlessness;
- Unexplained weight loss;
- Coughing up blood or red phlegm;
- Heartburn;
- If the cough quickly gets worse or the patient cannot stop coughing;
- If the cough is persistent (e.g. it lasts for more than three weeks).

Duration	Common Etiologies
Acute cough(<2 weeks)	•Classical recognizable cough: • Laryngotracheobronchitis – barking cough • Staccato – Chlamydia (infant) • Paroxymal – pertussis and para-pertussis • Psychogenic – honking cough •Acute upper / lower respiratory tract infection (ARI) •Foreign body aspiration •Asthma •Inhalation injury (acute exposure to smoke or volatile substances) •Embolism hemorrhage (rare)
Subacute cough(2-4 weeks)	•Post viral cough •Acute bronchitis
Chronic cough (> 4 weeks)	•Non specific cough: • Post viral • Increased cough receptor sensitivity • Asthma • Gastroesophageal reflux • Upper airway problems • Functional disorders •Subacute bronchitis •Bronchiectasis or recurrent pneumonia: • Cystic fibrosis • Ciliary dyskinesia • Immunodeficiency • Congenital lung lesions •Aspiration •Chronic infections: • Tuberculosis • Non-tuberculous mycobacteria • Mycoses •Interstitial lung disease (i.e. Rheumatic diseases) •Cardiac

Thank you