GERD-Related Chronic Cough

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Case Study: Patient #3

- A 55-year-old man is referred for evaluation because of a persistent cough for 6 months
- Cough awakens him at night and he reports difficulty with sleeping
Case Study: Patient #3

• Cough is not associated with exertion or shortness of breath
• He is a non-smoker and not on an angiotensin-converting enzyme inhibitor (ACEI)
• No symptoms of rhinitis or sinusitis
• Occasional heartburn in the past 3 years with over-eating
Case Study: Patient #3

- Normal chest X-ray
- Normal pulmonary function tests
Focused Clinical Questions

1. Is this patient’s chronic cough due to GERD?
2. What is the next step?
### Extraesophageal GERD

<table>
<thead>
<tr>
<th>ENT</th>
<th>Pulmonary</th>
<th>Chest Pain</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laryngitis</td>
<td>Asthma</td>
<td>Non-cardiac chest pain</td>
<td>Dental erosions</td>
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<td>Sinusitis</td>
<td><strong>Chronic Cough</strong></td>
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<td>Halitosis</td>
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<td>Otitis</td>
<td>Pneumonia</td>
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<td>Hoarseness</td>
<td>Chronic bronchitis</td>
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<td>Throat clearing</td>
<td>Idiopathic pulmonary fibrosis</td>
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<td>Globus</td>
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<td>Sore throat</td>
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Causes of Chronic Cough

Postnasal drip 41%
GERD 21%
Asthma 24%
Other 14%

Other causes
• Chronic bronchitis (5%)
• Bronchiectasis (4%)
• Drug induced
• Pulmonary tumors
• Restrictive lung disease
• Postviral
• Aspiration
• Psychogenic

Causes of Chronic Cough May be Multiple

N = 88 patients with chronic cough

How GERD May Cause Pulmonary Symptoms

**REFLUX**
Gastro-esophageal reflux to the larynx or aspiration into the lower respiratory tract

**REFLEX**
Stimulate esophageal-bronchial neural cough reflex
GERD-Related Chronic Cough

• Most patients with GERD-related chronic cough have “silent reflux” without heartburn or regurgitation\(^1\)

• Character and timing of cough do not reliably distinguish GERD from other causes\(^2\)

Typical Profile of Patients with GERD-Related Chronic Cough

- No exposure to environmental irritants
- Non-smoker
- Not on angiotensin-converting enzyme inhibitor
- Normal or stable chest X-ray
- Asthma, post-nasal drip, and non-asthmatic eosinophilic bronchitis has been excluded

ACCP Evidence-Based Clinical Practice Guideline. Irwin et al. Chest 2006;129:80S-94S.
Patients with Suspected GERD-Related Chronic Cough

Empiric Antireflux Therapy

Upper Endoscopy

Ambulatory pH testing
Upper Endoscopy in Patients with Chronic Cough

- Only 16% of patients with chronic cough had mucosal complications of GERD on endoscopy
- Given its low yield, endoscopy is not recommended as part of the initial workup

Ambulatory pH Monitoring in Patients with Chronic Cough

• Results of ambulatory pH testing do not predict response to PPI therapy¹
• It is difficult to prove a causal relationship between acid reflux and chronic cough
• Given these limitations, pH testing should be reserved for non-responders to empiric PPI therapy²

Empiric Antireflux Therapy for Chronic Cough

- Empiric trial of antireflux therapy is indicated if
  - Patient meets clinical profile of GERD-related chronic cough, or
  - heartburn or regurgitation is present
- Twice daily PPI is reasonable
- Response to empiric PPI is 50-70%
- Failure of empiric trial does not rule out GERD

ACCP Evidence-Based Clinical Practice Guideline. Irwin et al. Chest 2006;129:80S-94S.
Antireflux Therapy for GERD-Related Chronic Cough

• Randomized controlled trials (RCTs) are limited; small numbers of patients

• Meta-analysis of 5 RCTs in adults with GERD-related chronic cough gave inconclusive results

Summary: GERD-Related Chronic Cough

- GERD is a common cause of chronic cough
- Causes may be multifactorial
- Heartburn and regurgitation are often absent
- Empiric PPI therapy is recommended in a patient with the proper clinical profile
- Ambulatory pH monitoring should be reserved for PPI non-responders
Case Study: Patient #3

- Patient was started on twice daily PPI therapy for 3 months
- Coughing spells improved significantly
- Subsequent, endoscopy revealed a 5-cm hiatal hernia
- His cough readily recurred when PPI was stopped
- Patient was maintained on once daily PPI therapy