PROBLEM-BASED LEARNING:
AN INTERACTIVE CASE DISCUSSION
CHILD WITH A CHRONIC COUGH

AAAAAI Annual Meeting
Workshop #1507
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ATTENDEES COPY

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DISCLOSURES:

Consultant/Advisory Board:

Merck, Genentech, Novartis, Astra-Zeneca, Aerocrine, TEVA, Alcon

Research Support:

Genentech, Novartis, Merck, Aerocrine

Honoraria (Speaker):

Astra-Zeneca, Alcon, TEVA, Merck, Novartis, Genetech, Aerocrine

Stocks/Other direct financial holdings:
None

Other Commercial Interests:

THE PBL Institute
HISTORY

Cory is a 10 year-old child who is seeing you for the first time for evaluation of “a chronic cough for many months.” His parents have accompanied him and tell you that it seemed like it all began when he developed a cold after a flu shot. However, “his cough just never seemed to get better and actually keeps getting worse.” Now his teachers have complained that it is disrupting his classes.

Initially he was treated by his primary care office with several different antibiotics & cough medications without much improvement. At a follow up visit one of the nurse practitioners gave him a fluticasone HFA inhaler 110 mcg. to take 2 puffs twice daily and OTC cetirizine 10 mg. tablets once daily which he took for 3-4 weeks without improving, so they stopped his medication. They were referred to you as the specialist since their primary care physician suspects he is “allergic to something.”
HISTORY (cont’d)

Past Medical History- He was a 6 lb. infant born full term without complications. He developed an itchy rash on his cheeks in the first few months which spread to his flexural creases for the first year of life, but has now disappeared. About 5 months of age, he developed RSV and had a bad wheezing episode for which he needed a home nebulizer and prednisolone. He coughed and wheezed intermittently the next few years mainly with colds, but the nebulized albuterol treatments usually helped within a week. He’s had no significant coughing or wheezing episodes in several years. He occasionally coughs at night, but it rarely awakens him. He complains of intermittent stomach pain not clearly associated with any specific food or time of the day.
HISTORY (cont’d)

Review of Systems- He had 5 ear infections per year the first two years, but only one in the last 6 months. He has been noted by his teachers to “cough and stop running on the playground” the last month. His parents deny noticing any frequent discolored nasal mucous, sore throats or fever. They do admit that he has had a frequent clear runny nose in the spring every year for several weeks the last three years.

Family History- His mother has seasonal hay fever and his father had frequent “croup and bronchitis” episodes when he was a child.

Social History- He lives with his mother and two older brothers in your suburban upper class area of town. He plays on several soccer teams, one basketball team and one baseball team and all he thinks about is sports. However, his cough seems to be inhibiting his abilities lately especially during competitive games.

Environmental History- They have had 2 cats since before he was born. He spends every other weekend at his father’s house, which is similar in all respects to his mother’s home. His father smokes “outside.” He sleeps on a Dacron pillow on a 9-10 year-old mattress and has 5 to 7-year-old carpeting in his bedrooms.
**PHYSICAL EXAM**

GENERAL- well appearing child in no acute distress with occasional deep barking cough noted.

VS.  HR 100   RR 14(unlabored)   T 98° F  
      HT 60% tile  WT 75%tile

EYES-normal colored conjunctivae bilaterally.

ENT- nasal mucosa was pale, slightly without rhinorrhea

LUNGS- clear to auscultation with good air exchange bilaterally. No rales or rhonchi noted. Coughing as noted.

EXTREMITIES- no clubbing, cyanosis or edema
IMPRESSIONS

1..

2.

3.

4.

OFFICE EVALUATION

1.

2.

3.

4.

5.

6.
DIAGNOSTIC EVALUATION

**Chest X-ray** - (done within the last month) was normal.

**Skin testing** - was negative to a full panel of aeroallergens.

**Pulmonary Function Testing:**

- **BASELINE:** Poor effort noted
- FEV₁ (72% of predicted)
- FVC (70% of predicted)
- FEV₁/FVC 79%
- SaO₂ 97% at rest

- **POSTBRONCHODILATOR**
  - FEV₁ (76% of predicted) 5% improvement
  - FVC (75% of predicted) 5% improvement
  - FEV₁/FVC 82%

  SaO₂ 96% at rest; no decrease after
  walking on level surface for 6 minutes
FURTHER EVALUATION

FeNO- 12

Mannitol challenge in office- Negative

4 week trial of PPI-No change in cough

Pertussis antibody and prep –Negative

Video taken with cell phone of severe coughing episode with recent soccer tournament
OBJECTIVES

1. To interactively discuss the case of a child with a chronic cough.
2. To discuss in depth the differential diagnoses of a child with a chronic cough and the appropriate diagnostic evaluation.
3. To debate therapeutic options for a child with a chronic cough