"Bring anything back from vacation?"

DALHOUSIE UNIVERSITY Inspiring Minds

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Gail's case

Gail, 55, presents to the ED with a two-week history of right-sided chest pain radiating to her back and right arm. She reports:

- chills,
- diaphoresis,
- dizziness and
- intermittent headaches.

She has nausea and a decreased appetite with no vomiting or diarrhea. She had a five-day history of fever and denied having shortness of breath or a productive cough.

History

Gail's history reveals that five weeks prior, she returned from a 10-day trip to Costa Rica. She was also a smoker. The rest of her history was non-contributory.

Examination

On examination, the following was noted:

- Febrile: temperature 39.5°C
- Tachycardic: heart rate 130 bpm
- BP: 112/50 mmHg
- Respiratory rate: 20 breaths per minute
- Chest examination: good air entry bilaterally without crackles or wheezes
- Neck: supple
- No rash or jaundice present
- Spleen: palpable

Questions

1. What should be considered in Gail's differential diagnosis?
2. What are the important signs and symptoms of tropical fever?
3. How should Gail's pneumonia be managed?

For more on Gail, turn to page 4.

Questions & Answers

1. What should be considered in Gail's differential diagnosis?

When a patient presents with a fever and relevant travel history, physicians should consider the differential diagnosis of tropical fever. In this case, the main consideration for travellers to Costa Rica would be malaria. Other causes include:

- Dengue fever (which had a recent outbreak in regions of Costa Rica in 2005)
- Chagas disease
- Hepatitis A (Table 1)

It is equally important to remember more common local causes for a patient's symptoms, which in Gail's case would include pneumonia or a viral illness. Although relevant travel-related diseases should always be considered, more common local causes of fever remain likely and should be contemplated.

2. What are the important signs and symptoms of tropical fever?

Malaria typically causes influenza-like symptoms including fevers, chills and severe headaches. Other presenting symptoms include:

- arthralgia,
- jaundice,
- abdominal pain and
- cough.

On examination, the patient may be anemic due to hemolysis and have tender hepatomegaly, as well as splenomegaly. The serious consequences of a malarial infection can include:

- Convulsions
- Coma
- Delirium
- Death

Table 1

Identified pathogens related to tropical fever in Costa Rica

Protozoal
- Malaria
- *Trypanosoma cruzi* (Chagas disease)

Viral
- Dengue fever
- Hepatitis A and B

Bacterial
- Leptospirosis
- Tick-borne relapsing fever

Gail's case cont'd...

The ED physician initially ordered:
- a complete blood count (CBC),
- malaria smear and
- chest x-ray.

Findings

The malaria smear came back negative.

The CBC showed:
- a hemoglobin of 113 g/L,
- white blood cell count of 8.4 x 10^9/L and
- platelets of 324 µl.

The chest x-ray showed right lower lobe airspace opacity compatible with pneumonia (Figures 1 and 2).

Once a definitive cause for Gail's symptoms was found, it was not felt necessary to pursue other, rarer, etiologies.

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A malaria smear should be ordered if a patient presents with any of these symptoms and has recently returned from Africa, Asia, the Middle East or Latin America. In cases where a diagnosis remains elusive, malaria smears should be repeated.

Dengue fever classically presents with a high fever, no localized site of infection, relative thrombocytopenia and leucopenia, as well as a petechial rash usually appearing three to four days after the onset of the fever. Severe muscle and joint pain often accompanies the infection, which is why it is sometimes referred to as "Breakbone Fever." A milder form of dengue fever can present without a rash and be misdiagnosed as influenza or another viral infection. A serum specimen should be collected as soon as possible (within five to six days after the onset of symptoms) for virus isolation and serologic diagnosis. In Gail's case, dengue fever was ruled unlikely as she denied having had a rash and both her white blood cell count and platelet count were within the normal range.

Chagas disease presents with a tender red bite mark, lymphadenopathy and unilateral eye swelling, accompanied by fever and malaise. Gail was not felt to have exhibited these symptoms.

3. *How should Gail's pneumonia be managed?*

The most common cause of community-acquired pneumonia is *Streptococcus pneumoniae*. Other causes include:
- *Haemophilus influenzae*,
- *Chlamydia pneumoniae*,
- *Mycoplasma pneumoniae*,
- gram-negative bacilli,
- some viruses and
- several *Legionella* species.

Staphylococcus is also a known cause, more commonly associated with hospital-acquired pneumonia.

Patients with pneumonia may present with one or more of the following:
- Pleuritic chest pain
- Shortness of breath
- Chills or night sweats
- Confusion

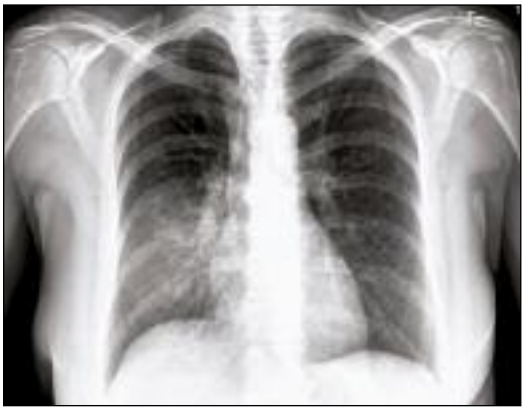

Figure 1. Posterior-anterior chest x-ray showing right-sided infiltrate.

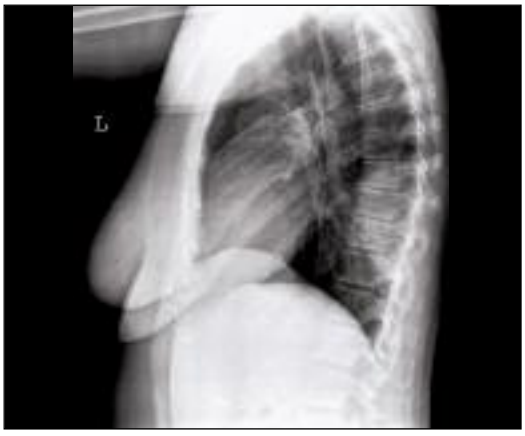

Figure 2. Lateral chest x-ray showing right lower lobe pneumonia.

- Raised respiratory rate
- Fever (> 38˚C)
- Decreased chest expansion
- Decreased air entry or crackles
- Cough with or without sputum production

Management of pneumonia requires antibiotic therapy, the choice of which will vary with severity and the patient's antibiotic history; the general rule is to avoid repeating the same class of antibiotics within three months. Fluoroquinolones are commonly used for moderate-to-severe presentations (involving hospital admission), or in patients with significant comorbidities. Community-acquired pneumonia in outpatients may be treated with:

- oral macrolides,
- doxycycline or
- amoxicillin.

Gail's pneumonia was treated with clarithromycin and her pain with narcotic analgesics. Repeat x-rays at six weeks showed radiologic resolution of her pneumonia.

4. *Points to remember*

Consider a broader differential diagnosis in the patient who has travelled to an exotic locale.

Malaria is common in many—indeed most—parts of the globe and as Canadians immigrate from these countries and explore them on vacation, physicians are increasingly likely to see it.

Remember common conditions despite a history of travel. The disease process is equally likely to be something home-grown! Dx

***This department covers selected points to avoid pitfalls and improve patient care by family physicians in the ED. Feedback can be sent to* diagnosis@sta.ca.**

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