Introduction:

Welcome to CUGH's bi-weekly clinical case-series, "Reasoning without Resources," by Prof. Gerald Paccione of the Albert Einstein College of Medicine. These teaching cases are based on Prof. Paccione's decades of teaching experience on the medical wards of Kisoro District Hospital in Uganda. They are designed for those practicing in low resource settings, Medicine and Family Medicine residents, and senior medical students interested in clinical global health. Each case is presented in two parts. First comes a case vignette (presenting symptoms, history, basic lab and physical exam findings) along with 6-10 discussion questions that direct clinical reasoning and/or highlight diagnostic issues. Two weeks later CUGH will post detailed instructors notes for the case along with a new case vignette. For a more detailed overview to this case-series and the teaching philosophy behind it, see Introduction to "Reasoning without Resources". Comments or question may be sent to Prof. Paccione at: gpaccion@montefiore.org

Note: If you would like to be notified when a new case is posted (along with instructor notes for the previous one), send your e-mail to Jillian Morgan at jmorgan@CUGH.org.

About the Author:

Dr. Gerald Paccione is a Professor of Clinical Medicine at the Albert Einstein College of Medicine in the Bronx, New York. His career has centered on medical education for the past 35 years – as a residency Program Director in Primary Care and Social Internal Medicine at Montefiore Hospital, and director of the Global Health Education Alliance at the school. He has served on the Boards of Directors of Doctors for Global Health, Doctors of the World USA, and the Global Health Education Consortium. Dr. Paccione spends about 3 months a year in Uganda working on the Medicine wards of Kisoro District Hospital where he draws examples for the case studies.

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CASE 7 – COUGH POST TB

A 31-year-old woman with AIDS for 4 years, on anti-retroviral (ARV) therapy for the last 2 years, is admitted for cough and progressive weakness for 3 months. The mother of 5 children, she was abandoned by her husband when she was diagnosed with HIV after a community-acquired pneumonia 4 years ago. Two years later she began ARV therapy because of a "low CD4 count" performed because of weight loss. Four months later she was diagnosed with active pulmonary TB after months of cough and progressive weight loss, AFB smear positive. No X-ray was done at the time.

She was started on intensive short-course therapy with RIPE (rifampin-isoniazid-pyrazinamide-ethambutol) with directly-observed therapy (DOT) to which she was fully adherent for the first month. She gained weight and energy and stopped coughing. She felt so good in fact that after a month of therapy she went to Masaka with 3 of her kids to care for her sick brother and was lost to follow-up for one month. When she returned she re-established contact with the DOT program. After 2 follow-up sputum smears were negative for AFB, she was given 4 more months of "consolidation" therapy with rifampin-INH. She continued to improve, couldn't produce sputum when the treatment ended 9 months ago, and felt fine for about 6 -7 months after completing therapy.

About three months ago she began to cough again and it's worsened over time. At first the cough was dry but recently productive of white-yellow, non-bloody sputum. At present she has no appetite, feels increasingly weak and "hot-cold", thinks she is losing weight, and over the past few days has vomited after meals (yellow, non-bloody vomitus). She feels like she did the last time she had TB.

She's adherent to her ART and septrim treatment (trimethoprim-sulfamethaxazole). Her CD4 count is not known.

Physical Exam:

- Appears tired, depressed and cachectic, with an occasional cough during exam; in no acute distress. BP: 90/65 without orthostatic change; HR 105, to 110 standing; RR 22; T: 100.5 p.o.
- HEENT: conjunctiva: no pallor or icterus; mouth: no thrush;
- Neck: without lymphadenopathy, JVP, HJR, or thyromegaly;
- Lungs: normal percussion; clear to auscultation except right lower lung field: intermittent, scant crackles half way up;
- Heart: normal S1, S2; without murmurs, rubs, gallops
- Abdomen: liver percussed 2 cm below costal margin, 10 cm span; spleen tip palpable on inspiration; no masses, tenderness; Rectal: normal tone, hard stool, guaiac negative
- Extremities: no edema, clubbing
- Neurologic: mental status, cranial nerves, motor, sensory, cerebellar, gait normal; reflexes +2;

QUESTIONS

1. What are the fundamental clinical questions posed by this patient's presentation?

2. What is the "frame" of this case (i.e. the key clinical features the final diagnosis must be consistent with?)

3. This patient completed her course of therapy and felt well for 6 months.
- **a) Was she most likely "cured" of TB at the end of her treatment?**
- **b) What is the WHO definition of TB "cure" and would she be officially classified a "cure"? If not, how would her treatment outcome be classified?**
- **c) What are the limitations of the "cure" definition, particularly in rural Africa?**

4. a. What biologic principles of TB treatment underpin the recommendations of what to do when therapy is "interrupted"?
b. What is recommended when TB treatment is "interrupted"?
c. Was this patient appropriately treated after the interruption, and why?

5. How is a recurrence of TB diagnosed in a <u>fully-resourced</u> setting? … and how is a recurrence diagnosed in <u>rural Africa</u>?

6. What are the various ways patients can develop "recurrent TB"?
How is each defined?

7. What are the risk factors for recurrent TB?

8. Besides the risk factors for relapse and re-infection, what additional clinical information about the <u>*timing* of a patient's re-presentation</u> helps determine the likely etiology of a recurrence?

9. How should this patient be evaluated and treated?
What is the presumptive diagnosis after the history and physical exam?
Explain