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 12 – FEVER III

A 17 year old boy comes to Kisoro District Hospital in November after more than a week of illness with high fevers and 2 days of increasing confusion. It's the rainy season, he works as a rice farmer and also tends some cattle and goats.

Nine days ago he began to feel "hot" and weak with severe muscle aches and low back pain, and his eyes became red. He initially took chloroquine without relief and then was given quinine tablets at the village health center 5 days ago, noticing a decrease in fever and overall improvement for about 2 days.

But then, severe muscle (especially lower legs) and back pain resumed, he felt nauseated and vomited a few times, and developed a dry cough. He urinated only once in the past 48 hours and the urine was dark. When he began to get confused and complain of headache, his family brought him to Kisoro district hospital.

Physical Exam:

Complaining of muscle and back pain, exacerbated with movement

T 101.5 axillary HR 100 BP 130/80 RR 18

skin: no rash or eschar noted
conjunctiva: red and suffused without pus; icteric, PERRLA, no photophobia
fundi: without hemorrhages, exudates, or papilledema
mouth: 2 palatal petechiae noted; no thrush
neck: +/- nuchal rigidity on flexion; no lymphadenopathy
lungs: intermittent crackles heard at the bases bilaterally, but mostly clear with good air movement and no broncho-tubular sounds
heart: PMI not displaced; S1, S2 normal, no murmurs, rubs or gallups
abdomen: non-tender RUQ and abdomen; no hepato-splenomegaly;
CVA tenderness equal bilaterally, to both deep palpation and punch (indirect, with fist hitting examiners hand over costo-vertebral angles)
neuro: tired appearing, occasionally speaks nonsense, oriented to name and place; non-focal exam with intact cranial nerves, reflexes, gross motor; muscles diffusely tender to palpation

1. **What are the key clinical features ("frame") of this case?**

2. **What three laboratory tests available in most district hospitals are indicated immediately?**
   Explain how they might be helpful in defining the problem and/or arriving at a diagnosis?

3. **What bedside test readily available in low resource areas can substitute for hematologic and chemical laboratory assessments of body fluids?**

4. **How do you interpret the following lab results?**

   Results:

   CSF: 20 WBC: 17Lymphs, 3Polies (on U/A strip, CSF fluid revealed +1 WBC (10-25/microL) Glucose +2, 3-4 mmol/L Protein +2, 100g/L)

   U/A: s.g.1.015; ++heme, ++WBC, + protein; +4 bili, +3 urobili; no nitrites; 50 rbc/hpf; 20 WBC; 2 WBC casts seen.

5. **What is the differential diagnosis in this case and the most likely diagnosis clinically? What are the clinical pros and cons for each of the possibilities?**

6. **How is this disease definitively diagnosed? In rural Africa?**

7. **What would constitute a rationale approach to empiric therapy in this case?**