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

Important note: We are developing an email distribution list of persons interested in the cases. This list will ensure that interested faculty receive timely notice of the next case and the instructor notes for the previous case, while reducing the frequency of announcements to CUGH and GHEC's full distribution lists. Please notify Jillian Morgan at jmorgan@CUGH.org if you'd like to be on the list.

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.

Gerald Paccione, MD
Professor of Clinical Medicine
Albert Einstein College of Medicine
110 East 210 St., Bronx, NY 10467
Tel: 718-920-6738
Email: gpaccion@montefiore.org

CASE 6 - COMA

A 14 year old girl, previously in normal health, is carried to the hospital unconscious. Previously in good health, the girl returned to the Kisoro highlands 4 days ago after a two week stay over Easter holidays with her mother's family in Mbarara. There she had helped in the fields during the warm, wet planting season and played with her nieces and nephews. Two days after returning, she felt weak and "hot", stayed in bed for longer than usual, and later in the day began having abdominal pain and cramps. The next day her abdominal pain was worse, she vomited a few times, and complained of headache. She had no cough. The following morning she could barely be aroused, and shortly thereafter started seizing, shaking all four extremities, urinating on herself and foaming at the mouth, and then gradually regained some consciousness over the next 30 minutes. However, by the time she was transported to the hospital an hour later, she couldn't be aroused.

Physical Exam:

Comatose, not spontaneously moving extremities, no evidence of trauma;

Vital signs: T 99.0 oral R 20 and normal depth HR 102 BP 130/72
skin: no petechiae or rash
eyes: right eyelid fine twitch
conjunctiva: no petechiae; slightly icteric, generally pale, but no rim pallor
fundi: no papilledema; right eye flame hemorrhage at 3:00
mouth normal, no thrush
neck: no nodes >1cm
resistance to movement noted in all directions
lungs: clear to percussion and auscultation
heart: PMI normal; S1, S2; Gr 2/6 systolic, crescendo-decrescendo murmur left upper sternal border without radiation
abd.: soft without guarding;
spleen tip palpable 1-2 cm below costal margin, soft;
liver non-palpable, normal span to percussion
neuro: can't be aroused to pain; can't elicit Doll's eye nor corneal reflexes
cranial nerves: grossly intact, except eyes: pupils equal, round, reactive, slight bilateral gaze deviation to right; fine ocular oscillation
motor: general increase in tone, bilaterally symmetric
hyperreflexic bilateral and symmetric

Questions:

1. **What is the *frame* of the case (the 3-4 most important clinical features that the final diagnosis must be consistent with)?**

2. **What is the significance of the following observations and exam findings:**

   - **normal T^o:**
   - **abdominal pain:**
   - **nuchal resistance:**
   - **eye exam**: **conjunctival pallor***:*

     conjunctival icterus*:*

     no conjunctival petechiae*:*

     fundus: flame hemorrhage*:*
   - **mouth: "normal": no thrush** *(HIV):*

     no palatal petechiae*:*
   - **abdomen: spleen: tip palpable***, soft:*
   - **neurologic: coma, with increased muscle tone and hyperreflexia.**

     lid twitching, gaze deviation, ocular oscillations*:*

     abnormal Doll's eyes and corneal reflexes*:*

3. **What is the differential diagnosis (with probabilities) of the underlying (primary) problem? Explain.**

4. **What is the differential diagnosis of <u>coma</u> in this patient?**
   What is/are the *most likely* cause(s) of coma in this patient?

5. **Name 4 clinically-relevant categories for the major causes of *global disturbances of cognition/behavior* (including coma), and how does one clinically differentiate among them?**

6. **What is the differential diagnosis of the *immediate cause* of the coma in *this* patient?**

7. **What tests are indicated; and what immediate therapy?**