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 15 – CAN'T WALK

A 12 year old boy is carried to the ward by his parents with a swollen, painful leg and inability to walk for 2 days.

He was in good health until 2 weeks ago when, while playing football, he was stuck in the back of the lower left leg with a sharp reed. The area began to swell 1-2 days later with pain over the site. Over the next week the swelling and pain extended up his leg, and he developed fevers and chills. Four days ago his mother took him to a local healer who pricked the skin over the area of maximal pain on the inner leg just below the knee leaving 6 small cuts. After 2 days, the skin in that area turned black, and he was unable to walk. His parents brought him to the hospital.

He had always been healthy, and had had no weight loss, pneumonias or skin problems in the past.

Physical Exam: Alert, in no acute distress, sitting in bed with his left leg externally rotated and flexed, and his left knee flexed 30 degrees, wary of anyone approaching his leg.

BP: 85/60 HR 110 T: 102.8 R: 20

HEENT: normal
Neck: normal without lymphadenopathy, thyromegaly, JVP, HJR
Lungs: clear;
Heart: normal S1, S2, without murmurs or rubs
Abdomen: no tenderness, masses or organomegaly
Extremities: right leg normal

Left leg: 2 cm diameter eschar on back of left leg above Achilles tendon (point of reed penetration), tender; probing the unroofed eschar was painful, but did not result in separation of tissue planes;

Marked increase in heat, edema and taut skin over entire left lower leg with palpation tenderness over firm belly of medial gastrocnemius muscle extending up to medial knee; no creptitus palpated; no venous distention noted;

Point of maximal tenderness around gastroc insertion medial to tibial head over an irregular ~3cm^2 area of irregular ecchymotic skin with sensation preserved;

+ Pain upper calf and medial-lower knee pain with full knee extension

+ Pain with foot dorsiflexion (Homan's sign);

Left knee: large knee and bursa effusion without tenderness to palpation or balloting or passive ROM to 45 degrees

Left groin nodes, 1-1.5 cm diameter and tender to palpation

Pulses: intact +2, equal bilaterally

1. **What is the "frame" of this case, the key clinical features the final diagnosis must be consistent with?**

2. **What is the differential diagnosis of lower leg pain, swelling and fever in this child?**

3. **What are the clues in the physical exam as to the *location* of the infection?**

4. **What are the exam indicators of the infection's *severity*?**
   Apply them to this child.

5. **a. On presentation, what would your most likely diagnosis(es) be?**
   b. What "tests" in a district hospital, could be helpful?
   c. How would you treat this patient?

6. **How common is this disease in Africa? What are its risk factors? What are the responsible organisms, its usual locations, natural history, and clinical mimics?**

7. **How is this disease treated?**