Introduction:
Welcome to the 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 4-10 discussion questions that direct clinical reasoning and/or highlight diagnostic issues. A month 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

About the Author:
I'm a Professor of Clinical Medicine at the Albert Einstein College of Medicine in the Bronx, New York, where my career has centered on medical education for the past 40 years – as a past residency Program Director in Primary Care and Social Internal Medicine at Montefiore Hospital, and global health advisor and program leader at the school. I've served on the Boards of Directors of Doctors for Global Health, Doctors of the World USA, and the Global Health Education Consortium. I spend about 3-4 months a year in Uganda working on the Medicine wards of Kisoro District Hospital which, like most hospitals in the world that serve most of the world's population, has (almost) no resources. "At the bedside", I teach Internal Medicine residents and medical students how to assimilate the elements of history, physical exam and epidemiologic probability into a diagnostic impression that, even without definitive testing, can lead to appropriate therapeutic strategies in the field.

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Case 62: Right, Left or Both?

A 43 year old woman presents with increasing fatigue and a “heart problem.”

She had been well, working in the fields until about 1-2 years ago when she noted that her heart was “pounding” and “racing” while she was climbing hills, and she had to slow down. The pounding and racing would happen predictably, coming on gradually and diminishing gradually if she stopped climbing.

Four months ago she began to develop lower extremity and abdominal swelling, increased fatigue and shortness of breath with exertion, and heart racing even at rest. She went to the local health center and was given lasix and digoxin for a “heart problem”. She has taken the medication reliably and, while noting some relief, has still been symptomatic with increasing fatigue and abdominal distention over the past 2 months.

She has delivered 4 children without problems, the last 8 years ago; recalls neither prolonged debilitating illness as a child, nor lagging behind her peers; and has had no symptoms of fever, cough, weight loss, orthopnea, paroxysmal nocturnal dyspnea (PND), or hemoptysis.

Physical Exam: Thin woman in no distress, lying flat in bed.
BP 90/60, HR 85 irregularly irregular; R 15; T 37

mouth: no thrush, petechiae, or mucosal cyanosis;
eyes: no proptosis or lid-lag
neck: + JVP, internal and external, to angle of jaw sitting upright, with cannon V waves; palpable thyroid, no goiter
lungs: clear to auscultation and percussion
cardiac: barely perceptible parasternal lift; P₂ not palpable;
  PMI: 1 cm lateral to mid-clavicular line, 2.5 cm. diameter
  split S₁ widely heard, split S₂ at pulmonic area with different, crisp and more widely-separated double sound at S₂ at the apex;
  no S₃, S₄
  2/4 decrescendo, diastolic murmur at left sternal border (LSB), low pitch,
  marked increase with inspiration to 3-4/4 with a thrill;
  2/4 low pitched diastolic rumble apex, increased with expiration;
  2/6 holosystolic murmur low-medium pitch, lower LSB, increased with inspiration
  2/6 holosystolic murmur, high-pitched, apex to axilla
abdomen: + pulsatile, tender liver; distended abdomen with + shifting dullness; no masses or spleen palpated or balloted
extremities: + 1-2 edema to knees; no fine tremors; no clubbing or nail cyanosis.
1. What is the clinical “frame” of this case from the history (i.e. the key clinical features that the final diagnosis must be consistent with), and their clinical/physiologic implications?

2. What is the differential diagnosis of significant right-sided heart failure in Uganda?

3. What is the pathophysiologic significance of the sequence of symptoms in the clinical history of this patient?

4. What is the pathophysiologic significance of the following physical exam findings?
   - irregularly irregular rhythm
   - JVP to angle jaw sitting
   - cannon waves in the JVP, and a pulsatile liver
   - barely perceptible parasternal lift
   - PMI
   - 2/6 holosystolic murmur, high-pitched, apex to axilla
   - 2/6 holosystolic low-medium pitch murmur LSB, increased with inspiration
   - Diastolic low-pitched decrescendo murmur at the lower left sternal border, markedly increased (with a thrill) with inspiration
   - 2/4 diastolic rumble at the apex, increased with expiration, and the widely-separated sharp “double sound” at S₂

5. How does the physical exam help the clinician determine the cause of right-sided heart failure in Uganda (see question #2)?
   What is the most likely etiology of this patient’s clinical presentation and how common is it?
   What “tests”, available in a district hospital, should be ordered?