



## **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](mailto: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 Katherine Unger at [kunger@CUGH.org](mailto:kunger@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 42 – Feeling 400

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A “400 year old” woman (her response when asked her age) is carried to the hospital by her daughters for a final opinion “before she dies”.

She has been deteriorating for 2 months with decreased appetite and marked weakness while still performing all activities of daily living. Although previously fully ambulatory and active, for the past 2 weeks she has not walked at all; is now soiling herself and incontinent of both urine and feces. Both urine and feces are of normal color with no blood. Her family thinks she’s lost significant weight but can’t quantify it.

On a full review of systems, “mild cough” and “tooth pain” have been present “for 1 week”, but there have been no fevers, sweats or other pains noted; no history of shortness of breath with exertion or cough. No other family members are sick.

The patient and her family are convinced of her imminent demise and are preparing for her death, but one of her 4 daughters wanted to have her “examined”. The patient herself is very upset at having been brought to the hospital.

### **Physical Exam:**

Elderly woman with marked cachexia and too weak to sit

BP 80/38; HR 62; T 36 p.o.; R 22

teeth: no pain on palpation or with tapping on her 10 remaining teeth, or gums;

mouth normal except for unremarkable mild gingivitis; no thrush

neck: no lymphadenopathy; thyroid normal; no JVP/HJR

face: no pain with percussion, palpation or pressure over sinuses

lungs: increased breath sounds with crackles diffusely throughout all lung fields bilaterally;  
left > right, upper > lower lung fields

heart: S<sub>1</sub>, S<sub>2</sub> without rubs, murmurs, or gallups

abdomen: scaphoid; loose skin; bowel sounds normal; no hepato-splenomegaly, masses, or tenderness

stool: guaiac (-), no masses

neurologic: non-focal; motor symmetric 5-/5; rectal tone normal; reflexes +2.

**1. What is the “frame” in this case (i.e. the key clinical features the final diagnosis must be consistent with?)**

- *Elderly woman*
- *marked cachexia*
- *previously well, 2 month deterioration, progressive*
- *extensive pulmonary crackles, all fields*
- *no respiratory distress*

**2. What is the *composite* clinical significance of the 3 following observations: the extent of lung exam findings, the patient’s level of distress, and the absence of respiratory difficulty by history?**

*The process is extensive, clearly involving the lung parenchyma diffusely. Given the prominence of the exam findings, they’re likely related to the chief complaint and not an exam “incidentaloma” despite the near-absence of focal symptoms. That the patient hardly recognizes any pulmonary symptoms suggests that the process is chronic and insidious.*

*Viewed differently, the crackles could be caused by edema, acute or chronic inflammatory infiltrates, or fibrosis.*

*- If the diffuse crackles were from “pulmonary edema” caused by CHF or ARDS, the patient would be in acute respiratory distress.*

*- If the crackles were from extensive and diffuse pneumonia by a pyogenic organism such as pneumococcus, the course would have also been acute, and the patient in much more respiratory distress (with manifestations of the sepsis syndrome likely).*

*- Chronic interstitial lung disease, e.g. fibrosing alveolitis, can cause the bilateral loud crackles heard here but is unlikely given the absence of shortness of breath or other prominent pulmonary complaints, and the relatively short (2 month) history of deterioration for this extent of disease.*

*Only a chronic inflammatory process, likely infectious, fits the composite presentation of history, exam, and degree of distress.*

**3. What is the likely diagnosis and how was she diagnosed and treated?**

- *Pulmonary Tuberculosis is the likely diagnosis.*
- *The patient received immediate empiric therapy and sputum for AFB was requested. In 2 days she was sitting and eating for the first time in weeks (and the sputum reported: “4 ⊕ AFB”). On the fourth day, she was walking; on the 5<sup>th</sup> day, she insisted on leaving the hospital – with DOT (Directly-observed therapy) by family for TB.*

## Case 42b

An 80 year old male is brought to Kisoro District Hospital by his sons for “stomach and back pain” for over a month. He has “felt sick” in an ill-defined way for 2 months, but comes to the hospital now for “burning fire” pain around right lateral rib cage increasing over the past month, exacerbated by breathing deeply. On direct questioning, his sons say he has lost some weight, “maybe 1 kilogram”. The patient has not noted fevers, sweats, cough or shortness of breath; there’s no history of loss of consciousness, change in color of stool or urine, blood in the stool or black stools, and he does not drink alcohol.

### Physical Exam:

Extremely cachectic and weak, lying flat, with an occasional cough during the exam (which he denies having even when asked immediately following a cough)

BP 80/60      HR 70      R 22, shallow      T 35

conjunctiva: no icterus or pallor

fundi: normal;

mouth: no thrush;

neck: no nodes, thyroid normal; no JVP/HJR elevation

lungs: clear to auscultation and percussion, no pleural rubs elicited with patient sitting, leaning forward, leaning to the sides;

chest wall: palpation of right ribs laterally elicits pain and wincing, over about a hand-size area without specific point tenderness

no pain elicited in the area of tenderness by simultaneous bimanual compression of spine and sternum

cor: S<sub>1</sub>, S<sub>2</sub> normal, no murmurs or rubs

abd: scaphoid; no hepato-splenomegaly or masses; guaiac negative

extremities: no edema or clubbing

neurologic: cranial nerves, sensory, motor, reflexes, cerebellar – normal, without focality

**1. What is the “frame” of this case (i.e. the key clinical features the final diagnosis must be consistent with)?**

- 80 year old with “failure to thrive” and marked cachexia
- right lateral chest pain, worse with breathing and palpation
- No point tenderness, or pain with spine-sternum compression
- Clear lungs
- “Cough” witnessed but denied

## 2. What is the significance of the “cough”, witnessed but denied, during the exam?

*Words and concepts can be interpreted differently even among people from the same culture, and certainly between people from different cultures through translation. “Cough” is common and usually translates reliably, but there was probably a difference of degree, effort, sensation or sputum between this patient’s concept of “cough” and the examiners that made his dry “glottic catch” fall short of “cough”.*

*Observing what he didn’t and we did consider to be “cough” was extremely valuable since it allowed pulmonary processes, made somewhat less likely with the normal lung exam, to remain high on the differential despite his denial. It also suggested that the process in the lung causing the cough was chronic and insidious - either related to the underlying problem, or independent of it.*

## 3. What general pathologies - in which tissues - are potential causes of this patient’s clinical presentation of “burning fire” around his chest?

*The pathology - located in tissue affected by movement - is likely to be either:*

- *Inflammation: chronic pulmonary infection abutting the pleura (e.g. tuberculosis, anaerobic/aerobic empyema)*
- *Cancer of unknown origin, metastatic to ribs and/or pleura; ?pathologic fracture*

*Pathology in the ribs, muscles or pleura can cause pain with movement and breathing.*

## 4. How does the physical exam focus the differential diagnosis in this case?

*The exam, without point tenderness over the ribs or pain triggered by bending the rib cage during sternum-spine compression (indirectly squeezing the “bellows” at a distance from the suspected area of tenderness), suggests that this is NOT a pathologic rib fracture.*

*Thus palpation points away from a skeletal etiology, and towards a more diffuse area of inflammation irritated by movement – such as the pleura.*

*However, all attempts to hear a focal pleural rub were unsuccessful, i.e. putting the patient in multiple positions and listening carefully during respiration with the stethoscope over the region of tenderness.*

*Also, the lungs, the source of most infectious pleural inflammation, were clear, and the patient was afebrile on admission.*

*The admission P.E. heightened the importance of daily follow-up exams, and lowered the threshold to send the patient for a chest x-ray many miles away (the X-ray at the hospital was “down” for over a month).*

**5. What diagnostic strategy/sequence is appropriate in Kisoro?**

- *AFB smear (but the patient was producing no sputum)*
- *monitor for fever, change in lung exam, cough. (On 3<sup>rd</sup> day, an axillary temperature of 38.1 was noted (temps were being taken 3x/day); a weak dry cough was persistently observed, though patient continued to deny having a cough; lungs remained clear)*
- *ESR was performed: 130*
- *CXR on day 3: a vague infiltrate on the right side with an air bronchogram*
- *Although the team strongly doubted a pyogenic pneumonia, a therapeutic trial of antibiotics (ampicillin) was started on admission as an additional diagnostic test. There was no response in cough or patient well-being after 3-4 days.*

**6. What is the most likely diagnosis, and what made the diagnosis “definitive”? Why was weight loss not a significant symptom of disease noted by the family?**

- ***Tuberculosis***  
*The patient was started on empiric therapy for sputum negative TB: the pain decreased, and his appetite and strength improved. After 3 days of therapy, patient said he felt “better”, his sons agreed with the improvement, and on the 4<sup>th</sup> day he was able to walk unassisted for first time in weeks. The previously observed and consistent weak dry cough disappeared the by 5<sup>th</sup> day.*
- *This is a classic case of geriatric TB presenting insidiously with vague symptoms, no “hard” signs, mainly just failure to thrive - and “definitively diagnosed” by response to therapy. Of note, cough was mild and chronic, such that the patient “denied” cough despite it being frequent enough to be observed during the physical exam and thereafter, and the pulmonary exam was normal. The diffuse pain and cough pointed to the pleura/lungs, and the x-ray revealed an infiltrate. The response to TB treatment was clear-cut.*
- *Weight loss was not a symptom readily recognized by the family, and only on direct questioning did they agree to “maybe 1 kilogram”. The recognition of weight loss or other constitutional symptoms of chronic disease must take into account what people are used to. In Africa, where malnutrition is rampant (even in adults and particularly in the elderly), this can mean that additional weight loss isn’t recognized. It also implies that prognostic scoring systems that base disease progression on symptoms, like the WHO clinical staging for AIDS (which documents faster AIDS progression in Africa), is confounded by the frequency of the same constitutional symptoms in the general population, in HIV (-) patients as well (BMJ 2002; 324:193).*

*TB is a much more challenging disease to diagnose in the elderly than in younger patients. Aging results in impaired immunologic defenses that are conducive to both reactivation of old tuberculous infections (15-30% of once-infected patients are thought to still harbor live TB bacilli, the rest having out-lived their infection) and to re-infection with new strains in endemic areas. In the elderly, it takes less to cause disease and disability, co-morbidities blur the onset of illness, and symptoms are less specific. Thus in one study from British Columbia (N.B. in Western patients with access to care) (Chest, 1994), TB in the elderly manifested less frequently with fever (22 vs. 36%), night sweats (16 vs. 33%) or hemoptysis (6 vs. 20%). In Hong Kong (Tuber.LungDis 1995), non-specific symptoms dominated, seen in 25-30% of the elderly, vs. 1% of patients younger than 65 years, despite pulmonary disease being more frequently extensive at presentation, 17 vs. 2%.*

*As in the two cases presented here, the pulmonary physical exam in the elderly with TB can be anything, or nothing (!), consistent with both the lower threshold for illness to become debilitating in the elderly and the more extensive disease often found by the time care is accessed.*

*The spectrum of exam findings we've picked up in patients with TB include:*

- a) Clear lungs (cough, or failure to thrive only)*
- b) Diffuse crackles (loud)*
- c) Trace focal crackles (no change with cough)*
- d) Broncho-tubular or amphoric breath sounds only, no crackles*
- e) Pleural rub: Inspiratory/expiratory, close to the ear*
- f) Dullness of pleural effusion*

*The chest x-ray in the elderly with TB is also often atypical. Studies from South Africa revealed far less frequent isolated apical opacification of post-primary TB (7%); 50% have mid-basal infiltrates and the remainder have multiple segments involved. Cavities are seen in a third, half in the mid-lower zones; and basal pleural reactions or effusions, more consistent with primary TB, are seen in 50%. (Thorax 1990).*

*In many ways, the presentation of tuberculosis in the elderly mimics that of TB in (another) immune-compromised state, HIV.*

*While perhaps extreme, it also suggests that an elderly person failing to thrive or "withering away" over a period of weeks or months shouldn't be "allowed to die" without an empiric trial of TB medications.*

### **Suggested Readings:**

Stead, W.W., Dutt, A.K., Tuberculosis in Elderly Persons Annu. Rev. Med. 1991.42:267-76  
Korzeniewska-Kosela, M., et.al., Tuberculosis in Young Adults and the Elderly : A Prospective Comparison Study Chest 1994;106:28-32  
Morris, CDW, Pulmonary tuberculosis in the elderly: a different disease? Thorax 1990;45:912-913

Chan, C.H.S., et.al The effect of age on the presentation of patients with tuberculosis Tubercle and Lung Disease (1995) 76, 290-294

