“Tut, man, one fire burns out another's burning,
One pain is lessen'd by another's anguish”

Shakespeare, Romeo & Juliet, Act 1 Scene 2

Prof. Lorenzo DAGNA, MD FACP FEFIM
San Raffaele Scientific Institute
Vita-Salute San Raffaele University

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OSPEDALE SAN RAFFAELE

Università Vita-Salute
San Raffaele

Clinical case

- M, 64 yo

- 2-month history of pain in his neck, shoulders and pelvis girdle
- Symptoms become more intense and severe over time.
- The pain was reported to diminish with mobility, but no change was reported while resting.
- The pain was accompanied by morning stiffness which continued until afternoon.
- Poor/minimal response to paracetamol, non-steroidal anti-inflammatory drugs, muscle relaxants, transcutaneous electrical stimulation or tramadol.

Clinical case

- ROS: no symptoms relating to his cardiopulmonary, gastrointestinal and genitourinary systems.

- No recent trauma, arthralgia, arthritis

Clinical case

- No headache, mandibular claudication or visual problems.

Past medical history

- About 5 months before admission the patient had intermittent fever episodes and weight loss of 3 kg in 3 months.
- Hospitalized elsewhere and diagnosed with Brucellosis. An empiric antibiotic treatment was started (doxycycline 100 bid x 6 wk + gentamycin 5 mg/kg iv x 7 days)
- As a result, his fever episodes did not recur.

Past medical history

- The patient was on regular medication for hypertension (losartan) and hypercholesterolemia (atorvastatin)

- Active smoker (52 PY), drinks socially

Physical examination

- T 37.2 °C, BP 120/80 mmHg, HR 84/min.
- HEENT: Examination revealed no pallor, no icterus, no lymphadenopathy. Mild erythema of posterior pharynx, otherwise moist mucous membranes.
- HEART: S1 and S2 present. No murmurs or gallop
- LUNGS: Bilaterally clear to auscultation.
- CHEST: Normal respiratory sound
- ABDOMEN: Nontender, nondistended, soft, no tenderness. Normal bowel sounds
- NEUROLOGIC: No focal neurological deficits.
- EXTREMITIES: Peripheral examination revealed no pedal edema. Peripheral pulses were 2+.

- MUSCOLOSKELETAL: neck and waist movements were painful and restricted in all directions due to pain. His pain was further accompanied by paravertebral muscle spasms. No tenderness at palpation of spinous processes. Upper and lower extremity joint movements were free of pain and restriction No arthritis found. Test results for nerve stretching were negative.

Lab results

- Hb 11.6 d/dL, HCT 33.6%, WBC 10,100 (DC normal), Plt 456
- Creatinine 0.9 mg/dL, BUN 20 mg/dL
- AST 34, ALT 27, GGT 55, ALP 80, CK 102
- ESR: 69 mm/h (Westergren method)
- CRP: 109.1 mg/L.
- Protein electrophoresis mild hypergammaglob (19.2%)
- Thyroid function tests: normal
- Urinalysis: normal
- PSA: 1.03
- Serology for Brucella and Salmonella: negative.
- Quantiferon: negative

Other studies

- ECG: SR, nonspecific alteration of repolarization
- Chest X-ray: no pathologic abnormality.
- Cervical XR (AP and LL): degenerative changes,
- Lumbar XR (AP and LL): loss of height in the first and second lumbar vertebral bodies.
- Cervical and lumbar spine MRI: compression fractures of L1 and L2 vertebra without any edematous changes; diffuse spondyloarthrosis and spinal stenosis at multiple levels.
- WB bone scintigraphy: increased focal intake and retention of Tc in the right parietal cranium, lower thoracic and lumbar vertebral bodies and left knee.
- Cranium and knee XR: no pathological finding.
- DXA: bone mineral density within normal ranges.

When the patient's history was examined further, it was learned that he had fallen from a tree in the past, which explained the underlying cause of compression fractures.

Polymyalgia Rheumatica classification criteria

Hunder et al., 1990

- Age > 50 yr
- ESR > 40 mm/h
- Bilateral aching and stiffness>1 month involving at least two of the following areas: neck or torso, shoulders or proximal regions of arms, hips or proximal regions of thights
- Exclusion of other diagnoses causing ‘secondary’ PMR

Required: all

Bird / Wood, 1979

- bilateral shoulder pain and/or stiffness
- age >65 years
- ESR >40 mm/hr
- bilateral upper arm tenderness
- morning stiffness >1 hour
- onset of illness within two weeks
- depression or weight loss or both

Required: 3 / 7

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Polymyalgia Rheumatica classification criteria

Jones / Hazelmann, 1981

- ESR > 30 mm/hr or CRP > 60 mg/L
- Bilateral pelvic or scapular girdle pain
- Exclusion of other rheumatological disease
- Morning stiffness > 1 hr
- Quick response to corticosteroid treatment

Required: all

Healey, 1984

- age > 50 years
- ESR > 40 mm/hr
- Bilateral aching and stiffnessinvolving at least two of the following areas: neck, scapular girdle or pelvic girdle
- morning stiffness >1 hour
- Exclusion of other rheumatological disease
- Quick response to corticosteroid treatment (< 20 PDN equivalent daily)

Required: all

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Required: all

Polymyalgia Rheumatica classification criteria

ACR/ EULAR 2012 without US

- Morning stiffness duration >45 min ***- 2 points***
- Hip pain or limited range of motion ***- 1 point***
- Absence of RF or ACPA - ***2 points***
- Absence of other joint involvement ***– 1 point***

Required: 4 or more points

ACR/ EULAR 2012 with US

Previous plus:

- At least one shoulder with subdeltoid bursitis and/or biceps tenosynovitis and/or glenohumeral synovitis (either posterior or axillary) and at least one hip with synovitis and/or trochanteric bursitis ***– 1 point***
- Both shoulders with subdeltoid bursitis, biceps tenosynovitis or glenohumeral synovitis ***- 1 point***

Required: 5 or more points

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- Both shoulders with subdeltoid bursitis, biceps tenosynovitis or glenohumeral synovitis ***- 1 point***

Required: 5 or more points

Clinical case

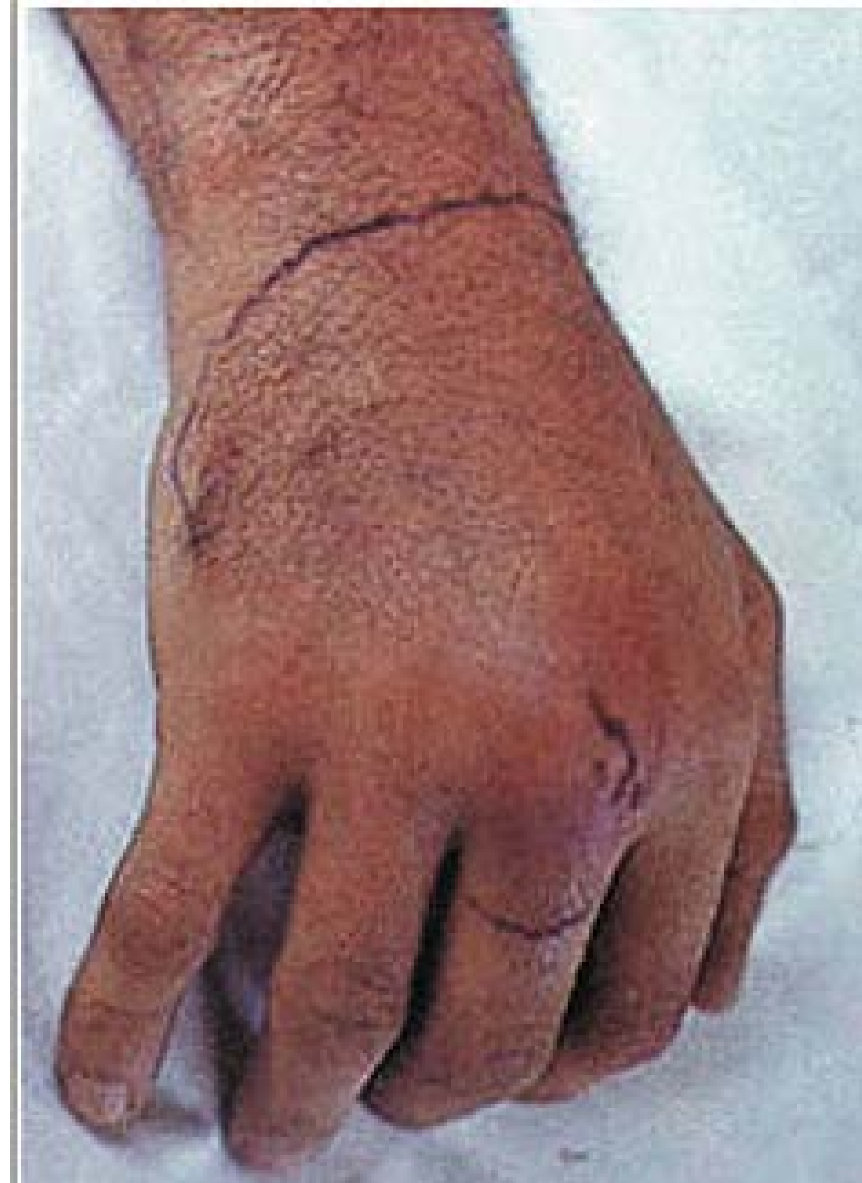
- A working diagnosis of polymyalgia rheumatica was made
- Prednisone 15 mg daily was started

Clinical case

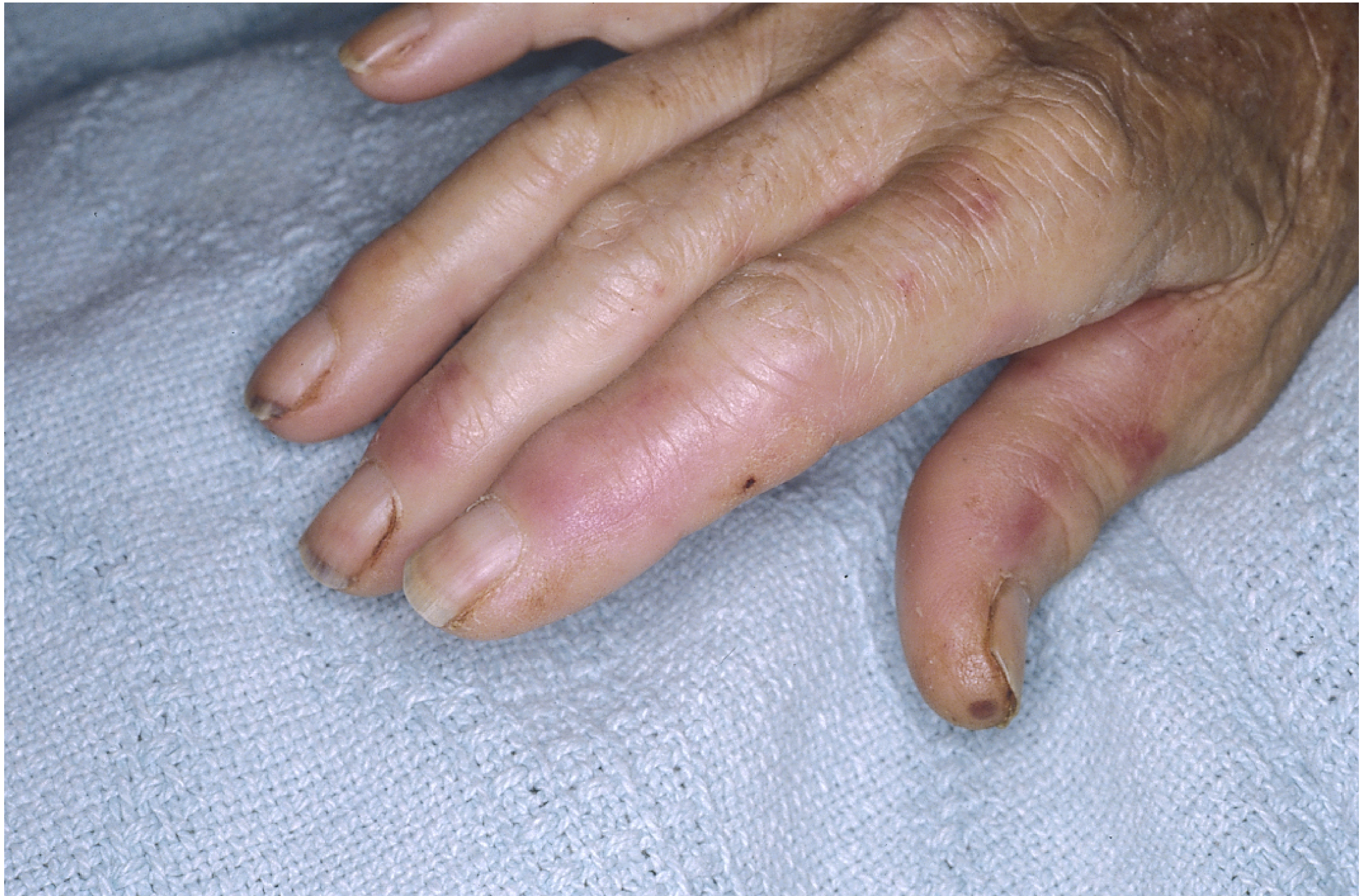
After 3 days:

- Not significant improvement of pain
- Pain, redness and swelling of right wrist
- Fever 37.8°C

Clinical case



Clinical case



Lab studies

- Rheumatoid factor: 89 IU/mL
  (normal range, 0-20)

- anti-CCP: 38 U/ml (negative, < 20)

EULAR / ACR 2010 Classification Criteria for RA

Condition	Points
Joint involvement	
- 1 large joint	0
- 2-10 large joints	1
- 1-3 small joints (w or w/out large)	2
- 4-10 small joints (w or w/out large)	3
- > 10 joints (at least one small)	5
Serology	
- RF neg / ACPA neg	0
- Low-positive RF and/or ACPA	2
- High-positive RF and/or ACPA	3
Acute phase reactants	
- Normal CRP / ESR	0
- Elevated CRP and/or ESR	1
Duration of symtpoms	
< 6 wks	0
> = 6 wks	1

At least 6 points, have at least 1 joint with definite clinical synovitis (swelling), with the synovitis not better explained by another disease

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At least 6 points (must have at least 1 joint with definite clinical synovitis (swelling), with the synovitis not better explained by another disease)

Clinical case

- A diagnosis of rheumatoid arthritis was made
- Prednisone was increased to 25 mg daily
- Methotrexate 7.5 → 15 mg/week was started

Clinical cases

- Mistakes ?

- Suggestions?

Clinical case

- A diagnosis of rheumatoid arthritis was made
- Prednisone was increased to 25 mg daily
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Clinical case

- Patient pain improved
- Wrist still swollen, less painful
- Fever disappeared

Five days later

- Fever developed again (38.5°C) with rigors
- CRP 160 mg/L
- WBC 15,000 (N82%), Hb 9.8 MCV 81.0, Plt 460

Joint aspiration

- Purulent
- Gram positive cocci

Blood cultures

- 3 / 3 positive for viridans Streptococci

Other tests

- TT Echocardiography: mitral valve insufficiency with bacterial vegetations
- Ophthalmological evaluation: signs of retinal embolism
- CE CT scan of the head: normal

Modified Duke's criteria for IE

Major diagnostic criteria
Positive blood culture for typical Infective Endocarditis organisms (strep viridans or bovis, HACEK, staph aureus without other primary site, enterococcus), from 2 separate blood cultures or 2 positive cultures from samples drawn > 12 hours apart, or 3 or a majority of 4 separate cultures of blood (first and last sample drawn 1 hour apart)
Echocardiogram with oscillating intracardiac mass on valve or supporting structures, in the path of regurgitant jets, or on implanted material in the absence of an alternative anatomic explanation, or abscess, or new partial dehiscence of prosthetic valve or new valvular regurgitation
Minor diagnostic criteria
Predisposing heart condition or intravenous drug use
Temp > 38.0° C (100.4° F)
Vascular phenomena: arterial emboli, pulmonary infarcts, mycotic aneurysms, intracranial bleed, conjunctival hemorrhages, Janeway lesions
Immunologic phenomena: glomerulonephritis, Osler nodes, Roth spots, rheumatoid factor
Microbiological evidence: positive blood culture but does not meet a major criterion as noted above or serological evidence of active infection with organism consistent with endocarditis (excluding coag neg staph, and other common contaminants)
Echocardiographic findings: consistent with endocarditis but do not meet a major criterion as noted above

Modified Duke's criteria for IE

Diagnosis of IE if

- 2 Major Criteria
- 1 Major Criteria and 3 Minor Criteria
- 0 Major Criteria and 5 Minor Criteria

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Clinical case

- Penicillin-sensitive *Streptococcus viridans*

- Started treatment with:

  - ceftriaxone 2 gr day iv/im x 4 wks

    plus

  - gentamicin 3 mg/kg q24h iv x 2 wks