RhAPP

RHEUMATOLOGY ADVANCED PRACTICE PROVIDERS

4th Annual National Conference

September 21–23, 2023

Workup of Joint Pain

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Faculty Disclosures

- Brittany Sedlacek, PA-C
  - There are no relevant financial relationships to disclose.
- Sarah Wilmsmeyer, PA-C
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Learning Objectives

1. Formulate a broad differential diagnosis for a patient with joint pain
2. Review pertinent aspects of the rheumatologic history and physical
3. List diagnostic tests which are relevant to the joint pain workup

Step 1: Differential Diagnosis

- Autoimmune/inflammatory
- Infectious
- Mechanical/other

DDx: Autoimmune/Inflammatory

- Rheumatoid arthritis
- Lupus/sjogren's
- Enteropathic arthritis
- Psoriatic arthritis
- Ankylosing spondylitis
- Reactive arthritis
- Gout
- CPPD
- Vasculitis
- Sarcoidosis
- Polymyalgia rheumatica
- Systemic sclerosis

Ddx: Infectious

Viral

- Hepatitis B/C
- EBV
- CMV
- Parvo
- HIV
- Rubella

Bacterial

- Lyme and other tick-borne
- Gonococcal
- Strep/staph
- E.coli
- Syphilis
- Mycobacterial

Ddx: Other

- Mechanical
  - overuse, strain/sprain
  - trauma
  - osteoarthritis
- Fibromyalgia
- Hypermobility
- Hemochromatosis
- Paraneoplastic syndrome

Step 2: Obtain History - OPQRST

Onset - when did the pain start?

< or > 6 weeks helps narrow ddx

Sudden or gradual?

Which joint(s) involved? change over time?

Step 2: Obtain History - OPQRST

Provocative/Palliative Factors

- Better or worse with rest/activity
- Ice/heat
- Any meds tried? Otc, Rx

Step 2: Obtain History - OPQRST

Quality - what does it feel like?

dull, sharp, achy

Radiation - does the pain radiate to other areas?

Severity - pain on 1-10 scale

Timing

better in AM/PM

presence and duration of AM stiffness

History

Other relevant details:

- warmth, erythema, subjective swelling
- fevers or preceding infections
- constitutional symptoms: fatigue, weight loss
- hx travel
- hx tick bites
- cough, dyspnea
- CTD symptoms: rashes, oral ulcers, raynauds, pleurisy, photosensitivity

History

Additional info:

- dry eyes, dry mouth
- bowel symptoms (IBD?)
- genitourinary sx (think reactive arthritis)
- other comorbid autoimmune diseases
- hx injuries/surgeries of joints
- FH autoimmune or other arthritis
- Social hx: smoking, IV drug use
- any prior workup?

Step 3: Physical Exam

Musculoskeletal Exam:

- Examine peripheral joints (MCPs, PIPs, DIPs, wrists, elbows, shoulders, hips, knees, ankles, mtps)
- Axial joints: cervical, thoracic, lumbar spine, SI joints
- Inspect for visible swelling, redness, nodules, dactylitis
  - Deformities: Bouchards, Heberdens, swan neck, boutonniere, ulnar deviation, subluxation

Physical Exam - Musculoskeletal

- Palpate for tenderness, swelling, effusion, warmth
- Check passive and active range of motion (incl. spine)
  - Fist closure
  - Joint contractures?
  - Hypermobility?
- Muscle strength testing
  - note intrinsic hand muscle atrophy in long-standing RA
  - proximal muscle weakness in myositis/steroid myopathy

Physical Exam - Musculoskeletal

- Assess other soft tissue structures such as bursae, tendons, ligaments as applicable
  - tenosynovitis, bursitis, ligament laxity
  - dactylitis, enthesitis (spondyloarthropathies)
- Check fibromyalgia tender points, if applicable
- Note gait abnormalities (due to pain, weakness, instability?)

Physical Exam - Comprehensive

Skin

- Rashes (malar, photodistribution, psoriasis?)
- Ulcerations (vasculitic? raynauds?)
- Nodules, tophi (gout)
- Nail changes (psoriasis)

Eyes

- Examine for redness (scleritis, episcleritis)

Physical Exam - Comprehensive

Heart

- Heart sounds, murmurs
- Rate/rhythm
- Pericardial friction rub (RA can cause pericarditis)

Lungs

- Crackles (interstitial disease/fibrosis)
- Diminished breath sounds, dullness to percussion (pleural effusion)

Physical Exam - Comprehensive

Abdomen

- Bowel sounds, tenderness
- Hepatosplenomegaly (malignancy, Felty's syndrome)

Neuro

- Strength testing, reflexes
- Tinel's (CTS entrapment neuropathy common in RA)
- Reduced skin sensation in extremities (peripheral neuropathy)
- Mononeuritis multiplex (sensory and motor deficits)

Physical Exam - Comprehensive

Mouth/nose

- Aphthous ulcers
- Mucosal dryness
- Pharynx erythema/exudate (recent infection?)

Lymph nodes

- At least check cervical nodes, consider axillary/inguinal
- Enlarged nodes can be seen with autoimmune disease, recent infections, or malignancy (inc. risk of lymphoma)

Step 4: Diagnostic Testing

Laboratory Tests:

- CBC, CMP
- CRP, ESR
- RF, CCP, 14.3.3 eta
- ANA and ANA profile
- Complements
- UA with micro (+/- cx), protein/creatinine ratio
- HLA-B27
- Uric acid

Diagnostics: Labs

- TSH
- Viral serologies
- Iron studies
- Lyme/tick-borne illness panel
- ANCA, MPO/PR3
- Complements
- ASO titer
- Blood cultures
- ACE level

Diagnostics: Labs

Joint Fluid Analysis:

- cell count/diff
- gram stain
- cultures
- crystals

Diagnostics: Radiology

Xrays (hands, feet, SI joints?)

Ultrasound

MRI

CT

Arthrogram

M.L. 26 y/o female

26 year old female

CC: “All of my joints hurt and I’m fatigued”

HPI: Transfer of care from out of state. 4 year history of previously diagnosed RA, though full records were unavailable at the time of consultation. Previously tried and failed hydroxychloroquine and methotrexate due to poor tolerability. Currently on prednisone 10mg daily which is helpful but has persistent hand, shoulder, knee and foot pain. 4-5 hours of AM stiffness daily. Also has had 10 pound unintentional weight loss, significant fatigue and intermittent SOB.

PMH: Unremarkable

PSH: None

ROS: Positive for fatigue, weight loss, dyspnea, muscle weakness, joint pain, swelling and stiffness.

Negative for rash, mouth sores, fevers, IBD or inflammatory eye disease

Social: Recently moved to Alaska to be with family. Single. Unemployed. Rarely drinks alcohol. Denies tobacco or illicit drug use.

M.L.

Hand Pain

- Describes as constant, dull, and achy.
- Always symmetric
- Unable to fully extend fingers or make a fist secondary to pain
- Worst in MCPs and PIPs
- 4-5 hours of morning stiffness daily

Knee and Shoulder Pain

- Symmetric
- Palindromic, changes daily
- Stiffness typically matches hand stiffness
- Occasional knee effusions

M.L. Physical Exam

Physical Exam

GENERAL: Well-developed, slender female in no acute distress

HEENT: Head was normocephalic and atraumatic without alopecia. PERRLA. EOMI. No dry eyes. No conjunctival erythema. Nares patent without lesions. Oromucosa moist with tongue and uvula midline. No mouth sores.

NECK: Neck was supple without masses. No lymphadenopathy. No thyromegaly.

LUNGS: Lungs clear to auscultation. No wheezes.

CARDIOVASCULAR: Heart with RRR. No MRG.

ABDOMEN: Abdomen soft with positive bowel tones throughout. No hepatosplenomegaly.

SKIN: Skin is without rash or lesions. No malar or heliotrope rash. No Raynaud's phenomenon. No pitting of the nails noted.

EXTREMITIES: Upper and lower extremities were warm and well perfused without clubbing, cyanosis, or edema. MUSCULOSKELETAL: Notable enlargement of the bilateral second and third MCP joints, without synovitis. Subluxation of the bilateral third and fourth DIP joints. Mild swelling of the bilateral wrists. Unable to make fist. Otherwise, the joints of the bilateral shoulders, elbows, wrists, hands, knees, ankles, feet were examined and were without tenderness, increased warmth, swelling, or decreased range of motion. No pain to palpation of the plantar fascia or Achilles tendons.

NEUROLOGIC: Cranial nerves II through XII are grossly intact. Skin sensation grossly intact to light touch in the uppers and lowers bilaterally. Gait and station were functional.

M.L. Diagnostic Workup

Labs:

RF<14 (negative <14)

CCP 18 (negative <20)

ANA IFA +1:1280. Nuclear, speckled.

SSA >8.0 (negative <8.0)

Smith antibody 6.4 (normal <1.0)

Chromatin antibody >8.0 (normal <1.0)

RNP antibody 2.2 (normal <1.0)

dsDNA 224 (normal <10).

SSA, Centromere B, SCL 70 antibodies negative.

Negative hepatitis and QuantiFERON gold.

CBC normal except for WBC 2.9, MCV 79.6, MCH 25.6, absolute lymphocytes 435, absolute monocytes 70.

CMP normal except albumin 3.4, globulin 4.7.

ESR 104 (normal <20)

CRP 10.4 mg/L (normal <8)

IMAGING:

X-rays 1/2020 normal of hands and feet

M.L.

Differential Diagnosis:

- Seronegative RA
- Systemic Lupus

M.L. Diagnosis

Systemic Lupus Erythematosus

This patient was previously misdiagnosed with RA!

She was referred for renal biopsy which revealed class IV lupus nephritis with significant activity. She was given pulse dose steroids and started on CellCept. She later transitioned to Benlysta and has done very well.

J.F. 41 y/o male

41 year old male

CC: “All of my joints hurt and my muscles feel weak”

HPI: Transfer of care from rural Alaska. 11 year history of previously diagnosed RA. Previously tried and failed methotrexate due to poor tolerability. Currently on diclofenac 50mg BID which is mildly helpful. Pain is worst in hands, wrists, knees, feet. Denies morning stiffness. Most problematic issue is increasing muscle weakness, fatigue, low stamina. Has difficulty getting up from sitting due to weakness. He also notes a new rash on his hands x 2 months. In that time, he has developed a dry cough, difficulty swallowing, night sweats, fever, chills, and weight loss.

PMH: Rheumatoid arthritis, migraine headaches, hypertension

PSH: None

ROS: Positive for fatigue, weight loss, dyspnea, muscle weakness, joint pain, dysphagia, fever, chills, weight loss, rash.

Negative for cough, mouth sores, IBD or inflammatory eye disease

Social: Married, 4 children. Denies tobacco or illicit drug use. Drinks ~10 alcoholic beverages/week. Works as a heavy machinery operator.

J.F. Physical Exam

GENERAL: Well-developed, well-nourished male in NAD.

HEENT: Head was normocephalic and atraumatic without alopecia. **PERRLA**. EOMI. No dry eyes. No conjunctival erythema. Nares patent without lesions. Oromucosa moist with tongue and uvula midline. No mouth sores.

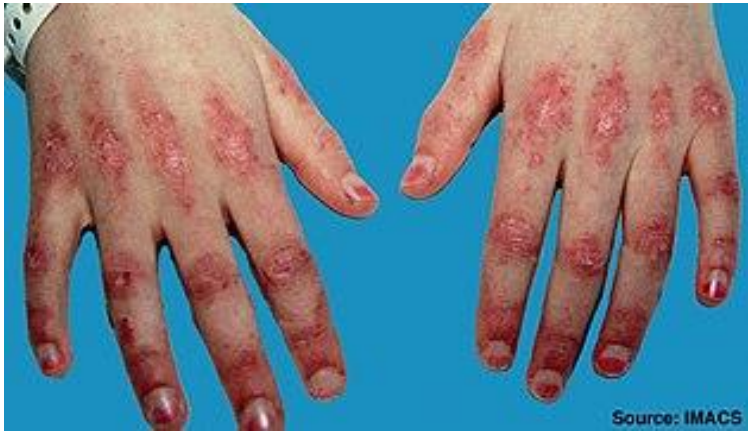
NECK: Neck was supple without masses. No lymphadenopathy. No thyromegaly.

LUNGS: Lungs clear to auscultation. No wheezes.

CARDIOVASCULAR: Heart with RRR. No MRG.

ABDOMEN: Abdomen soft with positive bowel tones throughout. No hepatosplenomegaly.

SKIN: Violaceous rash over his right first and second MCP and left second and third joints consistent with Gottron's papules. He has a similar appearing rash scattered at multiple PIP joints. There is a erythematous, flaky rash over his right elbow. No malar or heliotrope rash. No shawl sign. No Raynaud's phenomenon. No pitting of the nails noted.



Gottron’s papules

Physical Exam continued

EXTREMITIES: Upper and lower extremities were warm and well perfused without clubbing or cyanosis. There is +1 pitting edema in his right forearm and right lower extremity. Musculature appears grossly normal.

MUSCULOSKELETAL: There is synovitis of the bilateral 3rd MCP joints with swelling at the first and second MCP joints bilaterally. There is minimal tenderness with palpation through the hands. Diffuse swelling through the right hand, wrist, and forearm. Wrists have little to no flexion and extension. Crepitus and limited range of motion noted with right ulnar deviation. Bilateral elbow flexion contractures. There is warmth to palpation in the bilateral knees with mild swelling of the both knees, right >left. The joints of the bilateral shoulders, elbows, knees, ankles, feet were examined and were without tenderness, increased warmth, swelling, or decreased range of motion. No pain to palpation of the plantar fascia or Achilles tendons.

NEUROLOGIC: Cranial nerves II through XII are grossly intact. Skin sensation grossly intact to light touch in the uppers and lowers bilaterally. Gait and station were functional. Muscle strength testing was normal in all muscle groups except for the bilateral hip flexors and bilateral deltoids which were 4/5. He was able to get out of the chair without difficulty.

J.F. Diagnostic Workup

LABS: 1/2018

CBC normal

CMP normal except AST 264 (normal 10-40) and ALT 321 (normal 9-46)

ESR 25 (normal <15)

CRP 21.3 (normal <8.0)

Ferritin 469 (normal 20-380)

CPK 5911 (normal 44-196).

Aldolase >150.0 (normal <8.1).

ANA by IFA negative.

RF 200 (normal <14).

Anti-CCP antibody 20 (normal <20).

QuantiFERON Gold negative.

IMAGING:

X-rays 1/2018:

Bilateral feet: Joint space narrowing across the MTP joints bilaterally. Erosive disease of the MTPs, worst at the right 3rd, right 5th, left 3rd, and left 5th MTPs. Subtle bony irregularities at the right first MTP also noted. Degenerative changes were noted of the midfoot right >left.

Bilateral Hands: Joint space narrowing of the MCP and PIP joints. Erosive changes at the left second MCP and right second, third, and fourth MCPs. Severe, bilateral carpus joint space narrowing, erosion, and ankylosis was seen. Specifically, right radial ulnar articulation erosions and degeneration is seen.

J.F Workup continued:

Labs 2/2018: JO-1 > 8.0 (normal <1.0). EJ, KU, MI 2, OJ, PL12, PL 7, and SRP antibodies were negative.

MRI bilateral thighs 1/2018: Diffuse musculature patchy multifocal edema without evidence of focal abscess or other significant abnormality. Findings are consistent with inflammatory myopathy such as dermatomyositis or polymyositis.

EMG lower extremity 2/2018: IMPRESSION: 1. Abnormal studies. Findings consistent with an inflammatory myopathy. 2. No finding of a polyneuropathy, nor other neuropathic disorder.

Right vastus lateralis muscle biopsy results 2/8/18: DIAGNOSIS: Inflammatory myopathy with perimysial pathology.

Differential Diagnosis

Seropositive rheumatoid arthritis

Dermatomyositis

Diagnosis

Both are correct!

This patient has erosive rheumatoid arthritis *and* dermatomyositis

Given that Dermatomyositis is associated with several forms of malignancy, this patient was referred to have all baseline screenings (colonoscopy and chest x-ray) which were normal.

He was placed on steroids and methotrexate, but d/c MTX due to poor tolerability. He underwent Rituxan 1gm by IV x 2 with resolution of muscle weakness and normalization of CK. He later started leflunomide for his RA and has done very well overall.

J.B. 30 y/o female

CC: pain in multiple joints getting worse for the past year

HPI: Pain first affected bilat shoulders and hurt to raise arms about 2 yrs ago. Then she developed pain in hands and wrists and had difficulty using a pen or holding a cup. Initially her symptoms were intermittent for a few days at a time with periods of no sx for weeks or even a few months. For the last year symptoms are becoming more frequent and severe. Can't wear wedding ring. AM stiffness several hours. Pain 7/10. Has also had low back pain since MVA in 2018, which gets worse as the day goes on and with activity. First talked to PCP about symptoms in 2020 and labs showed neg RF, ANA, and had normal hand xrays. Came to us in 2021 after PCP repeated labs which showed +RF and elevated CRP of 14 (<10 normal). Also had neg HLA-B27. Reports some relief with meloxicam, celebrex. Had significant improvement after taking a course of prednisone for URI.

J.B. 30 y/o female

ROS: +fatigue, arthralgias, occasional headaches. Negative for rashes, photosensitivity, sicca, raynauds, oral ulcers, eye pain/redness, cough, dyspnea, pleurisy, or GI symptoms. No hx recent travel. No hx blood clots, thyroid disease, hepatitis, TB, malignancies, or pregnancies.

PMHx: sinus tachycardia. no prior surgeries

FH: possible distant FH of RA/SLE

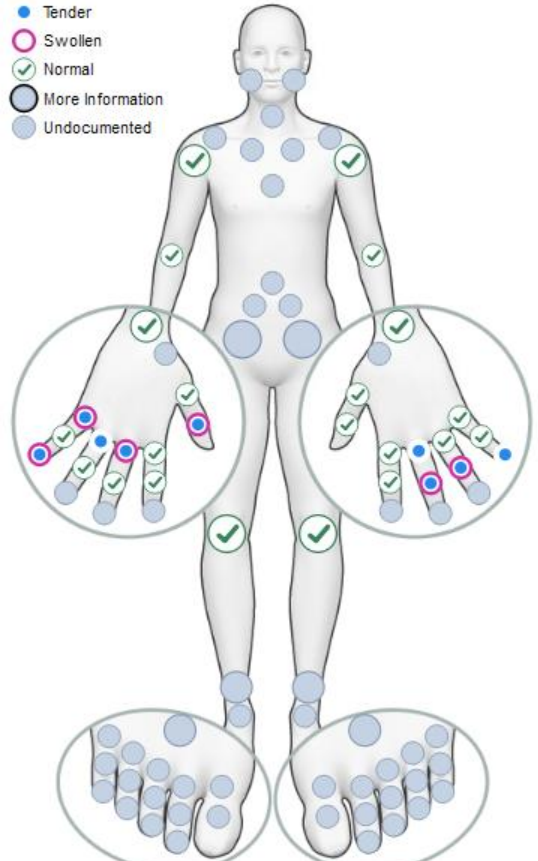
Social: works office job, married. no children. smoked briefly when a teen. 3-4 drinks on weekends.

J.B. 30 y/o female - Physical Exam

Vitals: bp 120/68, temp 98.3, pulse 72, weight 150lbs
Constitutional: wdwn, no acute distress
HEENT: normal external ear canals and TMs, mouth/nose no ulcerations, normal mucosa, no exudates, conjunctiva without erythema
Neck: no thyromegaly or cervical lymphadenopathy
CV: RRR, no murmurs, intact distal pulses
Resp: normal effort, no distress, clear to auscultation, no wheezes or crackles
MS: normal ROM, fist closure 100%, small nodules to R 1st IP and R 5th DIP. (see CDAI). Spine nontender. Neg SLR.
Neuro: alert and oriented. No cranial nerve deficit or sensory deficit. Normal muscle tone. Strength 5/5 UE and LE bilat. Reflexes 2+ symmetric
Skin: warm and dry, no rashes or ulcerations
Psych: normal mood and affect

J.B. 30 y/o female - Physical Exam

Joint Exam (CDAI)



J.B. 30 y/o female - Diagnostic Tests

Labs:
+RF 33 (<14 neg)
+CCP >250
14.3.3 eta neg
Neg ANA
Esr 6
Crp 9.1 (< 8 normal)
Cbc, cmp wnl
Hepatitis, TB neg

Xrays:
Hand xrays in 9/20 (negative per pcp), repeated in 3/21 (no erosions)
Lumbar spine: loss of lordosis
Normal SI jts

Ultrasound R hand: moderate effusions and power doppler with erosive changes

Straightforward Diagnosis!!

Seropositive RA with erosions

J.M. 54 y/o Male

Series of Outside Visits Before Seeing Rheum:

1. **Urgent Care (8/25/19):**

   1 week of insidious onset R knee pain with no prior injury. Sharp pain radiates to medial lower leg. Pain worse with standing and doing stairs. Nonweightbearing xray showed suprapatellar joint effusion and mild tricompartmental osteophytes. Also noted swelling in RLE.

   Plan: indomethacin, tizanidine, and IM steroid. Referred for ortho f/u.

1. **Ortho Visit (8/29/19):**

   Ortho exam: small joint effusion R knee, no tenderness, ROM intact of knee and hip. Neg drawer test, lachman, valgus/varus stress, mcmurray.
   Ortho xray: mild R patellofemoral OA

   Plan: PT, indomethacin prn, ice, brace

J.M. 54 y/o Male - Prior History

3. **Physical Therapy Initial Visit (9/5/19):**

   Therapist noted tenderness and swelling to R calf during eval and referred pt back to ortho before continuing with more PT

4. **Ortho Visit (9/6/19):**

   Exam showed no joint effusion. Tenderness to palpation of medial gastroc and posterior knee. No redness or warmth. Strength 5/5. Increased pain with toe walking.

   u/s of R calf/posterior knee: small baker's cyst, large medial gastroc hematoma (with chronic appearance).

   Plan: ACE wrap, ice, nsaids

J.M. 54 y/o Male - Prior History

5. Ortho f/u (9/23/19):

Swelling improved with ace wrap, but worsens after activity. Difficulty doing work duties. Exam: strength 5/5, decreased gastroc swelling but still tender to palpation

Dx: suspected gastroc strain.

Plan: add tall walking boot, out of work till next appt

6. Ortho f/u (10/14/19)

Swelling improved, persistent pain. Worse with trying to stop nsaid and d/c boot. Exam: tenderness and swelling to posterior knee

MRI R leg: moderate bakers cyst. Decreased size of calf hematoma. Edema around myotendinous junction of extensor digitorum longus

Plan: aspiration/injection of baker's cyst. Continue boot and nsaid, retry PT

J.M. 54 y/o Male - Prior History

7. **Ortho f/u (10/30/19)**

R knee/leg pain was improved, went back to work. Now L knee pain present for a few days. Exam: small effusion L knee, ttp over patella and suprapatellar region, ttp to medial and lateral joint line. FROM but pain with deep flexion. Strength 5/5. Antalgic gait. +patellar grind test. Neg lachman's, drawer, varus/valgus stress. Neg mcmurray.

Xray L knee: mild narrowing of patellofemoral joint

Plan: rest, ice, elevation, back on meloxicam

J.M. 54 y/o Male - Prior History

8. **Ortho f/u (11/7/19)**

Developed rash all over, ongoing L leg pain, noting 20lb unintentional weight loss over 2-3 months. L leg pain worse with activity. Exam: WNL other than “disseminated rash to chest and bilat UE/LE”.

Plan: f/u with pcp, refer to rheum

9. **PCP f/u (mid-November)**

Check labs: +RMSF IgM, +RF, crp in the 300s, esr in 60s

Plan: awaiting rheum appt - will try to move sooner, doxycycline script

J.M. 54 y/o Male - Rheum Consult (11/25/19)

HPI: In addition to previous details, now having new L wrist pain, intermittent fevers of 100-101, chills, sweats, neck stiffness (sees chiropractor), ankle pain and swelling, swelling in both 2nd toes. Pcp gave him ibuprofen 800mg TID and doxy for +RMSF. Pain 3/10. AM stiffness > 1 hr. Had travel to Mexico about 1 month prior to onset of symptoms but did not have any symptoms of infection at that time. No known tick bites. No prior dx psoriasis (has derm appt scheduled). Denies photosensitivity, sicca, raynauds, mouth sores, eye pain/redness, cough/dyspnea, chest pains. No GI symptoms. No hx blood clots, hepatitis, TB, cancer.

J.M. 54 y/o Male - Rheum Consult

PMHx: no chronic conditions

FH: no autoimmune disease or psoriasis

Surg: septoplasty, appendectomy, skin grafts from MVA

Social: maintenance/electrician. Married. Former smoker quit 4 yrs ago, 20pack year.

J.M. - Diffuse Rash

Vitals: BP 138/88, pulse 72, weight 254, bmi 36.
PE: obese male in no acute distress
Skin: scaling erythematous skin with plaques to bilat external ears, scalp, anterior/posterior torso, upper and lower extremities. no nail pitting noted
MS: reduced extension bilat elbows, L wr sw tender. Knees tender and +effusions. 2nd toes dactylitic. L ankle sw tender.

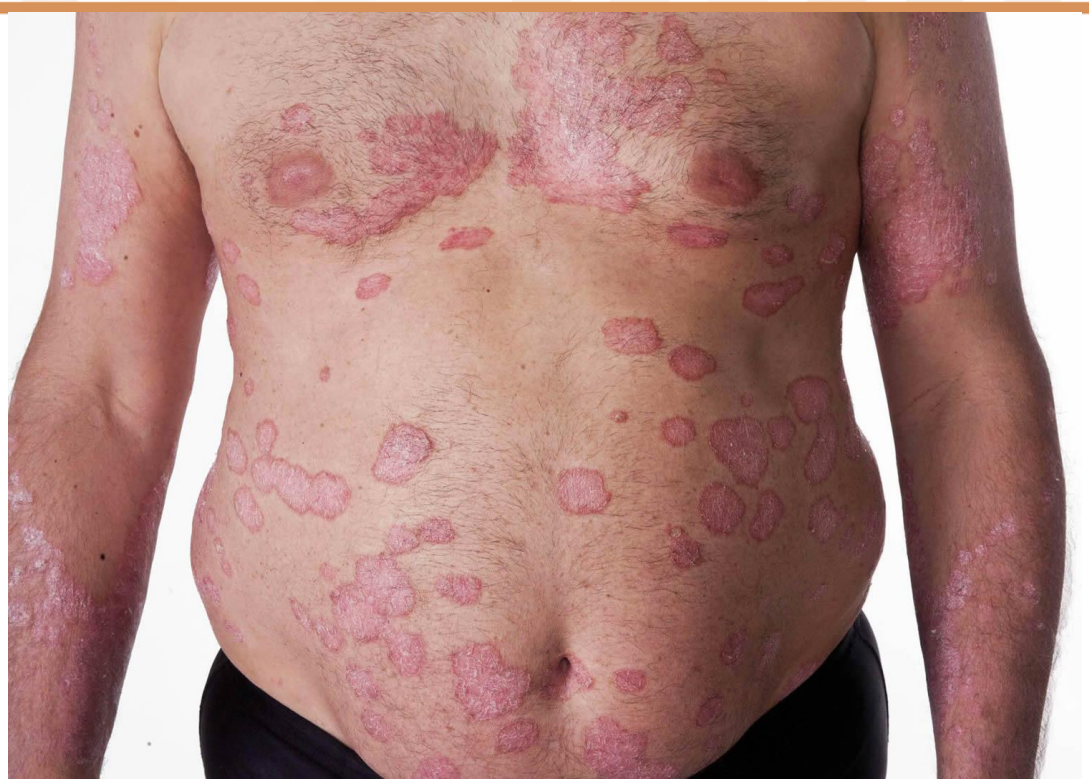


Image credit: https://sabeelhomeoclinic.com/what-is-psoriasis-and-how-it-is-treated-in-homeopathy/

J.M. - Diagnostics

Labs: AVISE negative. Neg RF/CCP. +14.3.3 eta.
Esr 101 (<30 neg). Crp 78.4mg/L (<8 nl).
Neg quantiferon, hepatitis. +RMSF IgM per pcp, neg IgM/IgG on our labs. other tick-borne illness labs negative
Cbc shows mild normocytic anemia, cmp WNL
Xrays: Hands: subchondral scaphoid cysts, no erosions. SI joints bilat OA. Feet with small calcaneal enthesophytes
U/s: Moderate to marked synovial thickening to L wrist, 2-4 mcp, 2,3 PIP. grade 2 effusion and grade 2 doppler in wrist, radial/scaphoid, and scapholunate jts. effusion/doppler in 2nd mcp, 2nd PIP, 5th mcp, volar wrist, 3rd pip

Another easy diagnosis!

Psoriatic Arthritis with Plaque Psoriasis

What about +RF (on one occasion), 14.3.3 eta, and RMSF IgM??

G.R. - 64 y/o M

HPI: Reports intermittent myalgias x 10 years since taking statins. Has tried multiple statins over the years. Symptoms became intolerable 3 months ago, went off statin, pcp gave him prednisone, analgesic, and nsaid with some relief. Retried statin one more time and again developed severe pain in neck and shoulder girdle. Could not lift/extend head or raise arms. Also developed pain in hips, legs, feet. Went on vacation and could not leave hotel room; wife had to bring food back to room and feed him. Even after being off statin for 3 months his symptoms did not resolve. Misses work frequently (MD), stays in bed a lot, wife has to help him get dressed and get up from seated position. Also % fatigue, dry mouth, difficulty taking deep breath, nasal congestion. Hx blood exposure at work but neg testing for hepatitis/HIV. Hx several tick bites (Missouri) in the last couple of months, and also travel to several islands in the Caribbean 3-4 months ago.

G.R. - 64 y/o M

ROS: No rashes, fevers, or GI symptoms

PMHx: coronary stents, knee scope

No FH autoimmune disease

Social: works as physician, married, nonsmoker

PE: Musculoskeletal: holds head in forward position, reduced active ROM of neck in all positions. Reduced shoulder abduction, rotation (limited by pain). Possible synovitis to wrists, 2,3 mcps and 3-4 pips. R hip painful with active flexion but not rotation.

G.R. - 64 y/o M - Diagnostics

Labs: AVISE low positive ANA by ELISA only, otherwise neg. Low C4.
ESR >130. CRP 218mg/L (<8 nl),
CBC: mild anemia hgb 12.0,
CMP: elevated globulins
Urine: 450mg urine proteinuria, IgG kappa monoclonal protein
Neg myositis panel. Normal muscle enzymes.

Xrays: DJD of wrist and CMC, 1st MTP, healed old rib fx. cxr clear. shoulders, hips normal. C-spine and L-spine with DDD, mild facet djd, and endplate sclerosis

Hand u/s: marked synovitis

G.R. - 64 y/o M - DDX

PMR

Seronegative RA

Spondyloarthropathy

Malignancy

OA

We tentatively went with PMR. His PCP had started him on 80mg prednisone the day of our first visit with a subsequent quick taper. 2 weeks later he had dramatically improved. We restarted 10mg daily with plan for a slow taper over 1-2 yrs.

G.R. - 64 y/o M - PMR

We also recommended heme/onc consult due to presence of monoclonal protein

Heme/onc consult: eval shows plasma cell dyscrasia/smoldering myeloma. Plan: observation and get MRI spine and pelvis to r/o multiple myeloma. MRI of entire spine in 2018 (report not seen by us at the time) reportedly shows djd and no bone lesions related to myeloma.

G.R. - 64 y/o M - PMR

Hx over next 6 months: recurrent symptoms with tapering prednisone (still needing 15mg or more daily to resolve symptoms). Also having sx of plantar fasciitis, onycholysis. ESR improved but still approx 70mm. Added methotrexate as steroid-sparing agent.

By 1 yr later pt still unable to taper lower than 5mg due to repeated relapses. Pain worst in neck and shoulders, low back radiating to legs and difficulty with ambulation.

G.R. - 64 y/o M - PMR

Recheck of labs showed ESR was 107

Xrays of L-spine and c-spine ordered to look again for myeloma - djd only

Then ordered repeat MRI of L-spine and pelvis: sacroiliitis as well as osteitis pubis, bone marrow edema of R acetabulum, and L hip joint effusion. The findings were all more prominent when compared to MRI from 2018 (and still no myeloma)

G.R. - 64 y/o M - Conclusion

Established new diagnosis of spondyloarthropathy, likely ankylosing spondylitis

Consulted heme/onc to see if ok to start TNF inhibitor. He still felt patient had no progression of smoldering myeloma, so therefore ok to add biologic.

Started Humira. Within several months pt had significant improvement in symptoms and was able to taper off prednisone without relapse.

Teaching Points:

When evaluating a patient with a previous diagnosis, always start fresh and do a complete evaluation, repeating diagnostic tests as necessary.

Trust your intuition; if the story doesn’t add up, perform additional workup!

Conclusion

- Initial workup of a patient with joint pain is complex and should include a thorough history, physical exam, and diagnostic tests.

- The workup should be comprehensive to allow for a broad differential diagnosis

References

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