IT ALL BEGAN WITH AN ANA…

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DISCLOSURES

- No relevant disclosures to this case

REFERRAL REASON: EVALUATE FOR LUPUS

- 68-year-old male presents with hand symptoms starting in 08/2022. I first saw him in December, 2023

- Pain and puffiness, and some numbness and tingling, initially involving the left 1-3 digits, and then progressed to other fingers. Diagnosed with carpal tunnel syndrome by hand surgeon (clinical diagnosis only)

REFERRAL REASON: EVALUATE FOR LUPUS

- Cortisone injections helped temporarily, then carpal tunnel release without benefit.

- Symptoms persisted and he was referred to us for persistent left wrist tenosynovitis and positive ANA (Direct Method). EVALUATE FOR LUPUS.

December, 2023

- At presentation he complains of swelling of the left wrist, and barely being able to use his left hand
- No systemic symptoms at all and no symptoms suggestive/supportive of CTD
- Developed some discomfort in the right hand as well
- Father had diagnosis of lupus and avoided sun.
- No personal or family history of psoriasis, IBD, uveitis

- On physical exam he is afebrile, normal vital signs, normal general exam
- Left hand: Some swelling thumb MCP joint, limited grip. Left wrist very tender, swollen, more so on the volar aspect. Very limited range of motion in all planes.. There is significant tenosynovitis, especially on the flexor aspect.
- Right hand: No tender joints. Questionable thickening/swelling of the 2nd and 3rd MCP joints. Right wrist is a little tender, not swollen, with full ROM.
- Mild diffuse puffiness of both hands. All other joints are clear

Discussed the case with the surgeon, who felt there was no concern for infection, and did not think there was need for surgical exploration or biopsy, based on his observation during carpal tunnel release. He thought there was likely an underlying inflammatory disease.

DIAGNOSTIC TESTING

- Normal CBC and chemistries
- ANA 1:160 and remainder of ANA 12Plus panel completely negative
- RF and CCP negative
- WSR 21 and CRP 11mg/L (nl <10 mg/L)
- Hand x-rays had been done by hand surgeon and were reportedly normal
- Ultrasound of bilateral hands and wrists: Mild but well-defined inflammatory disease activity bilaterally without erosive or crystalline features. Distribution fits no particular pattern.

January - April, 2024

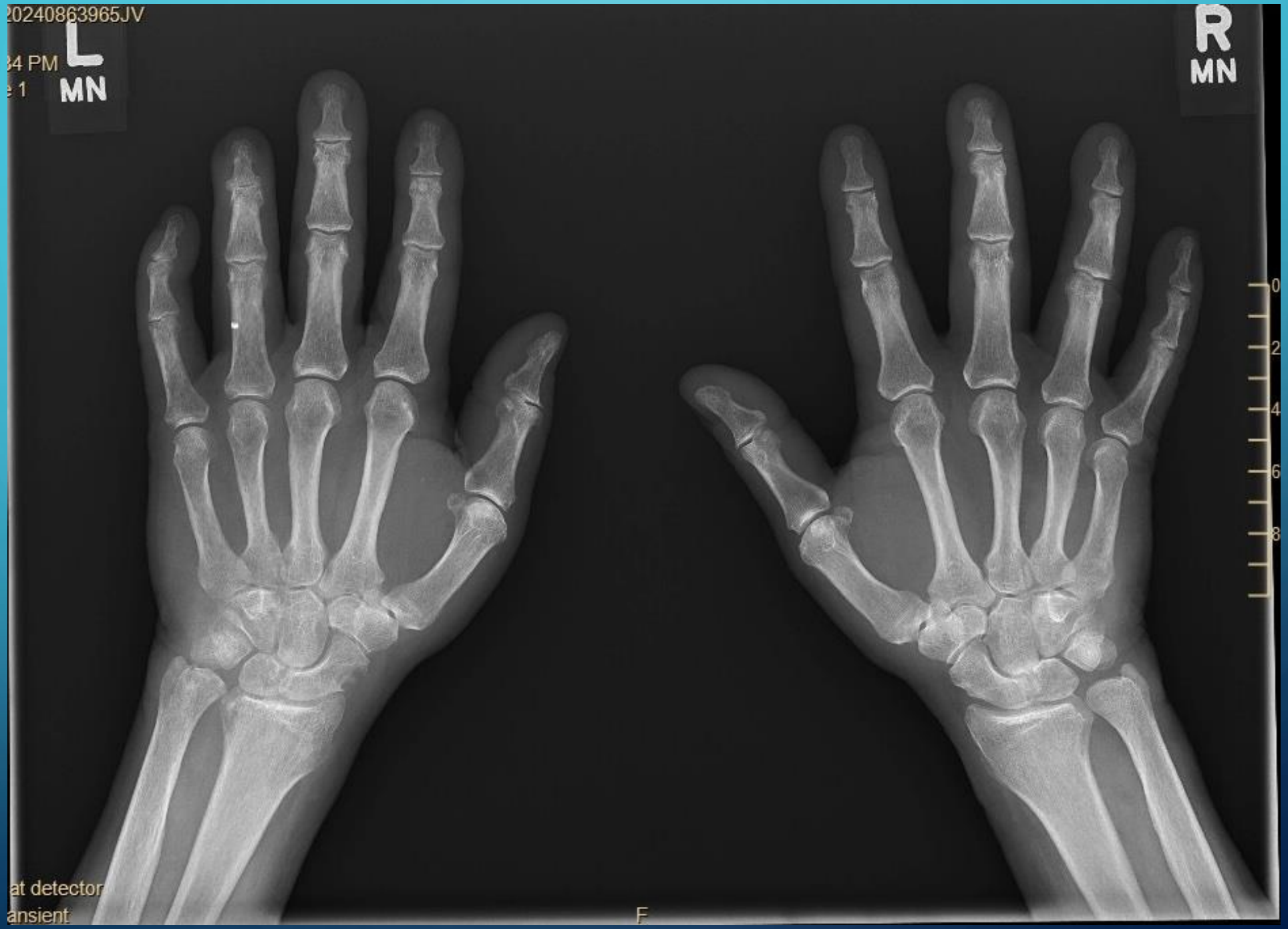
- Based on those findings, we thought he could have seronegative RA and started Methotrexate 15mg weekly, and increased dose to 25mg at week 8.
- On the first follow up (February) the left wrist is tender and swollen. He has several swollen MCP joints in the right hand, and 1 swollen MCP joint in the left hand. He is now having pain in feet and right hip. Feet not swollen.
- The following month he had an ER visit for a kidney stone (not collected)
- Six weeks later he has had minimal improvement in hand pain, but some symptoms sound more mechanical in nature.

May, 2024

- Hand x-rays ordered, report as follows:

- IMPRESSION:

  1. Multifocal erosions of the left wrist, most consistent with history of rheumatoid arthritis.
  2. Equivocal erosions of bilateral metacarpal heads and left ring proximal phalangeal head.
  3. Mild bilateral thumb IP and multiple DIP joint osteoarthrosis.
  4. Moderate right midcarpal arthrosis.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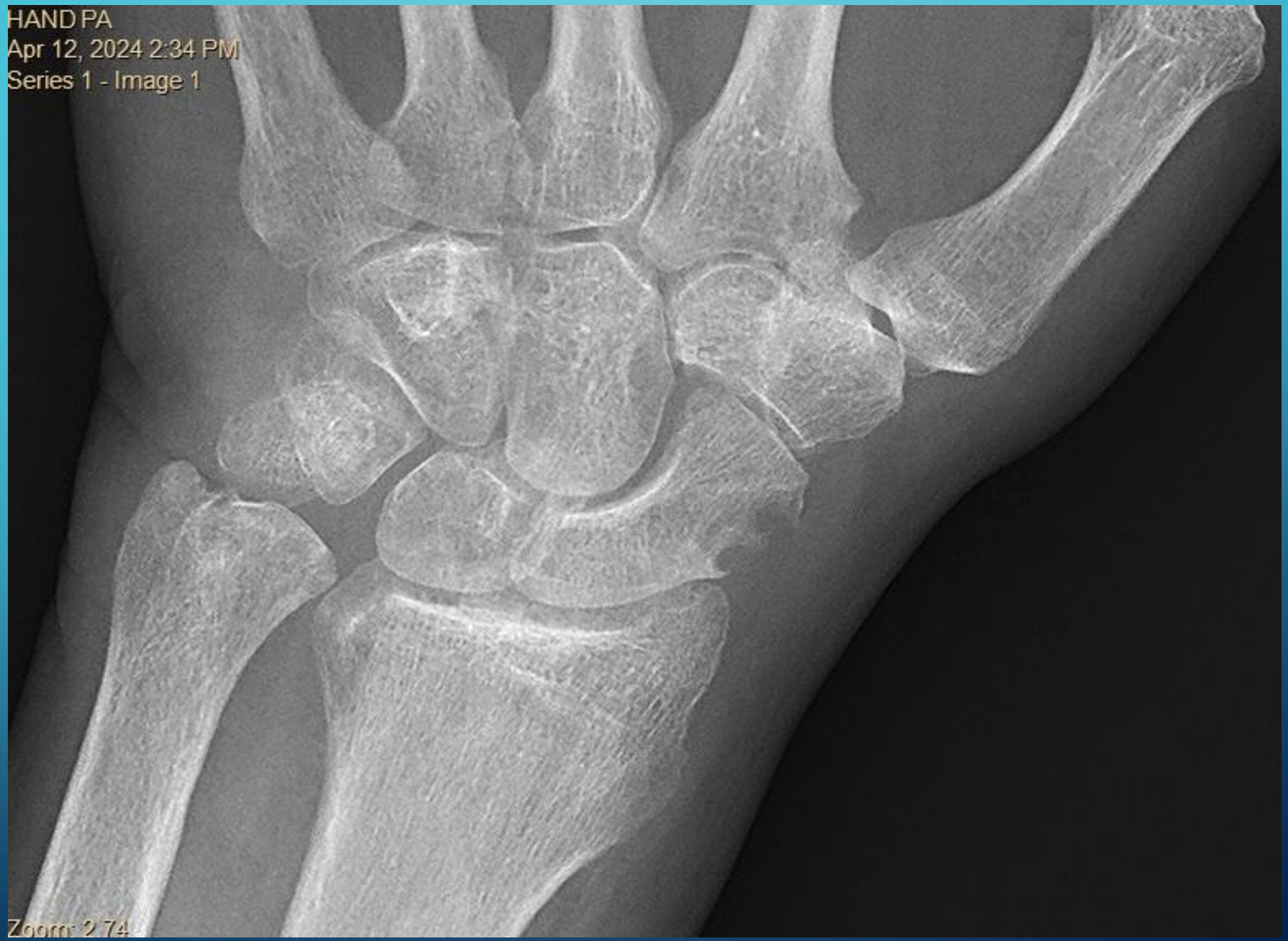
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May-June, 2024

- Next visit: Pain is now waking him up
- 12-day prednisone taper ineffective
- Ultrasound of feet/ankles shows isolated synovial hypertrophy of right 1st MTP, favored to be secondary to degenerative features in this area. No other abnormalities.
- By this time, he had also tried multiple NSAIDs without any benefit.

- THOUGHTS?

- Serum uric acid level 7.22 mg/dL
- We thought this could be gout. 40-50% of gout does not show up on US.
- Colchicine and allopurinol added, MTX stopped, since no effect at all after 6 months of therapy at full dose
- With allopurinol 300mg uric acid decreased to 3.4 mg/dL.
- Symptoms not improved at all on gout treatment

July, 2024

- U/S of wrists July 2024: There was persistent mild inflammation of the bilateral wrists and new erosive disease of the left ulna. No crystals were noted.
- We go back to the presumed seronegative RA diagnosis, and add leflunomide 20mg daily. Allopurinol and colchicine were continued.
- Quantiferon Tb test negative and Hepatitis B and C negative

October, 2024

- After 10 weeks of leflunomide therapy, he is not any better.
- He fell about 2 weeks prior and caught himself with the left hand and this made the pain and swelling a bit worse. He has also noted some pain in the right hand - mostly the thumb since last visit.
- Left hand: There is significant swelling and fluctuance along the left medial wrist extending to the left thumb region with very minor tenderness. Significant tenosynovitis persists.

ANY THOUGHTS NOW?

November, 2024

MRI OF LEFT WRIST

- IMPRESSION:

  1. Extensive pancarpal polyarticular arthrosis with extensive erosions and marrow signal abnormalities, most typical in appearance for rheumatoid arthritis.
  2. Large lobulated collection of complex joint fluid, synovitis, and rice bodies along the radial aspect of the wrist deep to the first and second extensor compartment tendons.
  3. Smaller quantity of similarly complex fluid at the distal radioulnar joint crescentically surrounding the ulnar head.
  4. Manifestations of ulnocarpal abutment with communicating defect through the TFCC articular disc.
  5. Flexor tenosynovitis through the carpal tunnel.

MRI OF LEFT HAND

- IMPRESSION:

  1. See wrist MRI comments
  2. No significant erosions within the hand distal to the proximal metacarpals.
  3. Flexor tenosynovitis involving the ring finger flexor tendons and carpal tunnel.
  4. Susceptibility artifact at several locations, most notable at the dorsal aspect of the ring finger

A PROCEDURE WAS PERFORMED…

SYNOVIAL BIOPSY

- LEFT WRIST SYNOVIUM, EXCISION
- Palisading granulomatous inflammation with necrosis
- AFB stain: Positive for rare acid-fast bacilli
- GMS stain: Negative for fungal organisms

- OF NOTE: Synovial fluid AFB stain negative

WHAT I DID NOT TELL YOU

- On initial visit I learned he was a turkey farmer (hence my call to the surgeon).
- He denied any involvement with fishing, fish tanks, or any exposure to marine life.

FINAL AFB CULTURE

- MYCOBACTERIUM AVIUM COMPLEX Few
  - Negative for M. tuberculosis complex to date by PCR
  - Mycobacterium Avium Complex
    - Susceptibility , AFB slow grower
    - Antibiotic
      - RESISTANT: Moxyfloxacin, Linezolid
      - SUSCEPTIBLE: Clarithromycin, Amikacin (IV), Amikacin (liposomal inhaled)

MYCOBACTERIUM AVIUM COMPLEX ARTHRITIS

- Septic arthritis due to Mycobacterium avium complex (MAC) is extremely rare. While MAC infection is classically associated with HIV/AIDS and immunosuppressed states, it may occur in immunocompetent individuals.

- Specifically, cases of MAC septic arthritis have been reported in patients with rheumatoid arthritis, scleroderma, and dermatomyositis, and on medications such as prednisolone, azathioprine, and infliximab

- CASE REPORTS
- **Septic arthritis of native joints due to Mycobacterium avium complex: A systematic review of case reports**
- Thirty-three cases of MAC native joint septic arthritis were reported since 1976. MAC septic arthritis affects immunocompetent and immunocompromised patients, most frequently as a monoarthritis involving the knees and wrist.

- MAC septic arthritis may present in the context of disseminated MAC infection and primary MAC septic arthritis. The average time to diagnosis from onset of symptoms was 20 months, where the majority of cases were initially misdiagnosed.

- Although arthrocentesis can be used to make the diagnosis, a synovial biopsy is necessary in many cases to confirm the diagnosis.
- A combination of surgery and antimycobacterial drug treatment has the highest chance of achieving complete resolution.

QUESTIONS STILL LEFT IN MIND

- Does his MAC infection explain the other joints (i.e.: right hand)?
- Does he also have seronegative RA?
- Does he have gout?

REFERENCES

- Semin Arthritis Rheum. 2021 Aug;51(4):813-818.doi: 10.1016/j.semarthrit.2021.05.012. Epub 2021 Jun 9.
- Cureus.2021 Aug 12;13(8):e17129. doi:10.7759/cureus.17129 Septic Arthritis of the Right Wrist due to Mycobacterium Avium Complex in an immunocompentent patient. Bibek Saha [1], Kurtis Young [1], Melissa Kahili-Heede [1], Sian Yik Lim

THANK YOU