Fever of Unknown Origin: A Rheumatologic Cautionary Tale in the Era of COVID-19

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Background:

- Fever of unknown origin (FUO) often raises concern for infectious etiologies, especially during the COVID-19 pandemic.
- FUO is defined as a fever lasting at least 3 weeks, with temperature greater than 38.3 C, and no obvious source.
- We describe a case of aortitis secondary to ankylosing spondylitis (AS) found incidentally during workup for FUO.
- The three general causes of FUO include:
  - infection
  - malignancy
  - systemic rheumatic disease
- We describe a case of aortitis secondary to ankylosing spondylitis (AS) found incidentally during workup for FUO.

Case Presentation:

- A 67-year-old man presented to PCP with CC of low-grade fever for one month. He also endorsed chills, fatigue, and cough
- PMHx : coronary artery disease with cardiac stents, abdominal aortic aneurysm, hypertension, hyperlipidemia, basal cell carcinoma (BCC) of the back status post resection(recent), with recent COVID19 vaccination.
- Due to initial concerns for cellulitis after resection of BCC on his back, he was treated with cephalexin but his fever persisted prompting malignancy workup.
- CT scan of his abdomen and pelvis showed acute aortitis of the infrarenal abdominal aorta and bilateral sacroiliitis.

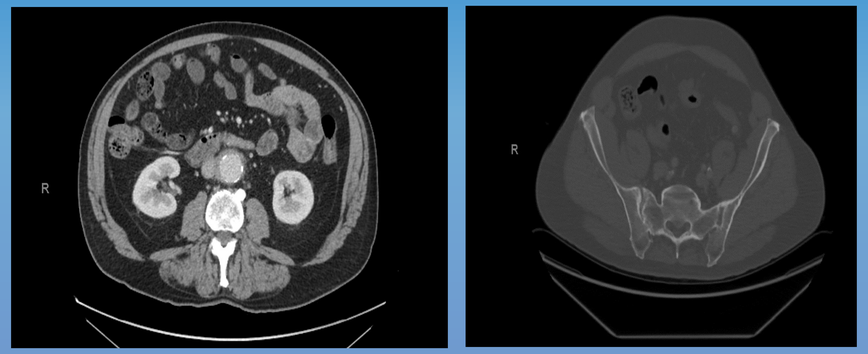

Image 1 & 2: Aortitis and bilateral sacroiliitis on CT imaging

Hospital Course and Workup:

- He was admitted to the hospital for workup of FUO and aortitis as follows:
- Infectious:
  - COVID 19 PCR x 3 (Negative)
  - Lyme antibody profile (Negative)
  - Hepatitis panel (Negative)
  - Syphilis screen (Non reactive)
- Rheumatological:
  - Elevated inflammatory; ESR (55) and CRP (37.4).
  - Negative: CCP autoantibody, Rheumatoid Factor, ANCA panel, Serine protease 3, ACE, C3, and C4, and IgG4
- He was initially started on Broad spectrum antibiotics which were discontinued as blood cultures remained negative.
- Rheumatology was consulted due to aortitis and bilateral sacroiliitis. Patient noted lower back pain as a teenager, which was thought to be sciatica at that time.
- His FUO was deemed to be due to undiagnosed AS presenting as aortitis in adulthood.
- He was started on high dose steroids with resolution of his fevers. On follow-up, patient continued to be afebrile allowing tapering of steroids.

Discussion:

- Aortic involvement, such as aortitis, is potential life-threatening complication of ankylosing spondylitis (AS) that typically occurs late in the disease course[2-4].
- Previous literature has described aortitis as a known cause of fever of unknown origin.[4]
- This case demonstrates the challenges of diagnosing FUO in an atypical manifestation of AS.
- A study from 2007 showed that as high as 22% of FUO diagnoses were related to noninfectious inflammatory disease[1].
- Thus, clinicians should have a high index of suspicion for rheumatologic disorders when working up FUO.
- A thorough history and physical will expedite the diagnosis and allowing early treatment, thereby decreasing the disease burden of inflammatory diseases.

References

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