Fever of Unknown Origin: A Rheumatologic Cautionary Tale in the Era of COVID-19
Yasin Kanakrieh, DO1; Amy Lam, DO1; Christopher Banach, DO1; Zaina Shahid, MD1; Kourtney Rudzinski, DO2; Susan Kim, MD2
1Department of Internal Medicine, 2Department of Rheumatology; Lehigh Valley Health Network, Allentown, PA.

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 cephalixin but his fever persisted prompting malignancy workup.
- CT scan of his abdomen and pelvis showed acute aortitis of the infrarenal abdominal aorta and bilateral sacroilitis.

Hospital Course and Workup:
- He was admitted to the hospital for workup of FUO and aortitis as follows:
  - Febrile: COVID-19 PCR v 3 (Negative), Lyme antibody profile (Negative), Hepatitis panel (Negative), Procalcitonin (Non-reactive).
  - Rheumatological: ESR (55) and CRP (37.4).
- He was initially started on Broad spectrum antibiotics which were discontinued as blood cultures remained negative.
- Rheumatology was consulted due to aortitis and bilateral sacroilitis. 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:

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