The Answer is in the Aspirate, a puzzling case of SIRS

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Case Description

HPI:
65-year-old man with CHF, CKD, history of stroke with L hemiparesis and spasticity, colon cancer s/p hemicolectomy, non-tophaceous gout was admitted to the hospital after found down after a ground-level mechanical fall. He described one week of progressive L calf pain with movement. He denied fevers, chills, night sweats, cough, chest pain, abdominal pain, or other sick symptoms.

Vital signs:
T 97.9 F, HR 88 bpm, BP 122/67 mmHg, RR 12 bpm, SpO2 88% on RA

Physical Exam:
Gen: Well-appearing, non-toxic, NAD
Cardiac: regular rate and rhythm
Pulm: Clear to auscultation
Abdomen: Non-distended, soft, non-tender
Neuro: LLE weakness, spasticity, hyperreflexia

Extremities: Mild pitting edema LLE > RLE, tenderness to palpation of L calf and popliteal fossa, no knee joint line tenderness, no erythema, no warmth, no detectable joint effusion

Labs:

133	99	69	110
5.1	22	2.3	

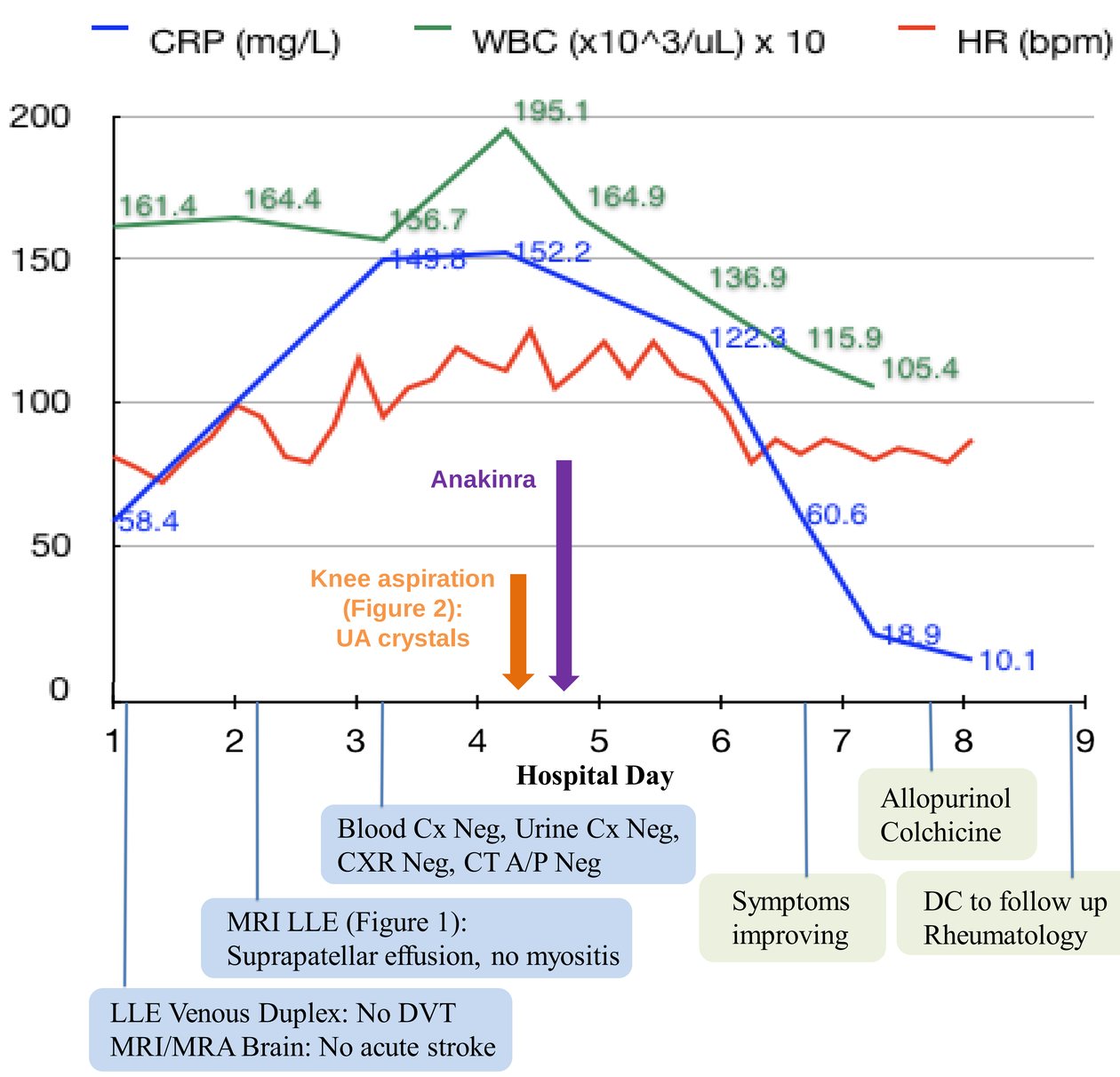
	13.6	
16.14		303
	41.0	

ESR 51 *mm/hr*
CRP 58.4 *mg/L*
CK 2440 *IU/L*

References

1. Shah D, Mohan G, Flueckiger P, Corrigan F, Conn D. Polyarticular Gout Flare Masquerading as Sepsis. Am J Med. 2015 Jul;128(7):e11-2. doi: 10.1016/j.amjmed.2014.12.025. Epub 2015 Jan 20. PMID: 25614957.
2. Schafer VS, Krause A, Trauzeddel RF, Schmidt WA. Systemic Inflammatory Polyarticular Gout Syndrome – Description of a Previously Neglected Entity. JSM Arthritis. 2017 August;2(2):1024
3. Peng L, Wurzburger R, Obley A. Unresolving Sepsis: When in doubt, consider gout. Orgeon Chapeter Scientific Meeting. American College of Physicians. 2018.

Hospital Course



Point-of-care Ultrasound:

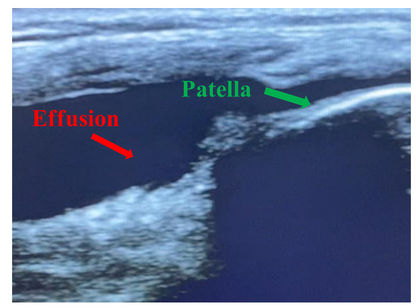


Figure 2.
Synovial fluid aspirate:
Gross appearance and microscopy

Synovial fluid studies

Color	Amber
Appearance	Cloudy
RBC	7000 / uL
WBC	2300 / uL
Segs	58%
Lymph	6%
Uric acid crystals	**POSITIVE**
Ca pyrophosphate crystals	Negative

Teaching Points

- The diagnosis is monoarticular gout flare with systemic inflammatory response.
- Gout can manifest with SIRS and mimic sepsis. Early consideration of gout could have prevented extensive lab and imaging work up
- Joint aspiration and synovial fluid analysis is the diagnostic gold standard
- In cases of systemic inflammatory response to gout, NSAIDs are typically ineffective. Glucocorticoids, colchicine, and the anti-IL1 medication Anakinra are often required[2]

Figure 1.
MRI L tibia and fibula: Proton Density (PD) weighted sequence. Moderate suprapatellar joint effusion (red arrow), no evidence of myositis