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The Canary in the Coal Mine

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The Canary in the Coal mine

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Case Presentation

- We present to you a 32-year-old Asian male with PMH of ERSD secondary to minimal change disease (diagnosed at age 26), who presented for acute onset shortness of breath, lower extremity edema, and abdominal distension.
- He underwent CTPE which showed large left pleural effusion, moderate pericardial effusion (Image 1) and as well as ascites (Image 2). Transthoracic ECHO showed moderate to large pericardial effusion with evidence of tamponade physiology.
- The patient underwent emergent pericardiocentesis and placement of a pericardial drain. The pericardial fluid was bloody in appearance, fluid studies shown in table 1.
- The patient also underwent left-sided thoracentesis with the removal of 1L bloody fluid with the placement of a left-sided pleural drain. Pleural fluid studies shown in table 2.
- Furthermore, paracentesis was done with the removal of 800cc peritoneal fluid with bloody appearance. Fluid studies shown in table 3.
- Patient's labs showed persistent anemia and thrombocytopenia. He underwent autoimmune work-up, as shown in table 4.
- Given his work-up and clinical presentation, the suspicion of auto-immune disease was high, including SLE.
- He met 4/11 SLICC criteria for SLE including serositis, +ANA, anemia/thrombocytopenia and low complements, history of MCD. He was started on methylprednisolone resulting in the improvement of anemia/thrombocytopenia. He was later transitioned to oral prednisone with a taper, in addition to initiation of Imuran and Plaquenil.

Lab Values and workup

Table 1 – Pericardial fluid analysis

Color	Dark Red
Clarity	Turbid
RBC (per mm ³)	2047709
WBC (per mm ³)	7821
Neutrophils	85%
Cultures	Negative bacterial, fungal infection and AFB
Cytology	Negative for malignancy

Table 2 – Pleural fluid analysis

Color	Red
Clarity	Cloudy
RBC (per mm ³)	30803
WBC (per mm ³)	485
Neutrophils	95%
Cultures	Negative bacterial, fungal infection and AFB
Pleural Biopsy	Fibrotic pleura with granulation tissue, negative for malignancy

Table 3 – Peritoneal fluid analysis

Color	Tan
Clarity	Cloudy
RBC (per mm ³)	112577
WBC (per mm ³)	485
Neutrophils	95%
Cultures	Negative bacterial, fungal infection and AFB
Cytology	Negative for malignancy

Table 4 – Autoimmune Work-up

CRP 18,	ANCA Negative
ESR 53	RF, CCP, RNP Negative
ANA 1:640 speckled pattern	Anti-Smith Antibodies, dsDNA Negative
C3, C4 Low	SS-A, SS-B Negative

Images

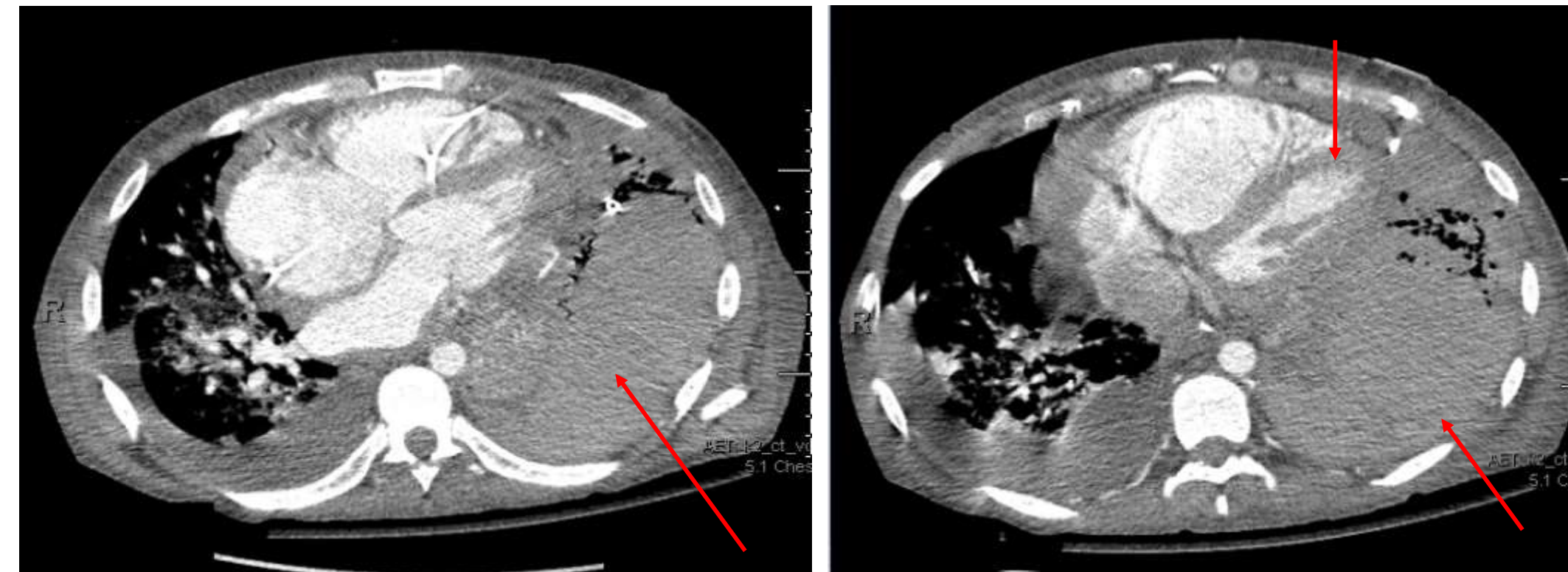


Image 1: Significant Left sided pleural effusion with near opacification, moderate right pleural effusion, pericardial effusion.

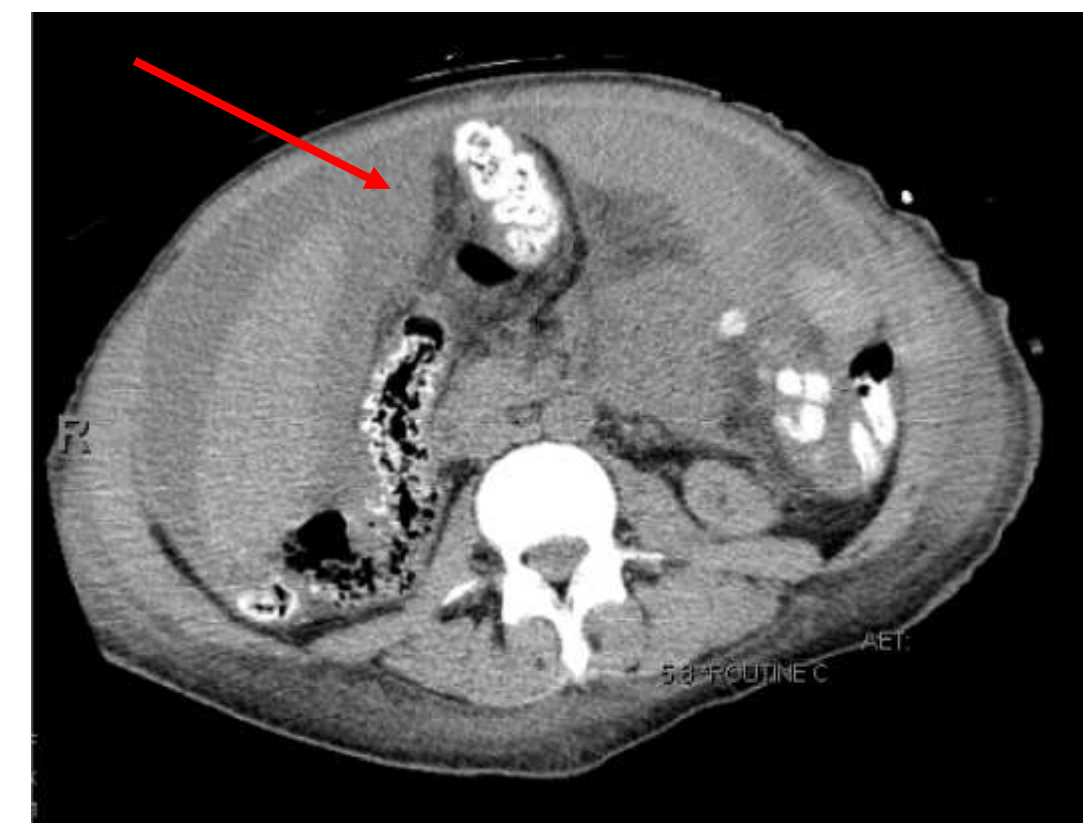


Image 2: Large volume non-simple fluid attenuating abdominal ascites with thickened peritoneal reflections

Discussion

- To date, the association of SLE with MCD has been described only in isolated case reports. Initially, the etiology of the patient's MCD was unclear. He had no history of lupus nephritis and no known causes for secondary FSGS, but failed to recover renal function and ultimately progressed to ESRD. His dramatic presentation suggests that MCD was a harbinger of SLE—the metaphorical canary in the coal mine. In the context of his past medical history and his demographic, initial clinical suspicion for SLE was low. This case contributes to the body of literature supporting early consideration of SLE as a potential etiology for MCD and acute pericarditis.

Conclusions

- SLE is an autoimmune disorder with a wide spectrum of manifestations.
- Acute pericarditis is an important and potentially a life-threatening complication of the disease.
- According to the most recent EULAR/ACR 2019 SLE criteria, acute pericarditis scores 6 points. A total of 10 points is required to diagnose SLE, thus recognizing SLE as a potential underlying cause in a newly diagnosed acute pericarditis or cardiac tamponade is crucial to initiate treatment and improve outcomes. A relevant association may exist between SLE and MCD.