**Academic Half Day – Rheumatologic Emergencies**

**Learner Guide**

**Case 1**

72-year-old male with a history of type 2 DM, rheumatoid arthritis, HTN, and CKD2 who presents with 3 days of right ankle pain. The ankle has been progressively painful to the touch with limited range of motion. He states the pain started suddenly when he woke up in the morning. He has not had any fall or recent injury. He denies fever, chills, night sweats.

Meds: metformin, methotrexate, adalimumab, atorvastatin, hydrochlorothiazide

VS: T 99.5, HR 90, RR 18, BP 144/82

Exam: erythema and swelling over the lateral R ankle and dorsal foot with extreme tenderness to palpation. Active and passive ROM is limited by pain. No evidence of inflammation in any other joints.

WBC 11, Hgb 13, Plt 200

Renal: Na 135, K 3.7, Cl 100, HCO3 28, BUN 18, Cr 1.3

Uric acid 7.8

ESR 60 CRP 10

Xray of the ankle shows soft tissue swelling, no gas, no fractures.

1. **How would you categorize the patient’s current complaint? Maybe try a problem representation?**
2. **What is your differential diagnosis?**
3. **What is your next step in management?**
4. **How would you interpret the following synovial fluid collections?**
	1. **WBC 90k 95% PMN:**
	2. **WBC 2k 25% PMN:**
	3. **WBC 30k 60% PMN:**

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| --- | --- | --- | --- | --- |
| **​** | **Noninflammatory​** | **Inflammatory ​****(RA, gout, etc)** | **Infectious​** | **Hemorrhagic​** |
| WBC Count​ |  |  |   | ​ |
| Percent PMNs​ |  |  |  |  |

1. **Evidence Based Medicine review, then review a few sensitivities, specificities, and likelihood ratios for septic arthritis.**
	1. **What is sensitivity and specificity?**
	2. **What is a likelihood ratio?**
	3. **Let’s review a few sensitivities/specificities of the most common clinical signs/symptoms with septic arthritis.**

**You arrange for an arthrocentesis for your patient and the fluid analysis is as follows:**

**Cloudy**

**WBC 70,000; PMNs 95%**

**Extracellular negatively birefringent needles**

**Gram stain and cultures are pending**

1. **What is your interpretation of the fluid analysis and next step in management?**
2. **If the above patient had uncomplicated acute gout (no concern for septic arthritis after arthrocentesis), what treatment would be best?**

**Case 2**

28-year-old woman with a history of +ANA presents with several weeks fatigue, malaise, joint pains. No fevers or chills. Feels tired all the time, low energy. Has maybe lost 5 pounds unintentionally. Joint pains in wrists, fingers and ankles primarily. No rashes, but she does note some small ulcerations in her mouth. She thinks she is losing some hair. She has noticed her feet are slightly swollen and she has some puffiness around her eyes. She had joint pains and was referred to a rheumatologist years ago because her mother had rheumatoid arthritis. The rheumatologist told her she had a +ANA, but did not have rheumatoid arthritis like her mother.

Medications: None

VS: HR 80, RR 16, BP 160/96, 98% RA

Thin woman in no acute distress

Mild Periorbital edema bilaterally

RRR, no m/r/g

Lungs clear bilaterally

1+ LE pitting edema to mid-shins bilaterally

**The ER orders some basic labs on for your patient and they return as below…**

WBC 4.3k, Hgb 10, Plt 200

Na 136, K 4.5, Cl 110, HC03 18, BUN 35, Cr 3.0

AST 42, ALT 34, ALP 120, Tbili 1.1, Albumin 2.5

TSH: 2.0

1. **What is on the differential at this point? What additional testing would you like?**
2. **What are you most concerned about and what is the most likely diagnosis?**
3. **What is the next step in management?**
4. **How do you treat it?**
5. **On HD3, the patient suddenly develops a cough productive of streaks of bloody sputum and oxygen drops to 76%, put on non-rebreather with saturations up to 88%. The CXR appears below (QR code). What is your differential for this finding and what would you order next?**



1. **The patient is intubated and bronchoscopy performed with increasingly bloody return on serial aliquots. How is this treated?**

**Case 3**

28-year-old female presents with acute onset respiratory distress and severe left leg pain. Left lower extremity leg pain began 48 hours prior and has increased in severity. She awoke this morning feeling short of breath which prompted her to come to the ER.

PMHx: LLE DVT diagnosed 7 months ago, attributed to presumptive prolonged travel, anticoagulated since diagnosis x 6 months

Obstetric History: G3P0

VS: HR 112, RR 26, BP 110/60, 90% on 6L

Female in moderate respiratory distress

Tachycardic, regular

Lungs clear bilaterally, tachypnea

Abdomen soft, nontender

Left leg is pale and cool below the knee, pulses are not palpable at PT or DP, toes are purple

Lacy pattern to skin on right leg, abdomen, arms (livedo reticularis)

1. **What is your differential diagnosis for this patient?**
2. **What would you like to order?**
3. **What are the next steps in laboratory investigation?**

**Case continued…**

**12 hours after presentation she develops right sided facial droop and is unable to move her right arm. MRI confirms an ischemic stroke involving the right MCA territory.**

1. **What diagnosis does this patient now presumptively have?**
2. **How do you treat this patient?**

**Case 4**

30-year-old woman with a history of systemic scleroderma associated with Raynaud’s syndrome, GERD and mild intermittent asthma presents to your office for routine follow up. She complains of a bifrontal headache for the past 3 days. No visual changes. No vomiting, photophobia, or phonophobia.

Meds: omeprazole

VS: T 98, HR 74, RR 16, 186/98

Thin woman in no acute distress

Pupils are equal and reactive, no papilledema

Regular rate and rhythm, no m/r/g

Lungs clear bilaterally

Abdomen soft, nontender, no bruits over renal arteries

Tightening of the skin around the mouth, over the hands, feet, chest and abdomen

You review her chart, and her blood pressure was 128/74 one month ago and similar again at another visit 2 weeks ago when she received a steroid burst for asthma exacerbation.

Labs in the ER are below:

Na 135, K 3.8, Cl 105, HCO2 28, BUN 65, Cr 2.7

WBC 6.0, Hgb 9.0, Plt 67

UA: 1+ protein; no cells or casts

1. **What additional labs do you want to get and why?**
2. **What does this patient have? What are you most concerned about on your differential?**
3. **Why does this occur?**
4. **What is the treatment for this condition?**
5. **Could we prevent scleroderma renal crisis if we add an ACEi to our patients with scleroderma?**

Adapted from the University of Cincinnati AHD