02/02/25 Morning Report with @CPSolvers

"One life, so many dreams" Case Presenter:Lea(xLea_B) Case Discussants: Harry Cheung (@), Daniel Mathew (@Dan_Mathew_1)

CC: 60 y old female presented with fever from 04 days and high CRP.

HPI:She have chills,dry cough,severe nausea severe,little vomiting,loss of appetite, from 4 days, temp recorded at home was 39.7 C.

ROS: neg for dyspnea,chest pain, palpitation,diarrhea,dysuria, wt loss

PMH: HTN,appendectomy,psoriasis (6 yrs),arthritis,-10 yr ,HLA B27 neg

Meds: methotrexate,adalimumab (TNF alpha inhibitor),folate, methotrexate,lisinopril

Fam Hx:unremarkable

Soc Hx: Non smoker,non alcoholic

Health-Related Behaviors: recent sick contact with infant

Allergies: ampicillin-(SOB,urticarial rash)

Vitals: T: 38.6 BP: 127/89 **RR: HR**:124 **Sat:93 @ RA**
Exam: Gen: no acute distress , feverish
HEENT:unremarkable
Neck: unremarkable
CV: tachycardic, no murmur
Pulm: B/L attenuated dec breath sounds at bases of lungs,B/L exp wheeze
Abd: mild Right flank tenderness
Neuro: unremarkable
MSK: small patch of psoriasis on lower shin , no leg edema

Notable Labs & Imaging:
Hematology:
WBC: 20k (neutrophil predominant) Hgb:13 Plt:nl

Chemistry
Na:nl K:nl Ca: Ph: Mg: Glu: Cl: HCO3:
Crp-604(nl:5)
proCalcitonin-23 (nl:0.5)
Gfr:14 , Cr 3.3. BUN 104
Liver profile: nl ,ABG:normal
UA: protein:3+ , wbc:neg , bact:neg , RBC : 3+

Imaging:
CXR: infiltrate suggestive of pneumonia
Renal Ultrasound : Lt kidney: nl , rt kidney :blunt border , edematous swelling , Homogeneous parenchyma
CT Abd : major perfusion defect in rt renal parenchyma with high grade abscessing nephritis,swollen rt kidney,pronounced perirenal stranding
Culture : positive for *E coli , staphylococcus hominis*

Dx: pyelonephritis with concurrent pneumonia

Problem Representation: A 60 year old female with a history of psoriasis on TNF-alpha inhibitor, presented with acute febrile illness,tachycardia,elevated inflammatory markers and leukocytosis.Imaging reveal pneumonia and Rt renal abscess with perfusion defect.

Teaching Points():

Framing the Patient
FEVER -> **IMADE IT** mnemonic (Infection , Malignancy, Autoimmune, Drugs, Endocrine, iatrogenic, Transfusions)
Understanding the timing -> acuity of 4 days
Background of autoimmunity -> immunocompromised state in the context of medications(TB and methotrexat), reactivation of autoimmune disease, reaction from the drugs (durg as the causative agent(ILD, etc) vs drug withdrawal), sequelae of disease itself

Understanding the CRP
ESR CRP discordance -> high CRP Low ESR -> early phase of inflammatory process vs metabolic syndrome picture -> high EST low CRP picture -> underlying subclinical inflammation that is now presenting itself
High CRP in the context of normal procalcitonin -> non-infectious infiltrates, pneumonitis, infarction etc.
High CRP high procal -> malignancy and systemic infection
Physiologically, thyroid C-cells create intracellular procalcitonin as a precursor to calcitonin,
Pathologically, other organs secrete pro-calcitonin due to Bacterial endotoxins & Cytokines (eg IL-2, TNF-a, IL-6)
viral illnesses lead to more IFN-y secretion, which suppresses pro-calcitonin release-> link

Rx vs Dx
Don't miss diagnosis -> pyelonephritis, HLH (macrophage activation syndrome), fever caused by TNF alpha inhibitors
Patient fulfilling SIRS criteria we think about resuscitation before diagnosis -> elevated heart rate, elevated temp, possible source of infection -> specially with tachycardia this is a patient that can decompensate fast
Antibiotic selection -> pseudomonas and MRSA history? , start broad and narrow down further down the line

Approaching the kidneys
autoimmune (Lung-kidney syndromes, vasculitis, post-infectious) vs inflammation of the kidney in a septic picture => Bland UA + positive BC + lung infiltrates -> source in the lungs forming abscess in the kidney => The size of the abscess and severity of infection helps stratify who needs drainage. Most abscesses < 3cm don't need drainage and will improve with abx alone
Polymicrobial infections: high-pressure systems (biliary cholangitis, urinary pyelo from obstruction), aberrant connection (GI-vascular as in undiagnosed tummor), overwhelming the system (ischemic GI tract is vulnerable, Munchausen's patients injecting themselves w/ feces)