Infection or Inflammation

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Outline

- Case Presentations of 4 cases
- Discussions

Case 1

Case 1

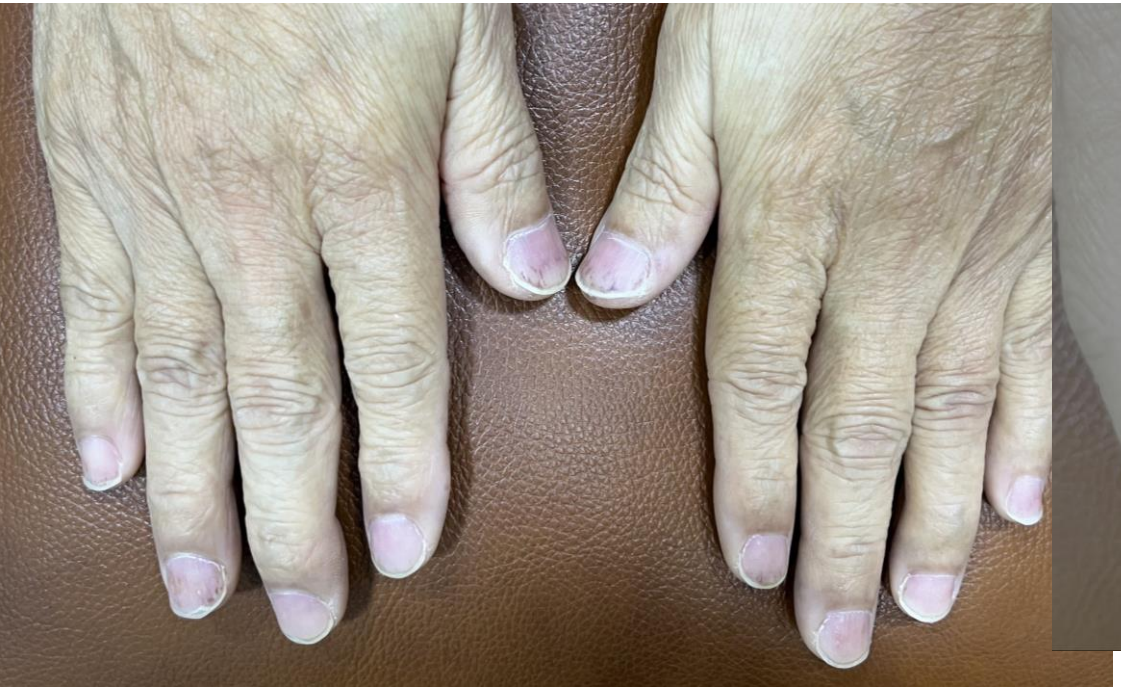
- 65 year old male
- Fever for 2 weeks, low grade, intermittent
- Admitted to private hospital – thorough work up
  - Normal WBC, mild normochromic normocytic anaemia
  - Raised ESR 90 and CRP 84
  - Normal chest x ray and ultrasound abdomen
  - Other blood tests – LFT, U&E , Urine – unremarkable
  - Cultures – blood and urine – no growth
- iv antibiotics for 1 week – still febrile

Case 1

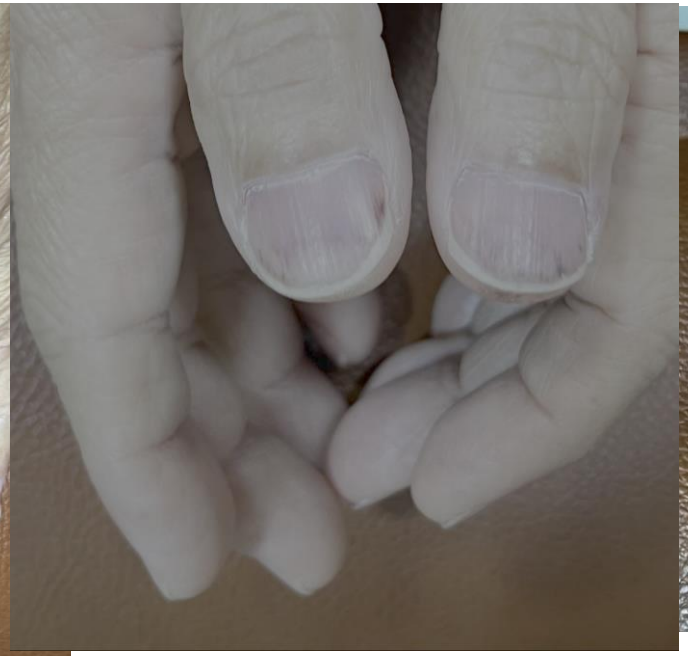
- Still having low grade fever after one week of antibiotics
- Proceeded with auto immune screening
  - ANA – 1/200 speckled pattern
  - ENA profile – PCNA , Histone – borderline positive
  - RA – negative
- Referred for Rheumatology opinion

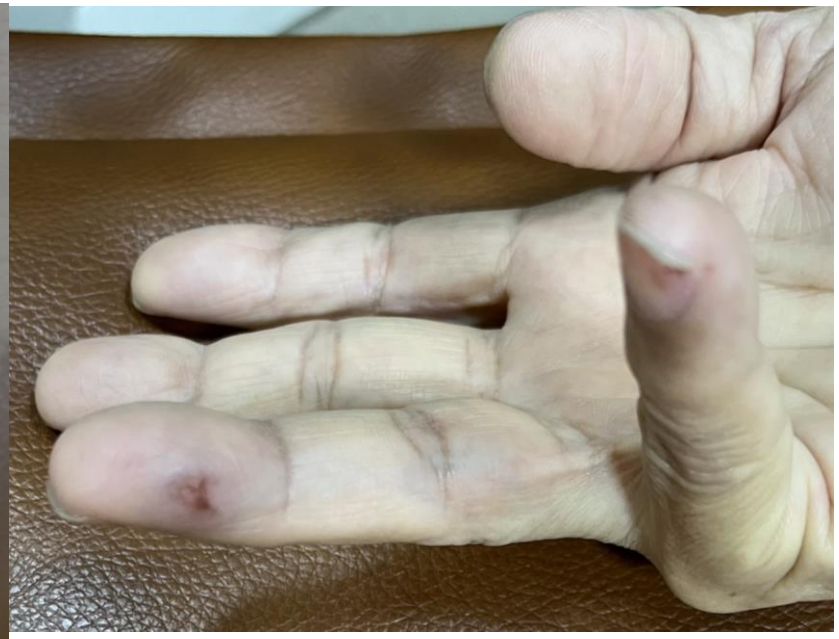
Case 1

Infective Endocarditis



Splinter haemorrhages





Osler's nodes

Case 1

- Proceeded with Echocardiogram – inconclusive for infective endocarditis
- Antibiotics according to infective endocarditis protocol
- Fever subsided gradually
- ESR and CRP back to normal

➢ Learning -
  - ➢ Normal white cell counts – can still be bacterial infection
  - ➢ Raised inflammatory markers and positive autoantibodies – still need to exclude infection

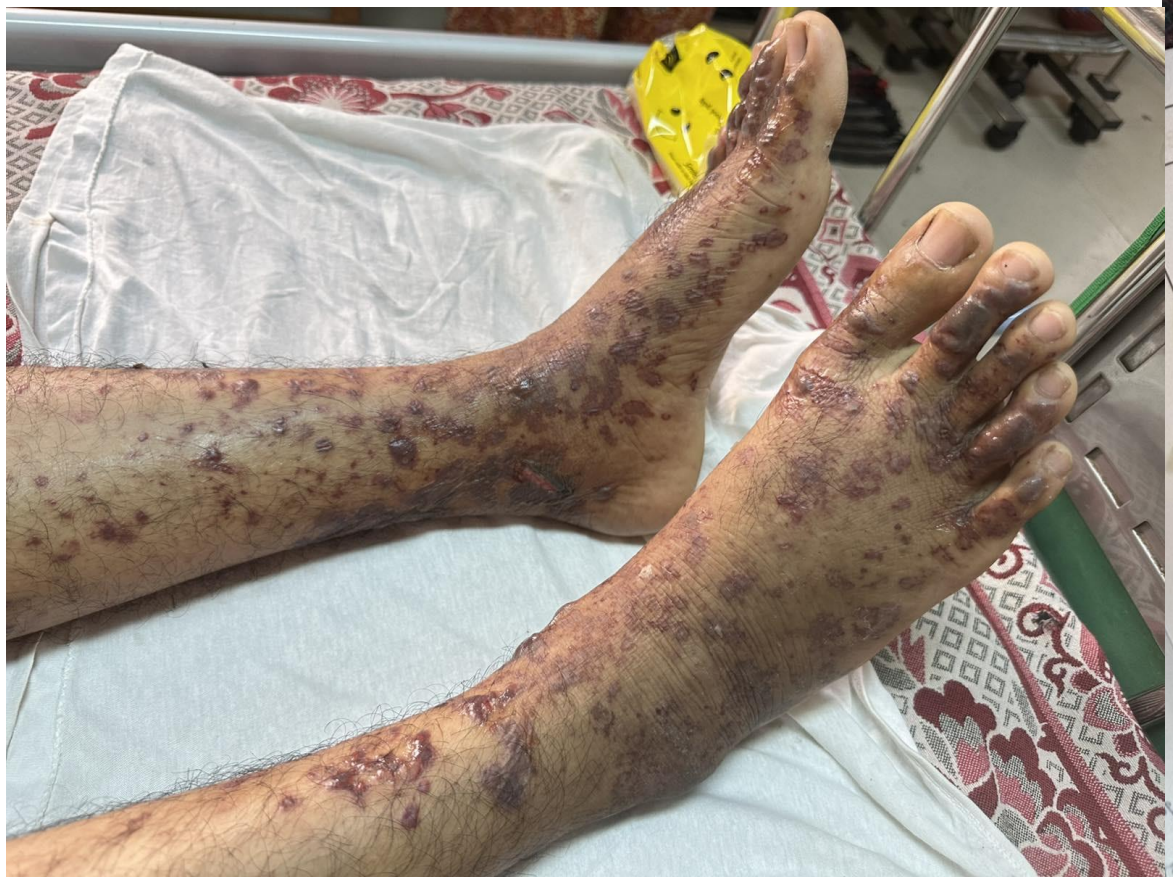
Case 2

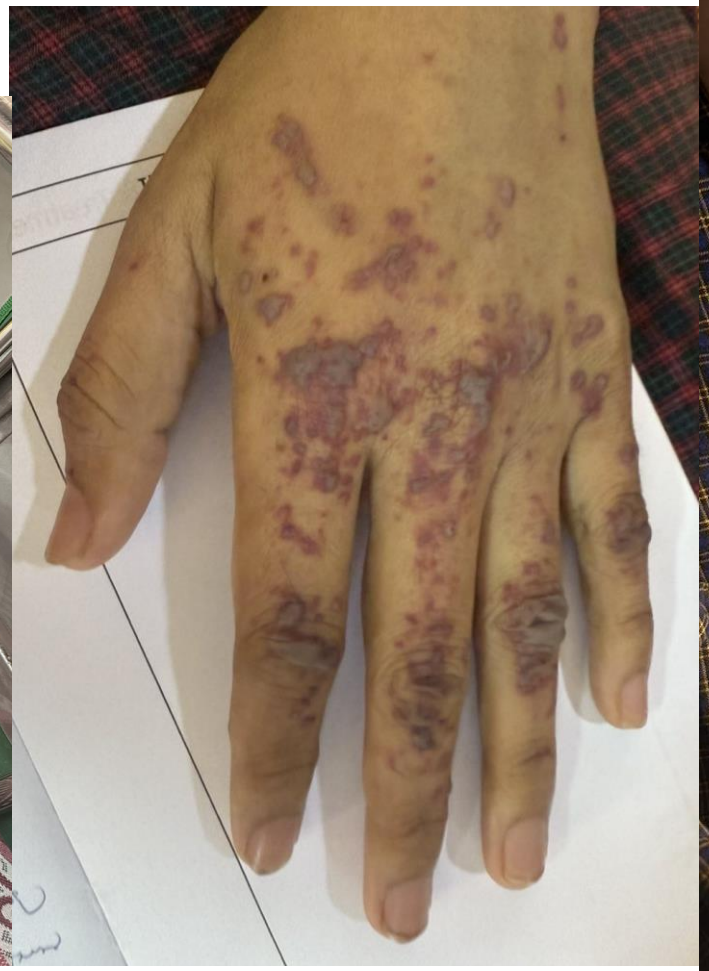
Case 2

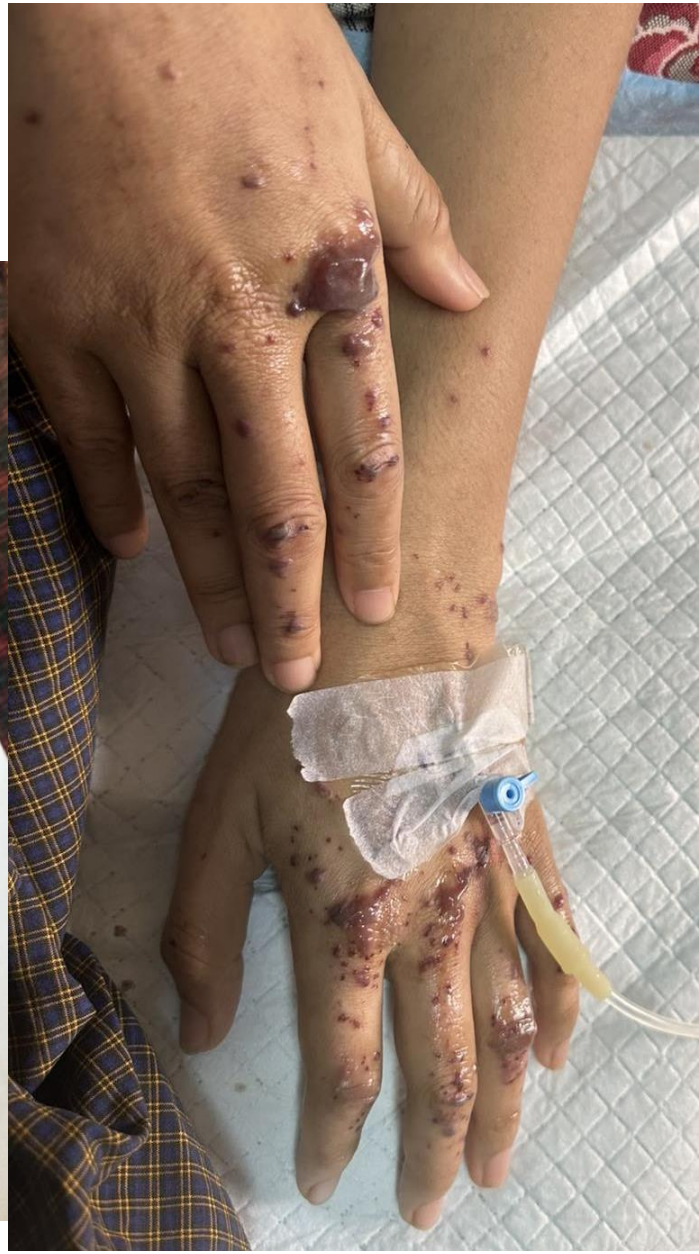
- 32 year old gentleman
- Fever for 7 days
- im Diclofenac , iv antibiotics
- CP – leucocytosis
- ESR and CRP raised
- Developed rashes on limbs – admitted to private hospital
- Systemic vasculitis was suspected – requested for auto antibodies

Case 2

Bullous vasculitic lesions confined to limbs

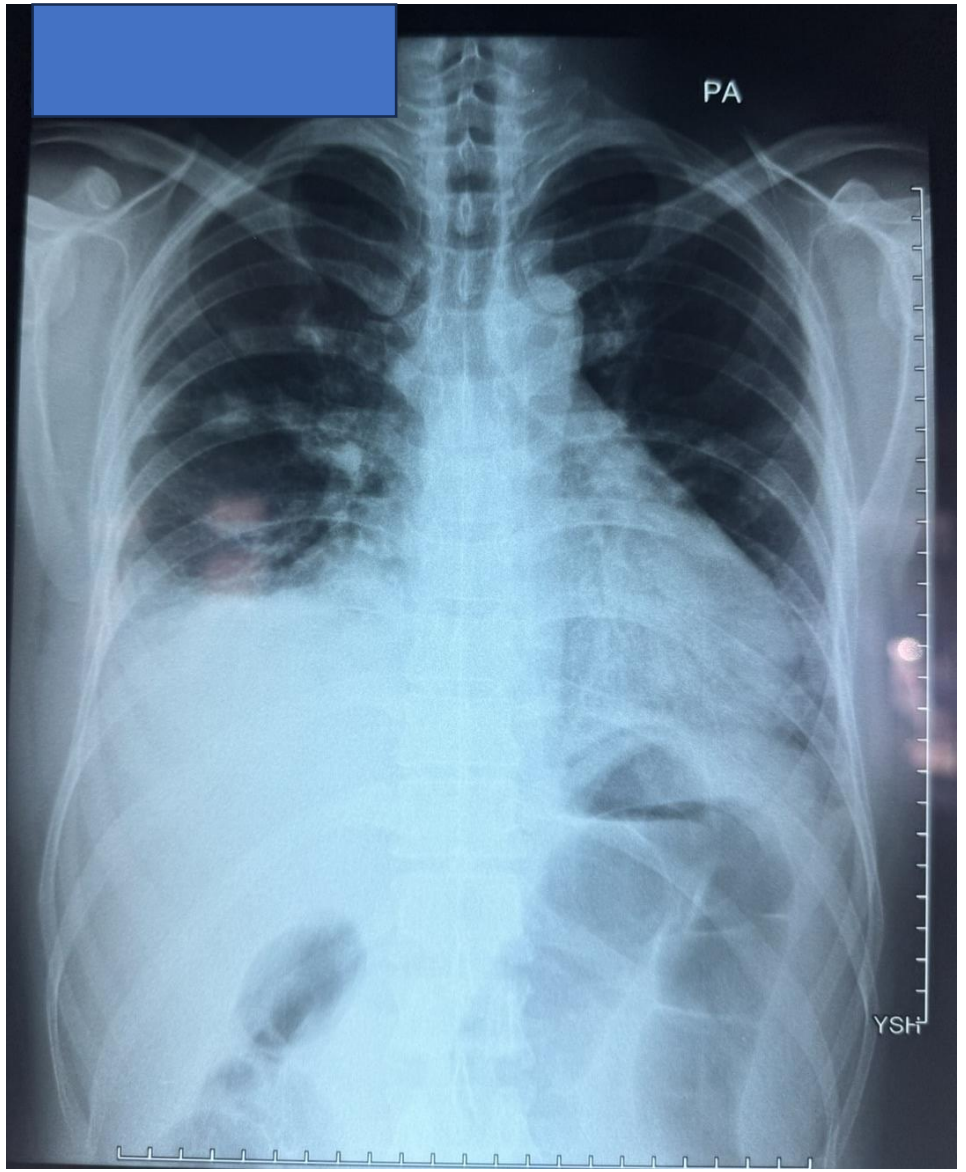






Case 2

- Echocardiogram – vegetations on tricuspid valve, localized pericardial effusion
- CXR – pneumonic consolidations
- Blood culture – Methicillin Resistant Staph Aureus



Organism Quantity: many
Selected Organism : Staphylococcus aureus
BP Infection Site: Other

Source: Blood

Collected: Jan 20, 2025

Comments:	MRSA Phenotype Detected

Identification Information	Analysis Time:	4.62 hours	Status:	Final
Selected Organism	99% Probability	Staphylococcus aureus		
ID Analysis Messages	Bionumber:	050402063363271		

Susceptibility Information — Analysis Time: 8.03 hours — Status: Final

Antimicrobial	MIC	Interpretation	Antimicrobial	MIC	Interpretation
Benzylpenicillin	>= 0.5	R	Levofloxacin	4	R
Ampicillin			Moxifloxacin	2	R
+Amoxicillin/Clavulanic Acid		R	+Norfloxacin		R
+Ampicillin/Sulbactam		R	+Ofloxacin		R
+Piperacillin/Tazobactam		R	+Azithromycin		R
+Cloxacillin		R	Erythromycin	>= 8	R
+Flucloxacillin		R	Clindamycin	<= 0.25	S
Oxacillin	>= 4	R	+Lincomycin		S
+Cefalexin		R	Quinupristin/Dalfopristin	<= 0.25	S
+Cefuroxime		R	Linezolid	2	S
+Cefixime		R	Vancomycin	1	S
+Ceftoperazone		R	+Doxycycline		S
+Cefotaxime		R	Tetracycline	<= 1	S
+Ceftazidime		R	Tigecycline	<= 0.12	S
+Imipenem		R	Nitrofurantoin	<= 16	S
+Meropenem		R	Rifampicin	<= 0.5	S
Gentamicin	8	I	Trimethoprim/ Sulfamethoxazole	<= 10	S
Ciprofloxacin	>= 8	R			

Case 2

- Infective Endocarditis with Staph Aureus on tricuspid valves (suspicious localized pus collection in pericardium) with infective foci spreading to lungs with cutaneous vasculitis as immunological phenomenon
- Not an IVDU, suspected to have infected from im/ iv injection

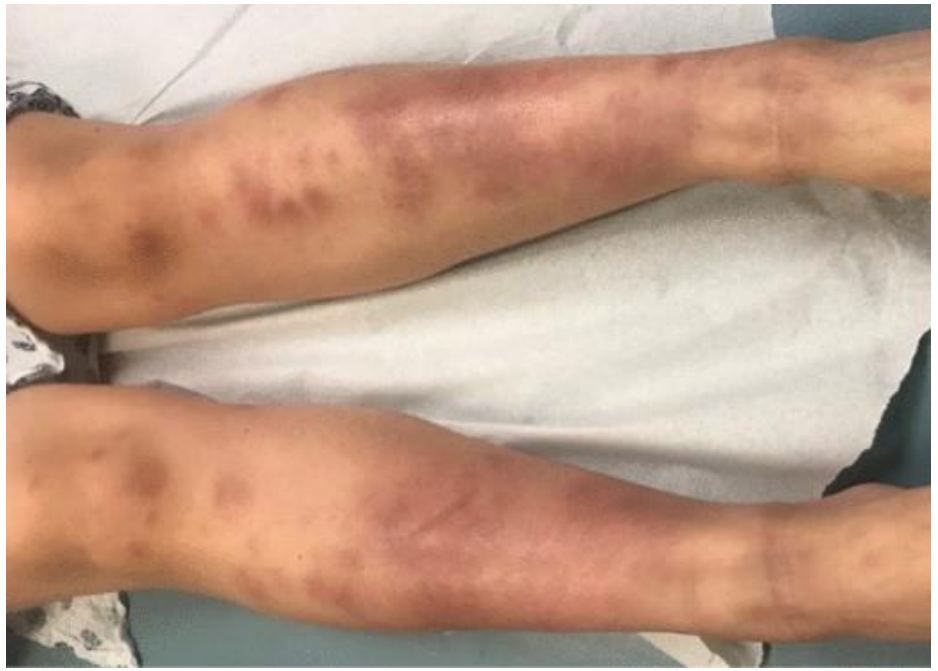
➢Learning

- ➢As auto immune conditions become more recognized recently, it is to aware that the symptoms and signs of infection and auto immune conditions can overlap
- ➢Need strict aseptic measures when delivering iv or im injections

Case 3

Case 3

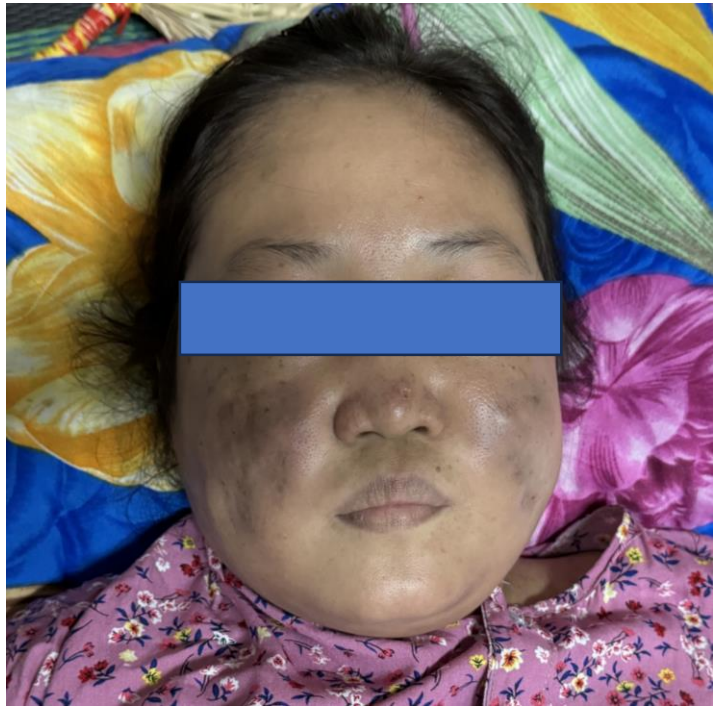
- 32 year old lady
- Painful lesions on legs, later appears on upper limbs, back
- Full blood counts and other blood tests – normal
- ESR mildly raised
- ANA 1/200



❖ Diagnosed as Erythema Nodosum with underlying Undifferentiated Connective Tissue Disorder – steroids, Methotrexate

Case 3

- Worsening of E N lesions – facial involvement
- Consulted with special skin department
- Started on MDT for Hansen's disease



- Still having worsening of E N lesions in spite of MDT
- Added Thalidomide

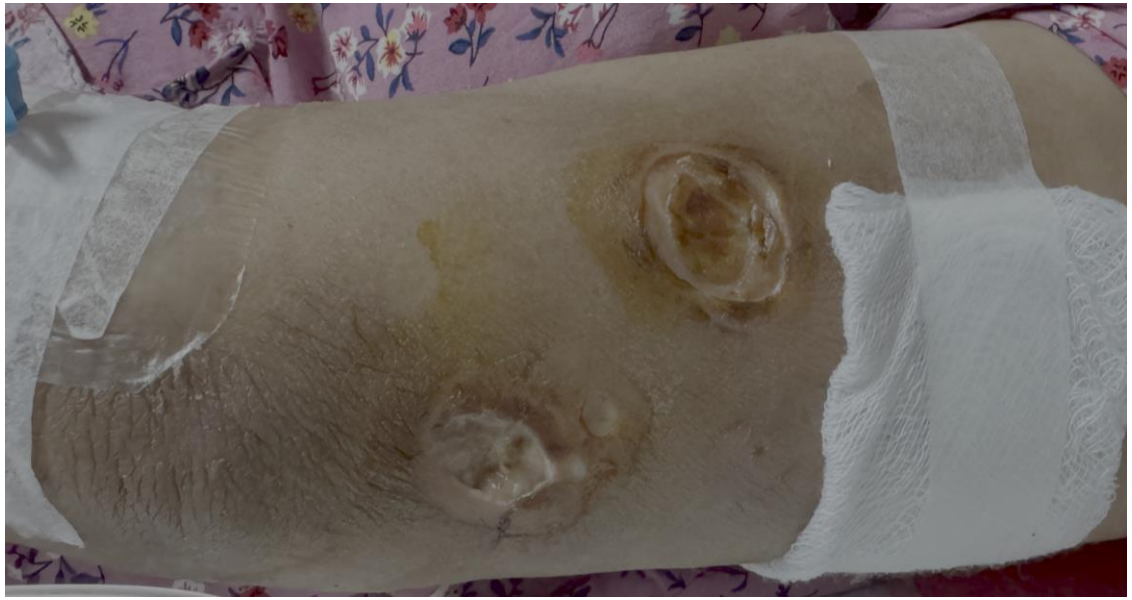
Case - 3

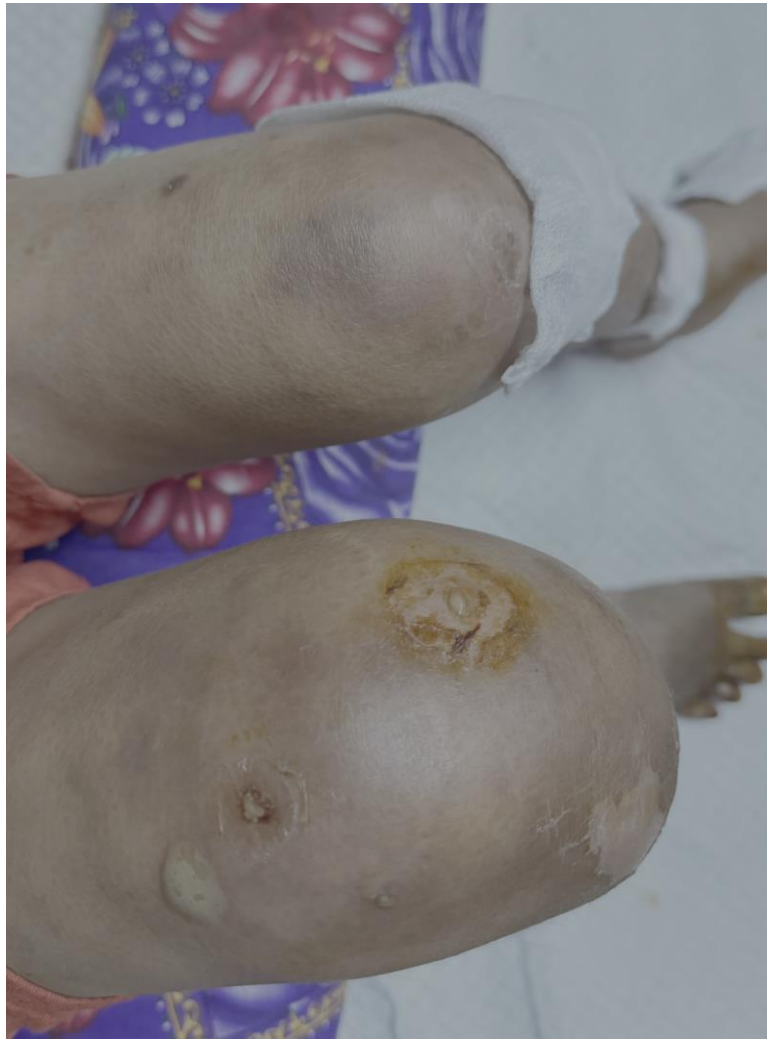
- Frequent worsening of E N lesions along with fever and multiple joint pain
- Given pulse methyl prednisolone when there were flares
- Disease modifying agents – switches – poor response
- Biologic - Tocilizumab – no response
- Admitted again with ulcerations of E N lesions

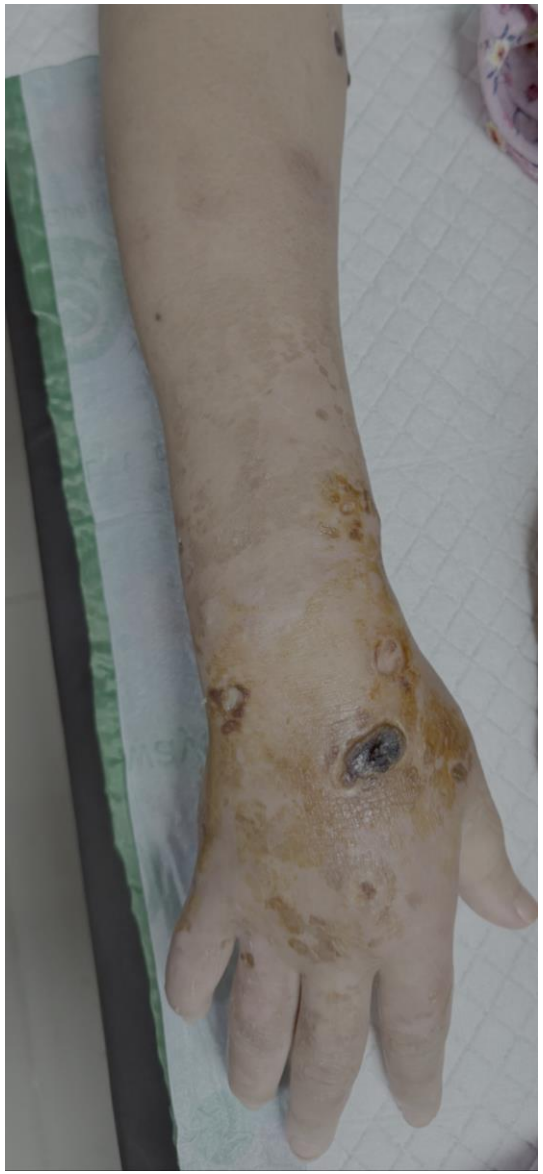
Case 3

Ulcerated E N lesions on limbs

- Wound swab for AFB - positive







Case 3

- Still struggling with frequent flares even after anti TB
- Multiple course of antibiotics for super-added skin infection

➢Learning

➢Cutaneous Tuberculosis – Lupus Vulgaris – diagnosis can be delayed, especially when positive for auto antibodies

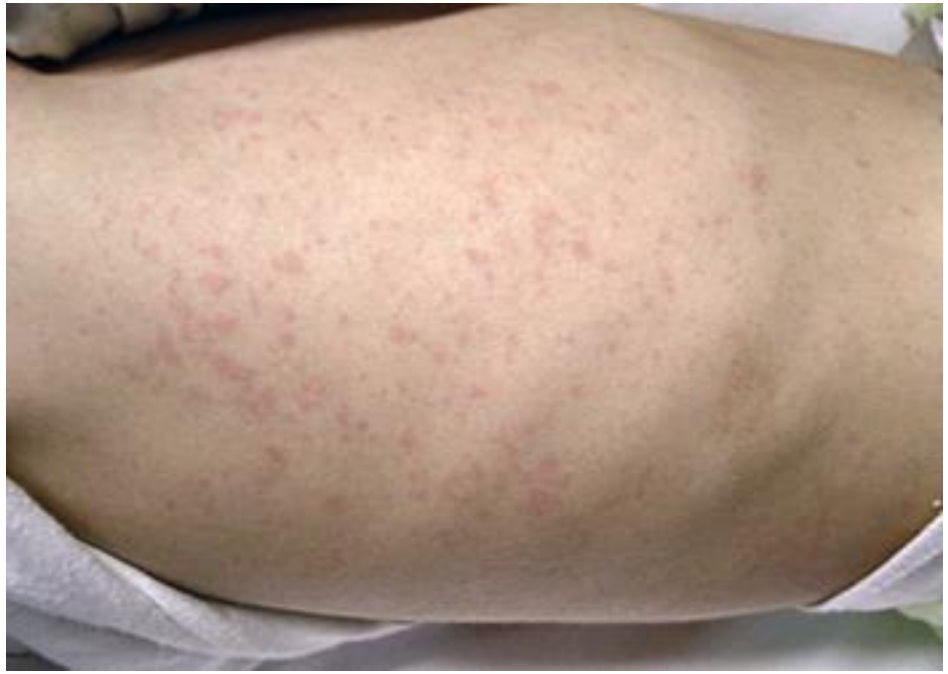
Case 4

Case 4

- 26 year old gentleman
- Fever 2 weeks
- Followed 1 week later by arthritis of left ankle and right knee
- Admitted to district hospital
- Leucocytosis
- Raised ESR > 100 and CRP > 90
- Treated as septic arthritis
- No improvement after 1 week

Case 4

- Febrile
- Rashes on the body
  - Disappear on the next day
- It was also noticed at the district hospital, suspected to be drug allergy and antibiotic was changed at that time
- Auto antibodies - negative



Serum ferritin - highly raised

Case 4

- Adult onset Still's disease
- Responded promptly to steroids along with DMARD

➢AOSD is an auto inflammatory disorder – pathological background is similar to infection as it also stimulates innate immunity

➢Learning

➢Again, there are overlapping features between infection and inflammation

Discussion