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PNEUMONIA – THE SILENT RENAL KILLER

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CASE PRESENTATION

The patient, a 48-year-old woman with no known medical conditions, presented with intermittent fever and dyspnea for two weeks. She also experienced bilateral hand and lower limb swelling for three days, accompanied by purplish spots on both plantar aspects. Initially diagnosed with pneumonia, she was subsequently found to have mixed connective tissue disease and interstitial lung disease based on positive anti-Ribonucleoprotein antibodies, anti-Smith antibodies, and Rheumatoid Factor. Clinically she required nasal prong oxygen support , had a blood pressure of 150/90 mmHg, pulse rate of 88 beats per minute, oxygen saturation of 99%, and was afebrile. Lung examination revealed coarse crepitations on the right side up to midzone, along with bilateral pedal oedema.

INVESTIGATION

Patients' blood investigations were Hemoglobin 9.4g/dl, White Blood Cell 21.4 x 109/ L, Platelet 699 x109/ L, C reactive protein 75.5 mg/L, Urea 19 mmol/L, Creatinine 256 µmol/ L, relatively normal liver enzymes. Cytoplasmic Anti neutrophil Cytoplasmic Antibodies (cANCA) were detected positive while the other repeated immunology panels were negative.

Urinalysis showed blood 3+ , protein 1+ with a Protein Creatinine Index(PCI) of 3g/day. Cytoplasmic Anti neutrophil Cytoplasmic Antibodies (cANCA) was detected positive while the other repeated immunology panels were negative.

DIFFERENTIAL DIAGNOSIS

Initial impression was mixed connective tissue disease with pre renal Acute Kidney Injury (AKI). Differential diagnoses are sepsis induced AKI , Anca related Glomerulonephritis (GN) or Infection related GN.

HISTOPATHOLOGICAL EXAMINATION

Renal biopsy shows a diffuse sclerosing pattern changes with granulomatous nephritis.

A negative Immunofluorescence (IF) study concluded sclerosing and granulomatous form of ANCA related pauci-immune glomerulonephritis.

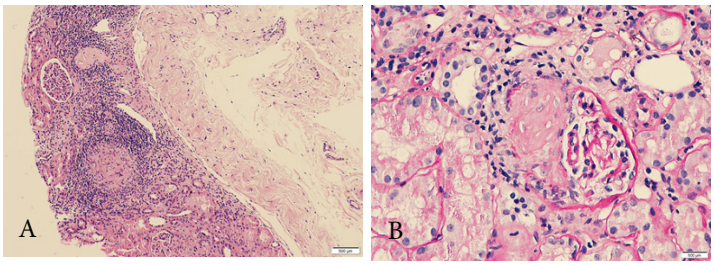

Fig 1.

(A) Part of the Renal biopsy showing global glomerulosclerosis, an intact viable glomerulus and an epithelioid granuloma H&E, 40x (B) A glomerulus showing segmental sclerosis, Periodic acid-Schiff 20x

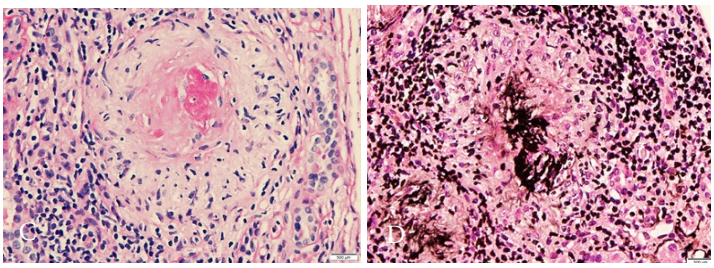

Fig 2.(C&D) Non-necrotizing epithelioid granuloma centered on remnants of glomeruli,

Periodic acid-Schiff 40X and Methenamine Silver 40X

FINAL DIAGNOSIS

Wegener's Granulomatosis@ Granulomatosis Polyangiitis (GPA)

LEARNING POINTS

1. Recurrent chest infections with concurrent AKI indeed raise suspicion for pulmonary-renal syndromes, which encompass a group of disorders characterised by both pulmonary and renal involvement, such as Goodpasture syndrome, ANCA-associated vasculitis, and systemic lupus erythematosus (SLE).
2. Prompt renal biopsy can be crucial in cases where the cause of AKI is uncertain as it provides histological evidence to guide diagnosis and treatment decisions.
3. Interpreting immunological panels in the context of clinical correlation is essential for accurate diagnosis as these tests can have false-positive or false-negative results. Repeated testing may be warranted if initial results are inconclusive or discordant with clinical presentation.