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Images in haematology

A middle-aged lady with proteinuria

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A 37-year-old lady presented with constitutional symptoms and frothy urine for 4 months duration. She had cervical lymphadenopathy with tender hepatomegaly.

Her investigations revealed normal WBC and platelet count, moderate anaemia of Hb 10.5 g/ dL, normal creatinine (52 µmol/ L), normal albumin corrected calcium (2.22 mmol/ L) with no skeletal lytic lesions. UFR revealed albumin 3+ while her 24-hour urine protein excretion was 1555 mg indicating nephrotic range proteinuria. Serum protein electrophoresis showed a monoclonal band in the gamma region with a paraprotein level of 17.7 g/ L and immune fixed as IgG lambda. Involved to uninvolved serum free light chain ratio was 8 with involved lambda light chains of 126.21 mg/ L (4.23 - 27.69). Bone marrow aspiration (Figure 1), trephine biopsy, lymph node (Figures 2.1 and 2.2) and renal biopsies (figures 3.1 and 3.2) led to the diagnosis of AL amyloidosis. She had stage 1 disease (revised mayo clinic staging) as with no cardiac involvement.

She was treated with 9 cycles of CyBorDex (Cyclophosphamide, Bortezomib, Dexamethasone) followed by autologous bone marrow transplant with which she achieved very good partial response haematologically and an organ response with reduction of 24 hour urine protein excretion to 691.6 mg.

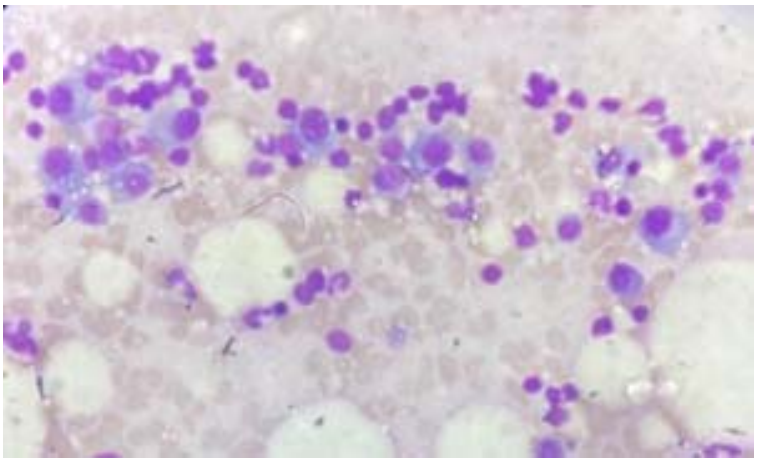

Figure 1. Bone marrow aspirate Leishman stain (10×)

Bone marrow aspirate showing 20% of pleomorphic plasma cells including some bi-nucleated and tri-nucleated forms.

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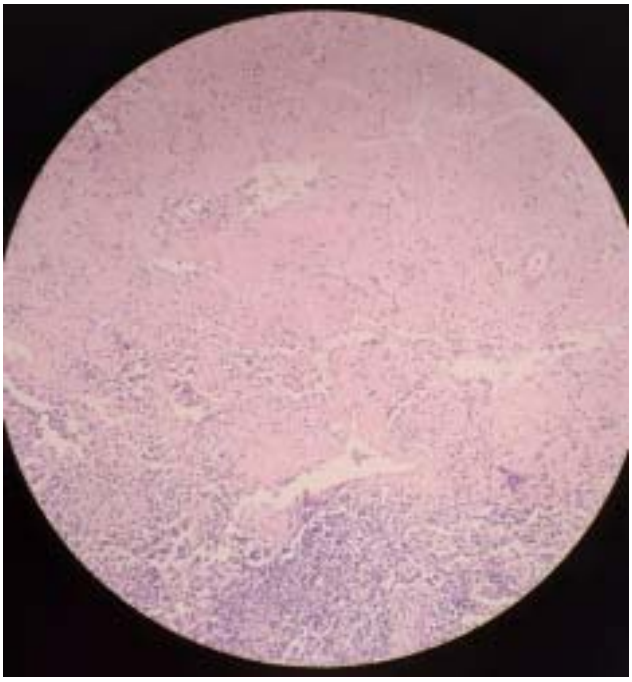

Figure 2.1. Lymph node biopsy
H&E stain (10×)

The interfollicular region is expanded by homogenous, pale eosinophilic hyaline deposits resembling amyloid.

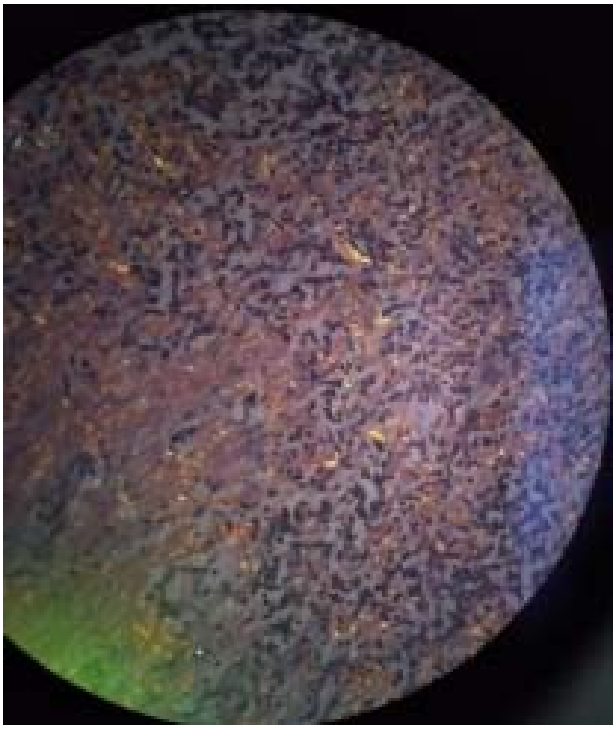

Figure 2.2. Lymph node biopsy Congo red stain (10×)

Apple green birefringence under polarized light, predominantly around blood vessels in keeping with the diagnosis of amyloidosis.

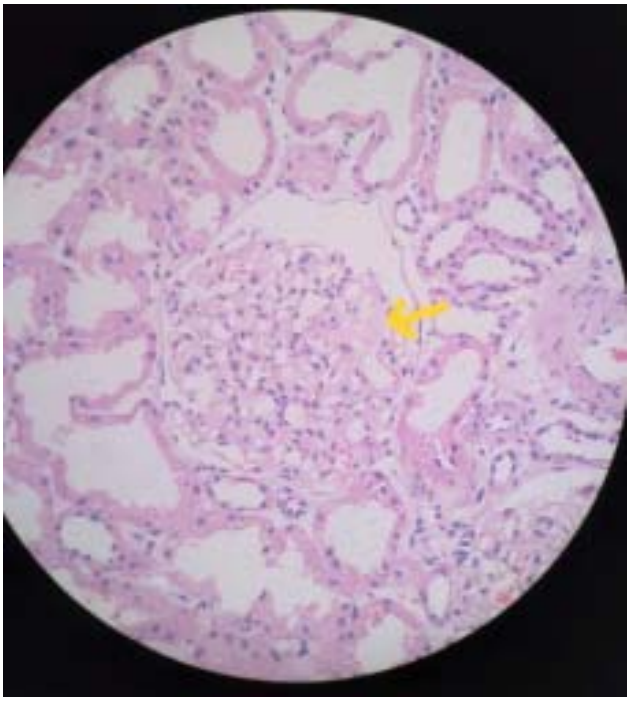

Figure 3.1. Renal biopsy H&E stain (10×)

Some glomeruli show variable mesangial matrix expansionby eosinophilic pale material.

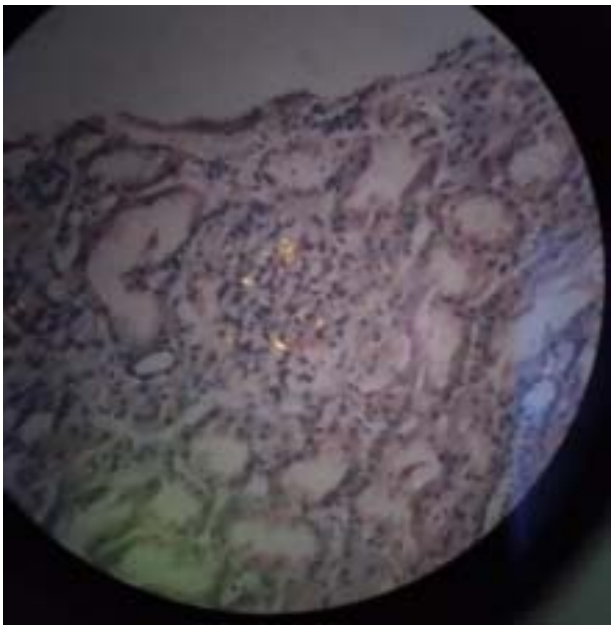

Figure 3.2: Renal biopsy Congo red stain (10 ×)

Apple green birefringence is seen under polarized light around blood vessels and within small amounts of eosinophilic material in the mesangium.

References

1. Bain BJ, Clark DM, Wilkins BS. Bone marrow pathology. Fourth edition 2010: 423-24.