Title

Common Rheumatologic Symptoms Mimicking an Uncommon Disease

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Case Presentation

HPI: A 53-year-old female with a history of hypertension, carpal tunnel syndrome, and irritable bowel syndrome presented for evaluation of fingernail changes for the past three years. The nails had vertical ridges and had cracked to the nail base.

ROS: Positive for bluish discoloration of her fingers on exposure to cold, diffuse alopecia, dry eyes, fatigue, and numbness in both arms and fingers bilaterally, unilateral carpal tunnel release in the prior year.

Physical examination was normal except for vertical ridging of dystrophic nails of the first, second and third digits of both hands, and diffuse alopecia.

Laboratory/Radiology/Pathology

CBC, CMP, TSH, ESR and CRP were unremarkable except for total protein of 5.4 g/dl (normal 6.1-7.9 g/dl). She had a normal serum iron, vitamin B12, folic acid, and chest X-ray. Serologic testing revealed an ANA of 1:1280, nucleolar pattern. Antibodies to SSA, SSB, Smith, RNP, centromere, Scl-70, and dsDNA were negative; C3 was normal and C4 was mildly elevated at 39.7 mg/dL.

Clinical Course: She was initially diagnosed with undifferentiated connective tissue disease (UCTD) and possibly Sjogren's syndrome with keratoconjunctivitis sicca and negative SSA/SSB antibodies. Given her neuropathy, Serum protein electrophoresis (SPEP) was sent and showed an increase in α2-globulin fraction (16.7%) and decrease in γ-globulin level and fraction (0.4 and 7.0%), with an albumin-to-globulin ratio of 1.4. Serum immunofixation also revealed elevated free lambda light chains of 34.22 mg/dl with low free kappa light chains of <0.29 mg/dl and a global decrement of IgG, IgA and IgM. Urine protein electrophoresis and immunofixation were unremarkable.

A bone marrow biopsy was done for further evaluation of the light chain monoclonal gammopathy and revealed normocellular bone marrow with 15% plasma cells and lambda light chain restriction; Congo red staining was negative. Skeletal survey, LDH, and β2-microglobulin were negative. Given her symptoms of carpal tunnel syndrome, bowel issues, fatigue and elevated lambda free light chains, an abdominal fat pad biopsy was performed, revealing positive Congo red staining (Figure 1). Electron microscopic examination revealed clusters of filamentous material with average diameter of 8.7 nm, lined between lipid droplets, compatible with amyloid.

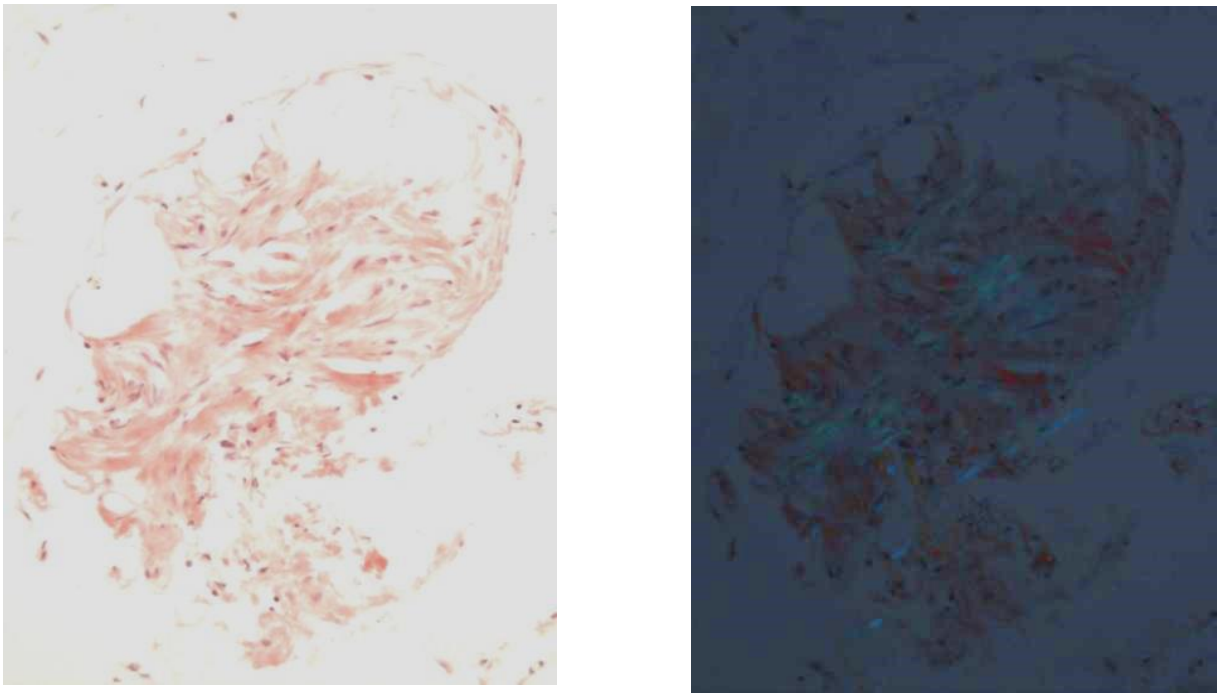

Figure 1. Abdominal fat pad biopsy revealing positive Congo red staining.

The patient was diagnosed with free lambda light chain amyloidosis. For staging, Pro BNP and troponins were ordered and were unremarkable. Cardiac MRI did not show any evidence of amyloidosis. Based on the Revised Mayo Clinic Staging for Light Chain Amyloidosis (2012), she was staged as Stage II. She was treated with 4 cycles of bortezomib and dexamethasone and subsequently underwent autologous peripheral blood stem cell transplantation after melphalan conditioning. The patient returned to her normal level of function with resolution of her initial symptoms. She had noted serological improvement of her ANA titer at 1: 40 compared to 1:1280 at presentation, with no clinical features of autoimmune disease.

Discussion: This case illustrates the many overlapping features of systemic light chain amyloidosis and primary rheumatogical disorders such as SLE and Sjögren syndrome. It also highlights the importance of prompt recognition of the symptoms, physical exam, and laboratory findings of amyloidosis so that appropriate diagnostic procedures are pursued, as an early diagnosis prior to the development of cardiomyopathy is crucial to an optimal clinical outcome.

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