

An Unusual Presentation of Amyloidosis

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Figure 1. MRI showing multiple compression fractures (arrows) along with narrowing of the spinal canal (arrowheads).

A 47-year-old man presented with sudden onset of nontraumatic back pain. MRI showed multiple compression fractures within the thoracic and lumbar spine (Fig. 1). Dual-energy X-ray absorptiometry scan demonstrated osteoporosis. Biochemical studies were unremarkable (normal serum and urine protein electrophoresis, parathyroid hormone, testosterone, 25-hydroxyvitamin D, and 24-hour urine calcium). The patient failed conservative management and underwent a laminectomy with spinal fusion. An iliac crest biopsy was performed intraoperatively to look for secondary causes of osteoporosis.

The biopsy showed replacement of bone marrow with amorphous material which demonstrated apple-green birefringence on polarization (Fig. 2). No monoclonal plasma cells

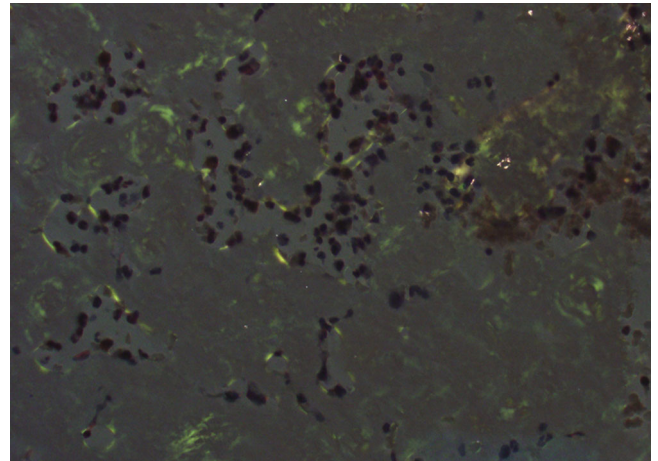


Figure 2. Bone marrow biopsy demonstrating apple-green birefringence on polarization.

were seen. Liquid chromatography-tandem mass spectrometry detected a peptide profile consistent with AL (light-chain)-type amyloidosis. At the time of diagnosis, no other organs were involved; however, two years later the patient developed significant proteinuria and worsening renal function.

Secondary osteoporosis is more common than primary osteoporosis in men and premenopausal women.¹ It is associated with inflammatory diseases, exposures, and nutritional deficiencies that adversely impact bone metabolism. Although bone involvement manifesting as osteoporosis and pathological fractures is rare in AL amyloidosis,² amyloidosis should be suspected when characteristic findings of amyloid are found on biopsy or when substantial proteinuria is present.

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