

# Adult osteomalacia

A treatable cause of “fear of falling” gait



Figure Severe osteopenia



The left hand x-ray suggested the diagnosis of osteomalacia because of the diffuse demineralization.

A 65-year-old man was hospitalized with a gait disorder, obliging him to shuffle laterally<sup>1</sup> (video on the *Neurology*<sup>®</sup> Web site at [www.neurology.org](http://www.neurology.org)) because of pain and proximal limb weakness. He had a gastrectomy for cancer 7 years previously, with severe vitamin D deficiency; parathormone and alkaline phosphatase were increased, with reduced serum and urine calcium and phosphate. There was reduced bone density (figure). He was mildly hypothyroid and pancytopenic. B<sub>12</sub> and folate levels were normal. Investigation for an endocrine neoplasm (CT scan, Octreoscan) was negative. EMG of proximal muscles was typical for chronic myopathy; nerve conduction studies had normal results.

After 80 days' supplementation with calcium, vitamin D, and levothyroxine, the patient walked properly without assistance (video); pancytopenia and alkaline phosphatase improved.

This unusual but reversible gait disorder may have resulted from bone pain and muscular weakness related to osteomalacia<sup>2</sup> and secondary hyperparathyroidism, with a psychogenic overlay.

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1. Kurlan R. "Fear of falling" gait: a potentially reversible psychogenic gait disorder. *Cogn Behav Neurol* 2005;18:171–172.
2. Reginato AJ, Falasca GF, Pappu R, McKnight B, Agha A. Musculoskeletal manifestations of osteomalacia: report of 26 cases and literature review. *Semin Arthritis Rheum* 1999;28:287–304.

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