

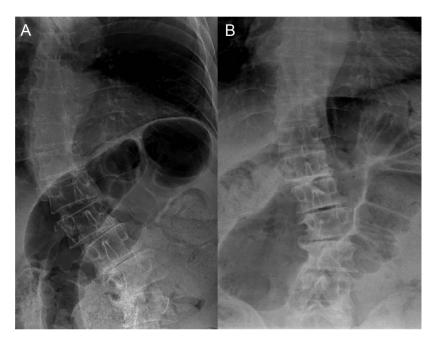
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# Teaching Neuro*Images*: Pisa syndrome in Parkinson disease

Figure Spinogram and supine X-ray



(A) Spinogram while standing shows curvature of over 10°. (B) Supine X-ray confirms significant improvement; however, supine films are still abnormal.

A 68-year-old man with Parkinson disease of 5 years' duration treated with levodopa/carbidopa and ropinirole developed progressive lateral postural flexion of the trunk in the last 6 months, despite adequate control of symptoms. A spinogram showed curvature of more than 10°. The patient was diagnosed elsewhere with scoliosis. On examination in supine position, abnormal trunk posture disappeared almost entirely, ruling out fixed bony deformity. Supine X-ray confirmed significant improvement (figure). In this context, Pisa syndrome may correspond to axial dystonia.<sup>1</sup> Scoliosis and Pisa syndrome are not synonymous, as the latter is typically reducible by passive mobilization or when lying down.<sup>2</sup>

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#### DISCLOSURE

The authors report no disclosures relevant to the manuscript. Go to Neurology.org for full disclosures.

#### REFERENCES

- Tinazzi M, Juergenson I, Squintani G, et al. Pisa syndrome in Parkinson's disease: an electrophysiological and imaging study. J Neurol 2013;260:2138–2148.
- Castrioto A, Piscicelli C, Pérennou D, Krack P, Debû B. The pathogenesis of Pisa syndrome in Parkinson's disease. Mov Disord 2014;29:1100–1107.

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