

# Isolated Toe Tremor Associated with Antiphospholipid Syndrome

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## ABSTRACT

The antiphospholipid syndrome (APS) is defined by the presence of antiphospholipid antibodies and related disorders, generally thromboses, miscarriages, livedo reticularis or heart valve abnormalities. It is thought to have a prevalence of about 40–50 cases per 100,000 in the general population.<sup>1</sup> Several neurological disorders have been associated with APS, most commonly stroke, but non-stroke complications, thought due to autoimmune problems, have been noted, with chorea being the most common. Isolated toe tremor, that is, without any other neurological signs or symptoms, has not been reported. We describe a case of recurrent isolated unilateral toe tremor in an otherwise healthy woman with long-standing APS.

**KEYWORDS:** Toe tremor, antiphospholipid syndrome, APS, APLS

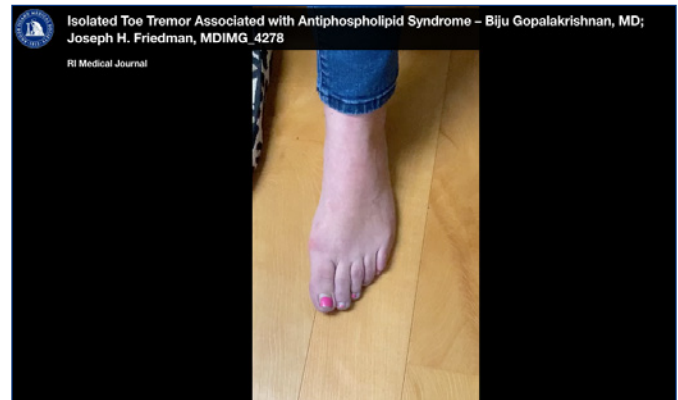
## CASE REPORT

A 32-year-old woman was referred for evaluation of tremors of toes IV and V in one foot, present only when sitting. It was noticed 30 months prior, and had been present continuously when awake but not during sleep, according to her partner. It resolved with standing, applying pressure, and during sleep. They were annoying, but not painful. She had had similar movements at age 18, which resolved after six months. She had a history of epilepsy, limited scleroderma, Raynaud's syndrome and APS diagnosed in 2010, during an evaluation for an ulcer in her little finger. She developed a deep vein thrombosis and pulmonary embolus in 2021 and had been on warfarin since then, with no further thrombotic events. There was no neurological family history and no exposure to dopamine receptor blocking agents or other drugs associated with tremors. Her neurological exam was normal aside from the tremor (**See video**). Video electroencephalogram, brain magnetic resonance imaging (MRI), lumbar spine MRI, dopamine transporter imaging and electromyogram of her leg, were all normal.

## DISCUSSION

We believe these tremors are organic and not functional. We were unable to mimic the movement in ourselves. They

**Video.** Isolated Toe Tremor Associated with Antiphospholipid Syndrome  
<https://vimeo.com/928776563>



did not change with distraction, did not change with stress, were always present when awake, and evoked no secondary gain. We do not think her other disorders can account for the tremors, and thus believe they are related to the APS. Chorea is the most common movement disorder reported;<sup>2</sup> there are also reports of ataxia, dystonia and hand tremors. We could not find any case report describing isolated toe tremors. The mechanism of movement disorders in APS can be secondary to structural brain disorders like strokes or can be immune mediated.<sup>3</sup> Her MRI of the brain was normal, and the localization was too exquisite to reflect a stroke. We believe, but cannot prove, that her movements are immune mediated, although her APS has been otherwise well controlled.

## References

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### Disclosures

**Conflicts of Interest:** None

**Ethical compliance statement:** The authors confirm that the approval of an institutional review board was not required for this work.

Informed consent was obtained from the patient. (Only her toes and foot are visible, no other identification of the patient is present in the manuscript.)

We confirm that we have read the Journal's position on issues involved in ethical publication and affirm that this work is consistent with those guidelines.

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