Teaching Video NeuroImages: Choreoathetosis and Focal Dystonia in Vitamin B<sub>12</sub> Deficiency

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An 87-year-old man presented with involuntary movements of his fingers for three months. Clinical examination showed dystonia with choreoathetosis of his hands and fingers. (video 1) Pin-prick sensation was reduced to ankles and vibration sense was absent up to shoulders and costal margin bilaterally. Investigations revealed hemoglobin of 10.1 g/dL, MCV of 94.6 fl, vitamin B-12 level of < 92 pmol/L and the presence of anti-parietal cell antibody. He was diagnosed with pernicious anemia and treated with intramuscular cyanocobalamin (1000 µg weekly for four weeks then monthly). Reassessment two months later showed significant clinical improvement and normalized vitamin B-12 level of 534 pmol/L. While pseudoathetosis, a slow, writhing movement of the distal extremities seen in severe sensory neuropathy, was also considered, movements did not worsen with eye closure. Severe vitamin B-12 deficiency may result in chorea, myoclonus, tremor and dystonia. [1] These manifestations, possibly a result of basal ganglia dysfunction, are rare but important to recognize as they are largely reversible with supplementation. [2]
## Appendix 1. Authors

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<thead>
<tr>
<th>Name</th>
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<tbody>
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### Video 1 --- [http://links.lww.com/WNL/B427](http://links.lww.com/WNL/B427)

### References


Video 1

Pre-treatment: At rest, there were dystonia and choreoathetoid movement involving the fingers and hands (left more than right). The movements were not distractible with mental counting and did not worsen with eye closure.

Post-treatment: There was significant reduction of the movements after two months of vitamin B-12 replacement.
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