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Teaching Video NeuroImage: Inverted Radial and Wartenberg Thumb Reflex in Cervical Myelopathy

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Tychicus Chen: Drafting/revision of the manuscript for content, including medical writing for content; Major role in the acquisition of data; Study concept or design; Analysis or interpretation of data

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A 75-year-old man developed progressive right-hand weakness over three years. Examination revealed myelopathic hand, inverted radial reflex and Wartenberg thumb reflex (Video 1). MRI demonstrated cervical spondylotic myelopathy (Figure). Surgical decompression stabilized symptoms.

Inverted radial (supinator) reflex is a myelopathic sign localizing to C5-6 [1]. Interruption of C5-6 roots and pathological spread to C8 roots lead to absent brachioradialis contraction with finger flexion[1]. Wartenberg's thumb reflex (distinct from unrelated Wartenberg sign in ulnar neuropathy) is an early sign which may precede pyramidal weakness – when the affected hand applies forceful flexion at the terminal phalanges there is adduction, flexion and opposition of the thumb[2].

[AZ 12.16.2021] 177800 Teaching slides --<http://links.lww.com/WNL/B732>

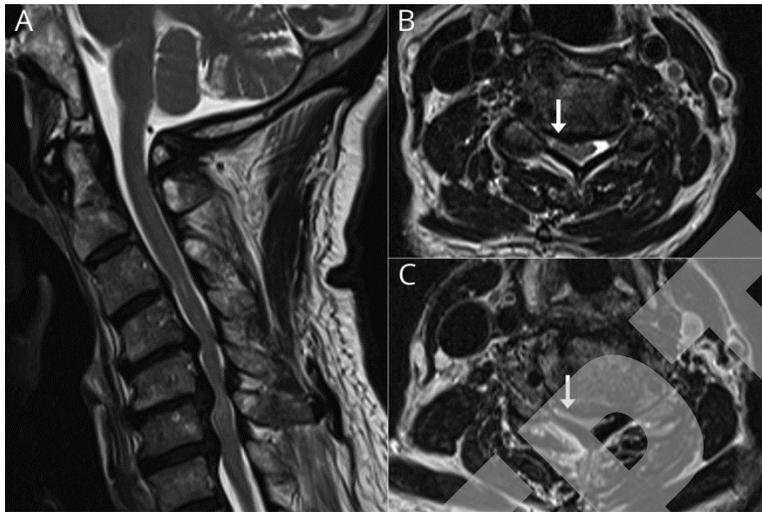
[AZ 12.16.2021] 177800 Video 1 --- <http://links.lww.com/WNL/B733>

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1. Estanol BV, Marin OS. Mechanism of the inverted supinator reflex: A clinical and neurophysiological study. *J Neurol Neurosurg Psychiatry*. 1976 Sep;39(9):905-908.
2. Wartenberg R. *Diagnostic Tests in Neurology: A Selection for Office Use*. Chicago: Yearbook Publishers; 1945. 228 p.

Figure Captions:

Figure: Magnetic resonance imaging of the cervical spine, sagittal (A) and axial (B,C) views, demonstrating severe multilevel degenerative cervical spondylopathy with large disc osteophyte complexes at C4-5 and C5-6 and right-sided spinal canal narrowing with cord compression (arrow).



Video 1: Inverted radial reflex: when tapping the radius, there is absent brachioradialis contraction and hyperactive finger flexion. Wartenberg thumb reflex: when the affected hand applies forceful flexion at the terminal phalanges, there is adduction, flexion and opposition of the thumb; a normal response maintains abduction and extension of the thumb.

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