Teaching NeuroImages:

Differential diagnosis of scapular winging

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Figure 1 Right scapular winging caused by weakness of ipsilateral trapezius (A–C: arrow depicts the upper trapezius atrophy; D: arrow depicts the atrophy in upper trapezius and asterisk depicts the normal infraspinatus on coronal T1-weighted right shoulder MRI), rhomboids (E–G: arrow and asterisk depict atrophy of infraspinatus and rhomboids, respectively), and serratus anterior (H: arrow depicts the contracting lower trapezius causing medial displacement of scapula)

Scapular winging (SW) is caused by weakness of trapezius, rhomboids, and serratus anterior muscles. The different patterns of scapular movement among these causes assist in the differential diagnosis and are illustrated in the 3 described cases (table e-1 on the *Neurology*[®] Web site at www.neurology.org).^{1,2}

Case 1 (figure 1, A–C) presented with right SW (lateral displacement of superior angle that became evident at arm abduction) due to upper trapezius weakness and atrophy that is also evident on shoulder MRI (figure 1D and figure e-1). Case 2 (figure 1, E–G) had right SW (lateral displacement of inferior angle that was accentuated when the patient pushed his elbow backwards against resistance) due to rhomboids weakness. Case 3 (figure 1H) had right SW (medial displacement of scapula that was enhanced during forward arm flexion) due to serratus anterior weakness.

ula that was enhanced during forward arm flexion) due to serratus anterior weakness.

AUTHOR CONTRIBUTIONS

Dr. Tsivgoulis: study design, drafting and revising the manuscript. Dr. Vadikolias: data collection, critical comments during manuscript revision. Dr. Courcoutsakis: data collection, critical comments during manuscript revision. Dr. Heliopoulos: data collection, critical comments during manuscript revision. Dr. Stamboulis: drafting and revising the manuscript. Dr. Piperidou: drafting and revising the manuscript.

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Supplemental data at
www.neurology.org

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