



Why the ‘frozen shoulder’?

By Michael Weier ■ September 30, 2015

On August 5, 2015, the *Journal of Bone and Joint Surgery* reported a study performed by Yusuke Ueda and his colleagues¹ that found *no association between full-thickness rotator cuff tendon tears and frozen shoulder*.² Several prior studies suggest a relationship between rotator cuff tears and frozen shoulder.³ Ueda, however, noted significant ambiguities and critical differences in diagnostic assessments and definitions that question the validity of the prior studies.

Ueda offered greater objectivity for future diagnostic assessments. Moreover, the research study found nothing to dispel the decades-old notion that the cause of frozen shoulder is unknown.

Adhesive capsulitis, also known as frozen shoulder, is a condition characterized by progressive pain and stiffness in the shoulder joint with severe, global loss of motion of unknown etiology.⁴

In 1934, Dr. Ernest Codman⁵ introduced the term “frozen shoulder” and declared, “This entity is difficult to define, difficult to treat and difficult to explain from the point of view of pathology.”⁶ As revealed in the recent study, much of Codman’s statement is as true today as it was more than 80 years ago. Though recent research provides greater diagnostic guidance, one of Codman’s points remains inviolate: *the etiology or cause of a frozen shoulder is unknown*.

Ueda performed a prospective review of 379 patients with mild to global loss of shoulder motion. The researchers objectively evaluated rotator cuff pathology for each patient with use of magnetic resonance imaging or ultrasonography.

The study findings revealed no significant symptomological differences among patients with full thickness rotator cuff tears versus patients without tears.⁷ Pain levels and passive ranges of motion were essentially the same between the groups. Though some patients had partial tendon tears, Ueda declared, “Shoulders with severe and global loss of range of motion at first visit are likely to be cases of idiopathic adhesive capsulitis (frozen shoulder of unknown cause) and may not require further imaging studies.”⁸

Ueda noted prior studies that address the association between rotator cuff lesions and adhesive capsulitis suffered from ambiguity in the definition

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of frozen shoulder. Specifically, the researchers identified unintentional investigator or clinician bias in variation of diagnostic range of motion deficits. Accordingly, Ueda offered criteria for greater uniformity and objectivity in diagnostic findings and symptoms for the diagnosis of adhesive capsulitis or frozen shoulder.

The study and medical literature critique performed by Ueda may have eased Dr. Codman’s warning that “frozen shoulder is difficult to define.” Ueda offers a more uniform approach for diagnosis. Though the recent research study did not address how to treat the condition, Ueda’s findings and assessment do nothing to dispel Dr. Codman’s declaration that the cause of frozen shoulder is unknown. Moreover, the recent research reveals no relationship between rotator cuff tears and frozen shoulder.

The recent study offers workers’ compensation administrators and claims examiners with the medical research evidence to question claims that state:

- Workplace activity caused adhesive capsulitis or frozen shoulder; and
- Frozen shoulder is related to a rotator cuff tendon tear. ■

¹ The study included eight investigative researchers and authors and will be referred to collectively as Ueda.

² Ueda, Yusuke, et al. *Rotator Cuff Lesions in Patients with Stiff Shoulders*. Journal of Bone and Joint Surgery, 2015; 97:1233 (August 5, 2015).

³ Robinson CM, et al. Frozen shoulder. Journal of Bone and Joint Surgery (British volume). January 2012; 94(1):1-9; Rundquist PJ, et al. *Patterns of motion loss in subjects with idiopathic loss of shoulder range of motion*. Clinical Biomechanics (Bristol Avon). October 2004; 19(8): 810-18; Yoo JC. *Magnetic resonance arthrographic findings of presumed stage-2 adhesive capsulitis: focus on combined rotator cuff pathology*. Orthopedics. January 2009;32(1):22; Watson L, et al. *Frozen shoulder: a 12-month clinical outcome trial*. Journal of Shoulder and Elbow Surgery. January-February 2000;9(1):16-22.

⁴ Mayo Clinic Staff, [Diseases and Conditions: Frozen Shoulder](#), Mayo Clinic, ; Roy, A, et al. [Adhesive Capsulitis in Physical Medicine and Rehabilitation](#). Medscape.

⁵ Ernest Amory Codman, MD, FACS, (1869 – 1940), a Boston surgeon and shoulder expert, is the universally-recognized father of evidence-based medicine. See, Brand, RA. [Ernest Amory Codman, MD, 1869 – 1940](#). US National Library of Medicine, National Institutes of Health, National Center for Biotechnology Information, PubMed Central; Mallon, [W. E. Amory Codman](#). American College of Surgeons.

⁶ Roy, *supra*; Codman, EA. *The Shoulder*. New York: G. Miller and Co. Medical Publishers; 1934. P. 216-24.

⁷ Ueda, et al. noted several peer review study authors reported a strong association between rotator cuff lesions and frozen shoulder: Robinson CM, et al. *Frozen Shoulder*. Journal of Bone and Joint Surgery (British volume). January 2012; 94(1):1-9; Rundquist PJ, et al. *Patterns of motion loss in subjects with idiopathic loss of shoulder range of motion*. Clinical Biomechanics (Bristol Avon). October 2004; 19(8): 810-18; Yoo JC. *Magnetic resonance arthrographic findings of presumed stage-2 adhesive capsulitis: focus on combined rotator cuff pathology*. Orthopedics. January 2009;32(1):22; Watson L, et al. *Frozen shoulder: a 12-month clinical outcome trial*. Journal of Shoulder and Elbow Surgery. January-February 2000;9(1):16-22.

⁸ Parenthetical definition added.

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