Surgery and Science of the Rotator Cuff

Editorial Comment

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During the past few decades, both the diagnosis and the treatment of rotator cuff injuries have improved. Despite this, uncertainties remain. For example, when a patient first presents to the clinician's office, we do not have good criteria for deciding whether he or she should be treated nonoperatively. This is the case partly because rotator cuff injuries are common and often minimally symptomatic, especially in the elderly, sometimes making it difficult to determine whether the symptoms in those patients who do come in with shoulder complaints are concordant with (or caused by) findings on imaging tests. And, among those patients who have symptoms, some are able to cope with them. Therefore, most clinicians recommend that treatment begin with nonoperative measures and surgeons see those whose symptoms fail to resolve. However, other clinicians recommend surgery in many of their patients with a cuff

tear for fear of the tear getting more severe over time (ie, tear progression). While most surgeons have experience with an individual returning to their office several years after diagnosis of a small tear that has now become massive, our knowledge of tear progression is limited to a small number of shoulders over short time periods of a few years [3, 9] (Fig. 1).

When rotator cuffs are repaired, many of them (about 25% in some reports) fail to heal [1, 2, 4–8]; thus, we need better repair techniques. These retears occur more often in severe rotator cuff tears, but other factors including the use of NSAIDs may also impair healing. In this symposium, the authors shed light on the answers for some of these problems. My hope for the future is that we can better select those patients needing treatment for their rotator cuff injuries and develop better surgeries that allow more of our patients to heal.

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Fig. 1 Patrick J. McMahon MD.

References

1. Goodman RS. Abnormal findings on magnetic resonance images of asymptomatic shoulders. *J Bone Joint Surg Am.* 1996;77:10–15.
2. Keyes EL. Observations on rupture of the supraspinatus tendon based upon a study of seventy-three cadavers. *Ann Surg.* 1933;97:849–856.
3. Mall NA, Kim HM, Keener JD, Steger-May K, Teefey SA, Middleton WD, Stobbs G, Yamaguchi K. Symptomatic progression of asymptomatic rotator cuff tears: a prospective study of clinical and sonographic variables. *J Bone Joint Surg Am.* 2010;92:2623–2633.
4. Milgrom C, Schaffler M, Gilbert S, VanHolsbeek M. Rotator-cuff changes in asymptomatic adults: the effect of age, hand dominance and gender. *J Bone Joint Surg Br.* 1995;77:296–298.
5. Ozaki J, Fujimoto S, Nakagawa Y, Masuhara K, Tamai S. Tears of the rotator cuff of the shoulder associated with pathological changes in the acromion: a study in cadavera. *J Bone Joint Surg Am.* 1988;70:1224–1230.
6. Reilly P, Macleod I, Macfarlane R, Emery EJ. Dead men and radiologists don't lie: a review of cadaveric and radiological studies of rotator cuff tear prevalence. *Ann R Coll Surg Engl.* 2006;88:116–121.
7. Sher J, Uribe J, Posada A, Murphy B, Zlatkin M. Abnormal findings on magnetic resonance images of asymptomatic shoulders. *J Bone Joint Surg Am.* 1995;77:10–15.
8. Tempelhof S, Rupp S, Seil R. Age-related prevalence of rotator cuff tears in asymptomatic shoulders. *J Shoulder Elbow Surg.* 1999;8:296–299.
9. Yamaguchi K, Tetro M, Blam O, Evanoff BA, Teefey SA, Middleton WD. Natural history of asymptomatic rotator cuff tears: a longitudinal analysis of asymptomatic tears detected sonographically. *J Shoulder Elbow Surg.* 2001;10:199–203.