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## JBJS CLASSICS

# ANTERIOR ACROMIOPLASTY FOR THE CHRONIC IMPINGEMENT SYNDROME IN THE SHOULDER

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*Appeared in JBJS Vol. 54-A, pp. 41-50, January 1972  
(available at jbjs.org as Supplementary Material to this JBJS Classic)*

### Summary

**Impingement on the tendinous portion of the rotator cuff by the coraco-acromial ligament and the anterior third of the acromion is responsible for a characteristic syndrome of disability of the shoulder. A characteristic proliferative spur and ridge has been noted on the anterior lip and undersurface of the anterior process of the acromion and this area may also show erosion and eburnation. The treatment of the impingement is to remove the anterior edge and undersurface of the anterior part of the acromion with the attached coraco-acromial ligament. The impingement may also involve the tendon of the long head of the biceps and if it does, it is best to decompress the tendon and remove any osteophytes which may be in its groove, but to avoid transplanting the biceps tendon if possible. Hypertrophic lipping at the acromio-clavicular joint may impinge on the supraspinatus tendon when the arm is in abduction and, if the lip is prominent, this joint should be resected. These are the principles of anterior acromioplasty.**

### Commentary

Why was this article selected as a classic orthopaedic reference?

Many articles are published in the medical literature, but few appreciably change the way we practice orthopaedics. Neer's article, which introduced the "impingement syndrome" and recommended acromioplasty to treat this condition, is one of the articles we still reference and discuss thirty years later.

Neer dissected 100 cadaveric scapulae from donors who had been in their sixth decade or older at the time of death, and he noted excrescences along

the anterior-inferior rim of the acromion in a large number of shoulders that also had rotator cuff derangement. He concluded that this part of the acromion rubbed against the supraspinatus when the arm was abducted and caused the rotator cuff to tear over time. He later resected this part of the acromion in fifty shoulders in forty-six patients. He also repaired a complete tear of the rotator cuff in twenty shoulders and performed a resection of the distal part of the clavicle in two patients. Neer re-examined twenty-nine of the forty-seven shoulders between nine months

and five years after surgery. He found symptomatic relief in a large percentage of patients. As a result of this article, impingement syndrome is now listed as a diagnosis in ICD-9 and acromioplasty has a Current Procedural Terminology (CPT) code.

How has the information in the article withstood the "test of time"?

Neer believed that impingement causes rotator cuff tears. This hypothesis does not appear to have withstood the test of time. It is more likely that rotator cuff dysfunction results in upward displacement of the humeral head and causes impingement of the humeral head against the acromion with shoulder use rather than the reverse. Arthroscopy and magnetic resonance imaging arthrography have elucidated many conditions that cause shoulder pain and that previously have been misdiagnosed as impingement. The liberal use of acromioplasty to treat "impingement" is being replaced by a trend toward making an anatomic diagnosis, such as a partial or a complete tear of the rotator cuff, and performing corrective surgery, such as repair of the torn rotator cuff.

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doi:10.2106/JBJS.8706.cl

Many classic, landmark articles have been published in *The Journal* in the past. Quarterly, we will be publishing summaries of selected articles, along with a contemporary commentary by a knowledgeable member of the editorial board identifying the article's significance in orthopaedics and its continuing relevance to our practices. Please let us know of a classic *Journal* article that you believe should be summarized and commented upon in the future.

J.D.H.