Current Evidence Fails to Show Differences in Effectiveness Between Conservative and Surgical Treatment of Subacromial Impingement Syndrome


Question: In patients with subacromial impingement syndrome (SIS), how do conservative and surgical treatment compare for improvement of shoulder function and reduction of pain?

Data sources: Studies were identified in MEDLINE, EMBASE/Excerpta Medica, Physiotherapy Evidence Database (PEDro), and the Cochrane Central Register of Controlled Trials from database inception to October 2007. Reference lists of relevant articles were reviewed.

Study selection and assessment: Studies were included if they were randomized controlled trials (RCTs) comparing subacromial decompression with conservative treatment in patients over 18 years of age with SIS (confirmed by a positive impingement test result) who had been resistant to conservative treatment for 3 months. Methodological quality of the RCTs was assessed with use of a modified 11-item quality list based on the Cochrane Handbook. Studies were considered high quality if ≥7 items scored positively, medium quality with 4 to 6 positive items, and low quality with 0 to 3 positive items.

Main outcome measures: Outcomes of interest were all measures of shoulder function or pain.

Main results: 4 RCTs (n = 323; follow-up range, 6 months to 2 years) described in 6 reports met the inclusion criteria. 2 RCTs were classified as medium quality and 2, as low quality. Meta-analysis was not done because of variations in outcome measures and the presentation of results. The trials were summarized according to a qualitative best-evidence synthesis that classified the evidence as strong, moderate, limited, or no or insufficient. Among the 4 trials, the conservative treatment consisted of physiotherapy regimens (relaxed repetitive movements; application of heat, cold packs, or soft-tissue treatments; strength training and education; and hospitalization with intensive physiotherapy training supported by anti-inflammatory drugs and corticosteroid injections). Most patients improved with either conservative treatment or surgery, with no significant differences between groups. The best-evidence synthesis resulted in a classification of no or insufficient evidence to detect differences in pain and shoulder function between conservative and surgical treatment for SIS.

Conclusion: In patients with subacromial impingement syndrome, current randomized, controlled trial evidence shows no difference in outcomes of shoulder function or pain between surgical and conservative treatment.

Source of funding: No external funding.

For correspondence: Dr. O. Dorrestijn, Department of Orthopedic Surgery, University Medical Center Groningen, P.O. Box 30.001, 9700 RB Groningen, The Netherlands. E-mail address: o.dorrestijn@orth.umcg.nl

Commentary

Dorrestijn and colleagues identified four studies of low to medium quality, characterized by a high degree of variation in outcomes, treatments, and potential selection bias, to compare the outcomes of operative and nonoperative treatment for subacromial impingement syndrome. All studies showed improvement in outcomes regardless of the approach used (operative compared with nonoperative), and the authors state that no confident conclusions can be made as to which treatment is better.

This review raises a number of considerations. First, unlike many diagnoses that are based on distorted anatomy, impingement syndrome is a diagnosis based on physical examination. Many different conditions could produce a positive impingement test (e.g., rotator cuff tendinosis, rotator cuff tear, calcific tendinitis, and acute and chronic subacromial bursitis), and perhaps some would respond better to surgery while others to physical therapy. Second, radiographic findings used in determining a diagnosis are no different from those seen in age-matched asymptomatic patients in a control group. When the diagnosis is not clearly defined and may reflect a variety of disorders, it is difficult to discern differences in treatment responses.

Third, as both nonoperative and operative treatments may be effective in treating this disorder, we need to know which patients will respond to the different treatments. Prospective cohort studies designed to look at and determine the features that might predict the success or failure of a treatment are needed before further randomized controlled trials are performed.

This well-done review of the best evidence raises some concerns about the value of surgical treatment but is more useful to direct future studies than in helping us to manage our patients.

John E. Kuhn, MD
Vanderbilt University Medical School
Nashville, Tennessee

Reference


Disclosure: The author did not receive any outside funding or grants in support of his research for or preparation of this work. Neither he nor a member of his immediate family received payments or other benefits or a commitment or agreement to provide such benefits from a commercial entity.