

Cuff Integrity Key

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At 6-month follow-up, the woman demonstrated remarkable restoration of range of motion and internal rotation, he said.

"The key with this operation ... is that the patient has to have to an intact rotator cuff. I assess cuff integrity usually just by physical examination, but I won't hesitate to get an ultrasound or MRI if necessary," he said, noting that most patients with OA will have an intact rotator cuff.

"The main problem is just that the joint is irregular and the cartilage is just completely gone," he said. RA patients can benefit from this operation as well.

A recent study comparing total shoulder arthroplasty

outcomes in 24,212 patients without RA and 1,186 patients with RA showed that the complication rate in both groups was less than 1%, and that length of stay was actually shorter in the RA patients at 3.7 days vs. 4.2 days (*J. Shoulder Elbow Surg.* 2011;20:77-85).

In patients who are not candidates for total shoulder replacement, another option is a hemi-arthroplasty procedure in which half of the joint is replaced. This procedure is common, and although data show that it is not nearly as effective in terms of pain relief and patient satisfaction as is complete joint replacement, it still can provide relief and improved range of motion.

In his presentation, Dr. Saltzman described a case involving a 69-year-old woman with RA who had severe medial erosion and loss of joint space.

Total shoulder arthroplasty was not an option because of the lack of glenoid bone to support it, but hemi-arthroplasty was successful for pain reduction (she rated her pain 0 out of 10 on a visual analogue scale following the surgery), and her function was substantially improved.

These outcomes are not unusual, he said. In one study, for example, 102 patients who underwent total shoulder replacement surgery experienced significant improvements in their ability to perform prespecified shoulder functions. Patients successfully performed 4 of 12 functions (lifting a gallon jug of milk onto a shelf, etc.) before the operation, and were able to complete 9 of 12 post-operatively, he said (*J. Bone Joint Surg. Am.* 2002;84:1349-53). That study also showed that women present as candidates for surgery about a decade later than do men (at an average age of 73 years vs. 62 years).

Other data have demonstrated that shoulder replacement surgery is associated with lower mortality, lower complication rates, shorter hospital stays, and lower costs, compared with knee and hip

replacements. A 2007 study showed that in 994 shoulder, 34,471 knee, and 15,414 hip replacement patients, respectively, mortality was 0%, 0.16%, and 0.18% (*Clin. Orthop. Relat. Res.* 2007;455:183-9). Complication rates were 7.55% (shoulder), 14.7% (knee), and 15.5% (hip). Lengths of stay were 2.42 days for the shoulder replacement patients, compared with just over 4 days for the knee and hip replacement patients. Mean hospital charges were \$10,351, \$14,674, and \$15,442 (for shoulder, knee, and hip procedures, respectively).

Most patients and physicians aren't very familiar with it. That will change soon, Dr. Saltzman said. "It's definitely coming with the baby boomers and we're really going to be seeing more and more of this."

Data from 2002 show that about 23,000 shoulder replacements were performed, compared with about 400,000 knee replacements, but more recent data suggest the number of shoulder replacements will increase by about 250% by 2015.

Dr. Saltzman disclosed financial relationships with Arthrex, Carefusion, and DJO Surgical. ■

With the coming of the baby boomers, patients and physicians alike will become familiar with total shoulder replacement, which has been off their radar heretofore.

Shoulder Arthroplasty Improves Pain, Function

BY SHARON WORCESTER

FROM A SYMPOSIUM SPONSORED BY THE AMERICAN COLLEGE OF RHEUMATOLOGY

CHICAGO – Reverse shoulder arthroplasty provides a surgical option for improving pain and ability in patients who have both arthritis and massive rotator cuff tear.

Before the procedure was approved in the United States in 2005, patients with this combination of conditions were very difficult to manage. "We didn't have a solution for this problem for many, many years, but now I think we really do," said Dr. Matthew Saltzman, an orthopedic surgeon specializing in shoulder and elbow surgery at Northwestern University, Chicago.

Reverse shoulder arthroplasty basically changes the mechanics of the shoulder. It involves putting the ball in the socket, and putting the socket where the ball used to be, he said, adding that it's "a strange concept, but it actually works."

"With reverse shoulder arthroplasty, you're actually medializing the center of rotation, and this can be done to varying degrees depending on the implant design," he said, explaining that the procedure changes the tension on the deltoid muscle and allows the deltoid, rather than the irreparable rotator cuff musculature, to lift the arm.

Dr. Saltzman described two cases involving elderly women who underwent the surgery and had excellent outcomes at 6-12 months. One was an 84-year-old who presented with a massive cuff tear as well as arthritis-related joint damage and

loss of the joint space. Like many patients with these conditions, she had severe pain, pseudoparalysis of the shoulder, and resulting lack of function; she was able to lift her arm to only about 20 degrees.

At 6 months after the operation, she had no pain and was able to elevate her arm and rotate the arm out to the side.

The other patient was an 86-year-old who had previously lived independently, but who had slipped on ice and sustained multiple fractures of her shoulder. Although her problem wasn't arthritis related, the reverse shoulder arthroplasty was successful, and she was able to return to independent living.

Findings from a study involving 240 consecutive reverse shoulder arthroplasty procedures in 232 patients (average age, nearly 73 years) showed that average forward elevation increased from 86 degrees to 137 degrees, and average constant score (a validated measure of shoulder function) improved from 23 to 60 at the latest follow-up, indicating substantial improvement, Dr. Saltzman said (*J. Bone Joint Surg. Am.* 2007;89:1476-85).

In that study, patients with cuff tear arthropathy, osteoarthritis plus cuff tear, or massive cuff tear fared better, whereas those with post-traumatic arthritis and those undergoing revision arthroplasty had worse outcomes.

Dr. Saltzman disclosed that he serves on the speakers bureau of Carefusion, has made paid presentations for DJO Surgical, and has received research support from Arthrex. ■

Carotid Intima Thickness Predicts Coronary Events in RA

BY AMY ROTHMAN SCHONFELD

FROM A RHEUMATOLOGY MEETING SPONSORED BY NEW YORK UNIVERSITY

NEW YORK – Imaging seems to be the sine qua non of determining cardiovascular disease risk in patients with rheumatoid arthritis.

Dr. Jeffrey D. Greenberg noted that, over the last 10-15 years, epidemiologic studies have shown patients with rheumatoid arthritis (RA) have a twofold increase in the risk of myocardial infarction and stroke and an increase in cardiovascular-related deaths.

"An important issue we face is how can we risk stratify our patients to predict who will develop cardiovascular disease? Imaging is a promising area that may help us develop biomarkers of risk or better understand pathophysiological mechanisms of RA," said Dr. Greenberg, who is director of the Arthritis Translational Registry and Bioreposito-

ry at NYU Hospital for Joint Diseases.

The need for precise tools with which to predict risk has become more urgent with the recently published findings that carotid ultrasound measurement of carotid intima-media thickness has been found to predict coronary events in patients with RA, independent of traditional cardiovascular risk factors and manifestations of RA.

The study, conducted by Dr. Matthew R. Evans and his associates at Brooke Army Medical Center, Fort Sam Houston, Tex., found that there appears to be a dose-dependent relationship between plaque and risk, with a 2.5-fold increase with unilateral plaque and 4.3-fold increase with bilateral carotid plaque, suggesting that atherosclerosis plays a significant role in acute coronary events in patients with RA (*Arthritis Rheum.* 2011 [doi:10.1002/art.30265]).

In discussing Dr. Evans's research at his presentation at the meeting, Dr. Green-

berg said that this is the first study to demonstrate the predictive value of measuring carotid intima-media thickness and plaque for cardiovascular events in RA patients.

In the Evans study, carotid ultrasounds were performed on 636 RA patients as part of the prospective ORALE (Outcome of Rheumatoid Arthritis Longitudinal Evaluation). These patients were followed for 3,402 person-years and in that time 84 patients experienced 121 new or recurrent acute coronary syndrome (ACS) events, such as myocardial infarction, unstable angina, cardiac arrest, or death from ischemic heart disease. The rate of ACS events was 3.5/100 patient-years for this group. If only those without a prior history of ACS were analyzed, this group had 66 ACS events, with an incidence of 2.1 ACS/100 person-years.

Multivariate analysis of baseline factors associated with incident or recurrent

acute coronary syndromes revealed that two markers were independent predictors of a subsequent coronary event. Having a past cardiovascular event raised the risk almost threefold (hazard ratio, 2.87) and carotid intima-media thickness also raised the risk significantly (HR, 1.61). After substituting carotid plaque for intima-media thickness, the investigators found a 2.5-fold increase in risk for unilateral plaque and almost a 6-fold increase in risk for bilateral plaque.

The findings confirmed that traditional demographic and cardiovascular risk factors also predict coronary events as would be expected. These include male gender (HR, 1.94), diabetes (HR, 2.24), and hypertension (HR, 1.56). Measures of RA severity, such as swollen joint counts (HR, 1.03) and cumulative prednisone dose of 20 g (HR, 2.12) also had predictive value.

Dr. Greenberg receives consulting fees from Genentech Inc. ■