A GUIDE FOR EMPLOYERS

Using Comparative Effectiveness Research

JUNE 2011

National Business Group on Health

Rotator Cuff Tears in Adults

This guide provides actions suggested by the National Business Group on Health for employers who want to use comparative effectiveness research (CER) findings on treatments for rotator cuff tears in their health plans. It is based on research funded by the Agency for Healthcare Research and Quality (AHRQ). For more information about rotator cuff tears, see the "Resources" section at the back of this guide.

Impact on Employers

Rotator cuff tears are significant primarily for employers who have employees with manual jobs. This includes construction workers, delivery truck drivers, mail room clerks, carpenters, painters, and any employees at risk for falls or other workplace injuries. These workers may injure their rotator cuff through frequent repetitive motions such as lifting or moving objects or falls from substantial heights. Improper lifting techniques can exacerbate these injuries or make them occur more quickly.

What Are Rotator Cuff Tears?

The rotator cuff is a group of four muscles on the shoulder blade with tendons that attach to the "ball" of the humerus (upper arm bone). These muscles and tendons help lift and rotate the arms and hold the ball of the humerus firmly in the shoulder socket. Rotator cuffs can tear from injury, overuse from repeated actions over time such as lifting or throwing, or from natural wear and tear as a result of aging. Symptoms of rotator cuff tears include limited movement; mild, moderate or sharp pain; swelling; cracking and/or stiffness.

Rotator cuff injuries can also develop gradually from repeated wear and tear, especially in older populations. Symptoms develop gradually, too, and they can often be mistaken for typical aches and pains of aging. As a result, rotator cuff tears often go ignored for long periods until they become more serious and may require more intensive treatment.

Currently, the most common practice for treating rotator cuff tears is a period of nonoperative treatment, followed by surgery if the injury has not healed. This is a common practice in order to avoid the risks associated with surgery, such as prolonged pain, blood loss, anesthesia problems, infection and muscle damage. Although there are some situations in which early surgery may be optimal, such as a sudden or severe injury, early surgery has generally not been proven to be more effective than the practice of nonoperative treatment followed by surgery, if necessary.

Agency for Healthcare Research & Quality

Comparative Effectiveness Research Findings

In 2010, the AHRQ Effective Health Care Program funded a systematic review of 137 clinical studies which examined evidence on the effectiveness and safety of operative and nonoperative treatments for rotator cuff tears. The following findings are based upon this review, entitled *Comparative Effectiveness of Nonoperative and Operative Treatments for Rotator Cuff Tears*. The findings are the basis for the consumer and clinician guides published in October 2010.

Main research findings:

Research has determined that the practice of nonoperative treatment followed by surgery (if necessary) is as effective as early surgical intervention. Studies show that both operative and nonoperative treatments of rotator cuff tears demonstrate improvements. There is also no clear operative or nonoperative technique that is clearly superior to another.

Treatment Options and Findings

Early surgery versus nonoperative treatment followed by surgery: Patients who seek treatment for rotator cuff tears commonly receive 6 to 12 weeks of nonoperative treatment, which may include pain management, rest, physical and occupational therapy, oral medications and steroid pills or injections. If this is ineffective or the tear is traumatic, the patient will undergo surgery. This process was compared with early surgical repair without nonoperative treatments.

Finding:

- Significant improvements were seen for both approaches. Some studies indicated that early surgical repair can result in better outcomes, but these results were too limited to make conclusive recommendations.

Operative interventions: The study examined several surgical procedures, primarily arthroscopic surgery, open surgery, and mini-open surgery.

Findings:

- The studies found that arthroscopic, open and mini-open surgery all demonstrated improvement.
- Some studies indicated that employees return to work approximately one month earlier with the less invasive mini-open repair instead of an open repair.
- Studies found that open repair resulted in greater functional improvement than debridement (open or arthroscopic).

Operative Interventions

- **Arthroscopic surgery:** The surgeon makes small incisions into the shoulder muscle and uses an arthroscope, a small tube attached to a camera and tiny surgical instruments, to repair the muscular tear.
- **Open surgery:** The surgeon makes a large opening in the shoulder muscle and repairs the rotator cuff tear with regular instruments.
- **Mini-open surgery:** The surgeon uses an arthroscope for the first part of surgery, and then widens the opening to finish the repair with other surgical instruments. This opening is usually not as large nor does it affect the muscle as much as with open surgery.
- **Open debridement:** The surgeon makes a large incision and uses surgical instruments to remove loose tendon, bone or cartilage fragments in the joint.
- **Arthroscopic debridement:** The surgeon makes a small incision and uses an arthroscope to remove loose tendon, bone or cartilage fragments in the joint.

Nonoperative Interventions

- **Physical and occupational therapy:** A therapist assists a patient through a curriculum of exercises and stretches to improve function and strengthen shoulder muscles.
- **Oral medications:** Medicines such as acetaminophen or nonsteroidal anti-inflammatory drugs (NSAIDs) such as ibuprofen or naproxen may help reduce pain and inflammation.
- **Steroid pills or injections:** Doctors will also sometimes prescribe steroid pills or injections to reduce inflammation and pain.

Nonoperative interventions: The studies assessed several nonoperative interventions, including physical and rehabilitation therapies, oral medications and steroid injections.

Finding:

- Many of these treatments showed improvement in function and reduced pain, but no treatment decisively demonstrated better results than another.

Operative versus nonoperative interventions: The studies assessed various types of interventions. Nonoperative interventions included steroid injection, stretching, shock-wave therapy, oral medications, physical therapy, modified activity and strengthening. Operative interventions included mini-open, open, arthroscopic debridement or open repair with acromioplasty.

Finding:

- The interventions all demonstrated significant improvements in symptoms and function.
- Although there was a trend suggesting better outcomes with surgery, the evidence was too limited to make conclusive recommendations.

Postoperative rehabilitation: The studies assessed rehabilitation therapies following surgery, comparing physical therapy with and without passive motion.

Finding:

- The therapies all demonstrated improvement in recovery and no therapy demonstrated conclusively better results than another. Some evidence suggested that continuous passive motion led to earlier return to work, but this was not conclusive.

Still Unknown

More research on rotator cuff tears is needed to understand the following:

- Relative effectiveness of nonoperative treatments;
- Relative effectiveness of open, mini-open and arthroscopic procedures;
- Effectiveness of augmentation (muscle grafts);
- Long-term effectiveness of treatments; and
- Influence of patient factors on treatment choice.

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Strategies for Employers

Employers can educate their employees about shoulder injury prevention and treatment options for rotator cuff tears including the relative risks and benefits of different procedures.

The most common practice for rotator cuff tears is 6 to 12 weeks of nonoperative treatment followed by surgery, if necessary. However, certain cases may benefit from early surgery. It is important for employees to make this decision with their doctor based on the seriousness of the injury and individual preferences. Below is a checklist that employers can follow to encourage prevention and informed treatment decisions with regard to rotator cuff tears.

Education on Prevention and Safety

- Provide signs and messages promoting workplace safety to minimize on-site injuries.
- Keep the workplace clean, dry, and well-lit to decrease the risk of injuries.
- Train employees on the proper use of workplace equipment, particularly anything that creates the risk of a fall, including ladders, step stools and boom lifts. Falling on an outstretched hand is a common cause of rotator cuff tears. Training employees on how to properly use high-risk equipment can minimize falls in the workplace.

Education on Shoulder Injuries

- Provide resources and educational materials on rotator cuff tears and other shoulder injuries at events such as health fairs and/or electronically through the company's intranet or health plan portal.
- Educate manual laborers, especially those who perform frequent repetitive motions, on proper lifting techniques and ways to avoid excessive shoulder wear and tear.
- Encourage employees to use information and decision support tools available through their health plan or through employer-sponsored services such as nurse advice lines, health coaches, navigators and expert opinion offerings.

Guiding Employees in Selecting Treatments

- Make patient decision aids available to employees and dependents. Some model patient decision-aids for rotator cuff tears are listed in the "Resources" section at the end of this guide.
- Promote your expert medical opinion program. If you contract with an expert medical opinion or second opinion service, heavily promote its availability to employees.
- Ensure that nonoperative treatments such as physical therapy are available to patients. Clearly communicate benefit limits and appeals processes.

- Encourage use of Centers of Excellence (COE) or other facilities/physicians recognized for orthopedic care. Providers should counsel employees who have had surgery on proper aftercare, including diet, medication adherence, icing, exercise and returning to work. Most doctors agree that a patient should undergo rehabilitation therapy after rotator cuff surgery; however, evidence is too limited to endorse a particular type of therapy.
- Actively manage disability for timely return to work.

Conclusion

Rotator cuff tears are primarily a problem for employers with a high population of manual laborers who perform frequent, repetitive motions, or who are prone to falls and other workplace injuries. The most common practice for rotator cuff tears is 6 to 12 weeks of nonoperative treatment followed by surgery, if necessary. However, early surgical intervention is sometimes necessary for severe or exceptional cases. Employers should educate their employees on workplace safety and prevention. They also should encourage employees to seek information from their health plans and work with their doctors in deciding what is best for them.

Resources

Rotator cuff problems: Should I have surgery?
Healthwise
www.healthwise.com

Questions are the Answer
Agency for Healthcare Research and Quality
This is an easy-to-use consumer website that helps patients take an active role in their health care by asking questions so that they understand their condition and options.
http://www.ahrq.gov/questionsaretheanswer/

For Free Print Copies of the Consumer and Clinician Guides

AHRQ Publications Clearinghouse – 800.358.9295

Treatment Options for Rotator Cuff Tears: A Guide for Adults, AHRQ Pub. No. 10(11)-EHC050-A

Comparative Effectiveness of Interventions for Rotator Cuff Tears in Adults: Clinician Guide, AHRQ Pub. No. 10(11)-EHC050-3

Comparative Effectiveness of Nonoperative and Operative Treatments for Rotator Cuff Tears: Executive Summary, AHRQ Pub. No. 10-EHC050-1

REFERENCES

[1] Baring T, Emery R, Reilly P. Management of rotator cuff disease: specific treatments for specific disorders. *Best Practice & Research*. 2007;21(2):279-294.

[2] Harvie P, Ostlere SJ, The J et al. Genetic influences in the aetiology of tears of the rotator cuff. *J Bone Jt. Surg*. 2004;86-b:696-700.

[3] Cigna: Healthwise. Rotator cuff repair. http://www.cigna.com/healthinfo/hw62048.html. Accessed on May 18, 2011.

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About the National Business Group on Health

The Business Group is the only non-profit organization devoted exclusively to representing large employers' perspectives on national health issues and providing solutions to its members' most important health care and health benefits challenges. The Business Group fosters the development of a safe health care delivery system and treatments based on scientific evidence. Members share strategies for controlling costs, improving patient safety and quality of care, increasing productivity and supporting healthy lifestyles.

National Business Group on Health

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