

The CTA Prosthesis for Shoulder Arthritis Combined with Massive Rotator Cuff Tear When the Shoulder Is Stable

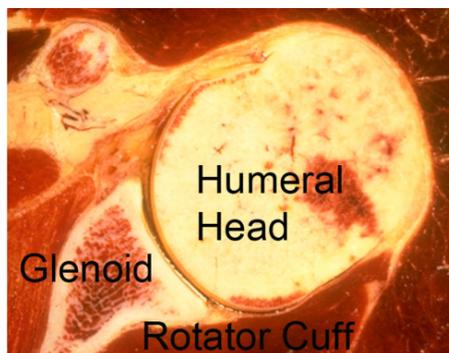
Follow: shoulderarthritis.blogspot.com

For questions, please email: matsen@uw.edu or warmewj@uw.edu.

The cuff tear arthropathy (CTA) prosthesis can restore comfort and function to the arthritic shoulder combined with a massive rotator cuff tear as long as the shoulder is stable. This combination of conditions can result in major loss of comfort and smoothness of the shoulder. The CTA prosthesis can restore smoothness and comfort to the shoulder as long as the coracoacromial arch remains intact. In this procedure the arthritic ball is replaced by a smooth metal ball with an extended joint surface that fits within the socket of the shoulder. Success requires technical excellence of the surgery and a commitment to the rehabilitation program until the desired range of motion can be achieved comfortably.

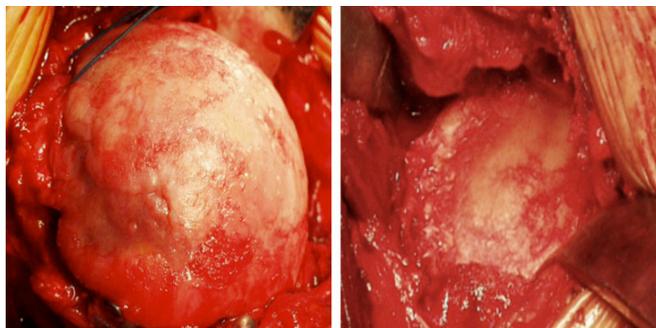
What Are The Key Parts Of The Normal Shoulder Joint?

The ball (humeral head) fits in the socket (glenoid) and is held there by the rotator cuff



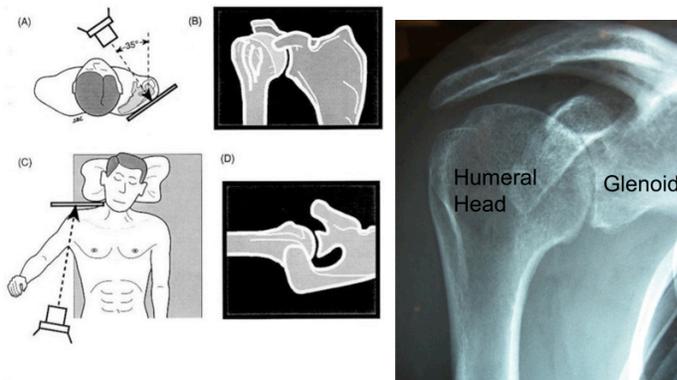
What Is Shoulder Arthritis?

Shoulder arthritis is a condition in which degeneration, injury, inflammation or previous surgery destroys the normally smooth cartilage on the ball (humeral head) and socket (glenoid).



How Is Shoulder Arthritis Diagnosed?

Carefully standardized X-rays reveal the loss of the space between the humeral head and glenoid that is normally occupied by cartilage, leaving bone on bone contact.



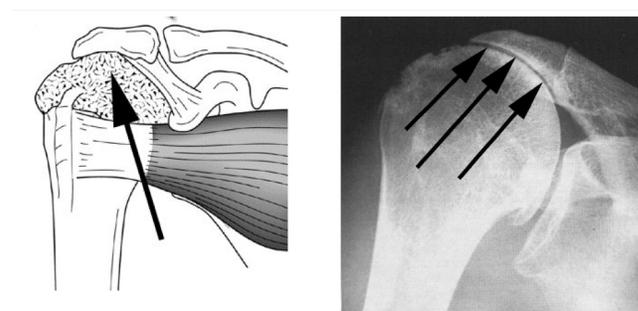
What Is A Conventional Total Shoulder?

In a conventional total shoulder, the arthritic surface of the ball is replaced with a metal ball with a stem that is press fit in the inside of the arm bone (humerus) and the socket is resurfaced with a high density polyethylene component.



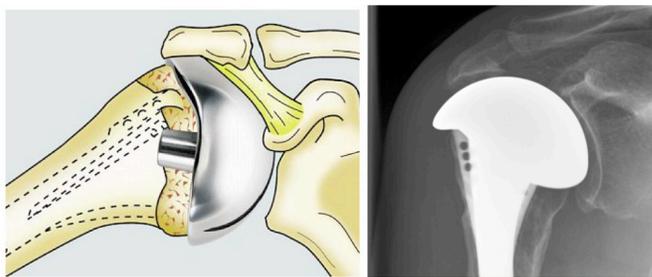
What Is Rotator Cuff Tear Arthropathy?

In rotator cuff tear arthropathy, the upper aspect of the ball of the shoulder (humeral head) comes into abnormal contact with the under surface of the shoulder cap (coracoacromial arch) because the rotator cuff tendons are no longer interposed between them. In this situation a conventional total shoulder cannot be used because of the increased risk of failure of the plastic socket. As long as the coracoacromial arch remains intact, the shoulder may be stable and capable of active motion, even though that motion is painful and rough.



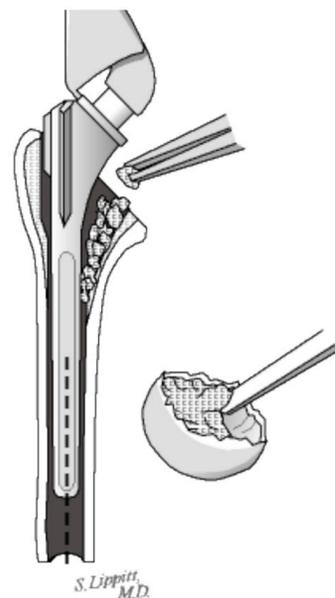
What Is Cuff Tear Arthropathy Prosthesis?

The cuff tear arthropathy (CTA) prosthesis is replacement for the damaged ball (humeral head) that has an extended surface to fit in the coracoacromial arch. It has a stem that fits down the shaft of the arm bone (humerus). An artificial socket is not usually used with this prosthesis.



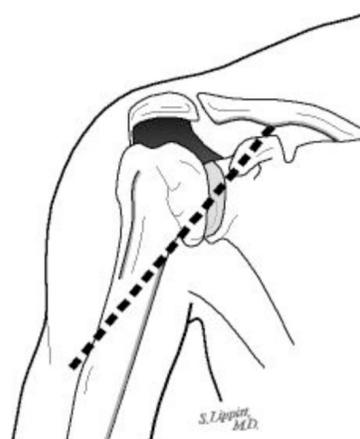
How Is The Humeral Component Fixed In The Humerus?

While some surgeons cement the humeral component and others use implants that foster bone ingrowth, we find that these approaches stiffen the bone making it more likely to fracture in a fall on one hand and greatly complicating any revision surgery that may become necessary in the future on the other. We prefer to fix the component by impaction grafting the inside of the humerus (using bone harvested from the humeral head that has been removed) until a tight press fit of the implant is achieved.



What Is The Incision Like?

After a general or regional anesthetic, this procedure is performed through an incision between the deltoid and the pectoralis major muscles on the front of the shoulder. It includes release of adhesions and contractures and removal of bone spurs that may block range of motion. Our team of surgeons, anesthesiologists, and surgical assistants usually perform this procedure in less than two hours.



Who Should Consider A CTA Prosthesis?

Surgery for shoulder arthritis and rotator cuff deficiency should only be considered when the condition of the shoulder is limiting the quality of the patient's life and after a trial of physical therapy and mild analgesics to determine if non-operative management is helpful. If severe disability persists, patients may consider the CTA prosthesis, provided the shoulder has the necessary stability. The ideal patient is healthy, active, motivated and committed to complying with the rehabilitation program.

Who Should Probably Not Consider A CTA Prosthesis?

This procedure is less likely to be successful in individuals with depression or obesity. Patients who use narcotic medication or who use tobacco may have increased difficulty recovering from this procedure.

What Are The Keys To Success Of A CTA Prosthesis?

Success requires technical excellence of the surgery and a commitment by the patient to follow the rehabilitation program prescribed by the surgeon.

How Does A Patient Prepare For A CTA Prosthesis?

As for all elective surgical procedures, the patient should be in the best possible physical and mental health at the time of the procedure. Any heart, lung, kidney, bladder, tooth, or gum problems should be managed before surgery. Any infection may be a reason to delay the operation. Any skin problem (acne, scratches, rashes, blisters, burns, etc) on the shoulder or arm should be resolved before surgery. The shoulder surgeon needs to be aware of all health issues, including allergies as well as the non-prescription and prescription medications being taken. For instance, aspirin and anti-inflammatory medication may affect the way the blood clots. Some of these may need to be modified or stopped before the time of surgery.

What Happens After Surgery?

The CTA prosthesis is a major surgical procedure that involves cutting of skin, tendons and bone. The pain from this surgery is managed by the anesthetic and by pain medications. Immediately after surgery, strong medications (such as morphine or Demerol) are often given by injection. Within a day or so, oral pain medications (such as hydrocodone or Tylenol with codeine) are usually sufficient. The shoulder rehabilitation program is started on the day of surgery. The patient is encouraged to be up and out of bed soon after surgery and to progressively reduce their use of pain medications. Hospital discharge usually takes place on the second or third day after surgery. Shoulder motion is started soon after the surgery. Driving is not recommended for the first six weeks. The patient needs to be prepared to have less arm function for the six weeks after surgery than immediately before surgery. For this reason, patients usually require some assistance with self-care, activities of daily living, shopping and driving. Management of these limitations requires advance planning to accomplish the activities of daily living during the period of recovery.

What About Rehabilitation?

Progressive use of the shoulder for usual daily activities is encouraged. Formal physical therapy is often not needed.

When Can Ordinary Daily Activities Be Resumed?

The CTA prosthesis is not a procedure that is designed for heavy use or sports. It is designed to help the patient regain the gentle activities of daily living.

What Problems Can Complicate A CTA Prosthesis And How Can They Be Avoided?

Like all surgeries, the CTA prosthesis can be complicated by infection, nerve or blood vessel injury, fracture, instability, component loosening, and anesthetic complications. Furthermore, this is a technically exacting procedure and requires an experienced surgeon to optimize the bony, prosthetic and soft tissue anatomy after the procedure. The procedure can fail if the reconstruction is too tight, too loose, improperly aligned, insecurely fixed or if unwanted bone-to-bone contact occurs.

How Many CTA Prostheses Are Done At The University Of Washington?

We currently perform approximately 35 of these procedures each year on carefully selected patients from across the United States.

What If The Patient Lives A Long Way Away From Seattle?

Patients often come to Seattle from a long distance for the procedure. We are available by appointment in the Shoulder and Elbow Clinic, 4245 Roosevelt Way N.E. Seattle, on Mondays and Fridays to evaluate individuals with shoulder arthritis to discuss the procedures that might be most ideally suited for them. We perform surgery on Tuesdays and Wednesdays at the University of Washington Medical Center, 1959 NE Pacific St, Seattle, Washington, 206 598-4288. We also see patients at the Eastside Specialty Center, 1700 - 116th Ave NE, Bellevue, Washington, 425 646-7777. Patients having a CTA shoulder are usually able to return home three days after the procedure, assuming they have mastered their exercises. The staples used to close the skin can be removed by a nurse or physician near the patient's home. Ideally, we like to see patients back at six weeks after surgery to assure that satisfactory progress is being made. We request that patients complete questionnaires at 3, 6, 12, 18 and 24 months after surgery so we can track their progress and that the patient obtain and send to us X-rays at 12 and 24 months after surgery if they are unable to return to Seattle for the annual follow-ups. All patients have our personal email and the clinic contact phone numbers to use in contacting us at any time questions arise.

What Are The Possible Complications Of This Procedure?

This procedure involves a major operation conducted under general anesthesia. At the University of Washington we have the advantage of an experienced team of surgeons, anesthesiologists, nurses, and therapists all dedicated to patient safety and optimizing the quality of the result. However, there are still risks associated with the procedure, including the small chances of death, bleeding problems, heart problems, breathing problems, blood pressure problems, infection, nerve injury, blood clots, stiffness, pain, instability, fracture, tendon and muscle failure, breakage, loosening of the implants, and the need for revision surgery. These are essentially the same risks that exist for all joint replacement surgeries, such as total hips and total knees. We are happy to discuss these risks with you and to explain how we strive to prevent them and how we manage them in the rare event that they occur.

Conclusion

Summary CTA Shoulder Replacement For The Arthritic Shoulder Combined With A Massive Rotator Cuff Tear

The CTA shoulder can restore comfort and function to shoulders with arthritis and massive defects in the rotator cuff provided the shoulder is intrinsically stable. In the hands of an experienced surgeon, the CTA shoulder can be an effective method for treating shoulders arthritis and severe rotator cuff deficiency. Pre-planning and persistent rehabilitation efforts will help assure the best possible result for the patient.

Frederick A. Matsen III and Winston J. Warne
Shoulder Surgeons
University of Washington
Department of Orthopaedics and Sports Medicine