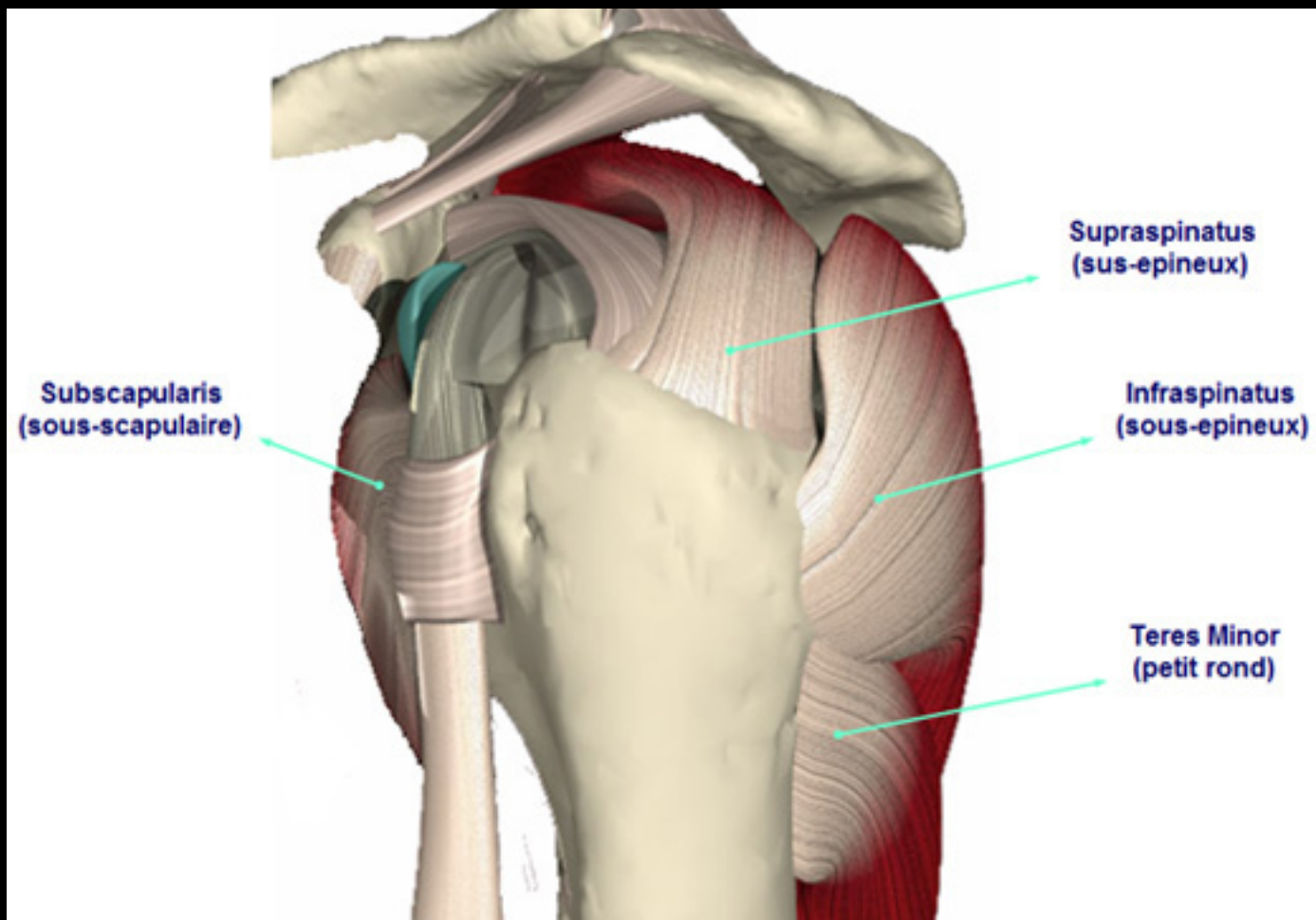


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## Rupture of the rotator cuff tendons

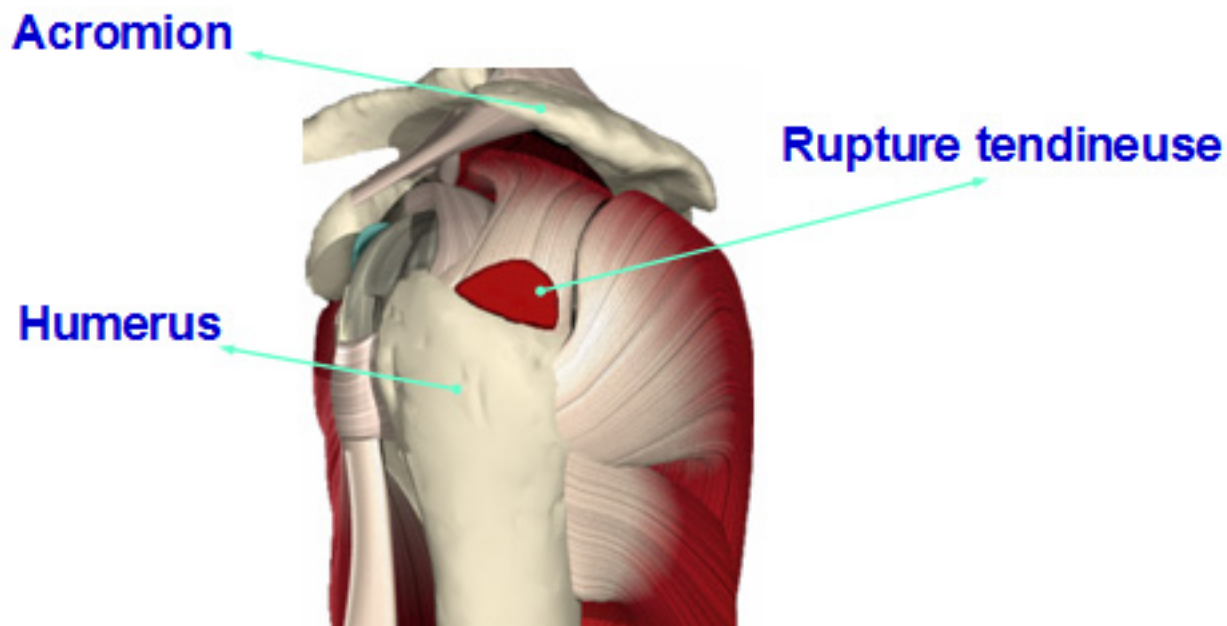
### 1.DEFINITION :

The rotator cuff is a group of tendons covering the head of the humerus with its main function being to enable movements of the shoulder and allowing the head of the humerus to remain centred in relation to the articular surface of the shoulder blade. A particularity of these tendons is that they are « sandwiched » between the head of the humerus and the acromion. With age they tend to become thinner and more fragile, and may break at their point of insertion at the upper section of the humerus. This rupture may be progressive due to the degeneration of the tendons, or traumatic following a fall or an over-strenuous effort. It is often the result of a sub-acromial conflict or chronic tendinopathy.



## **2.DIAGNOSIS :**

The signs of a rupture of the rotator cuff tendons may be extremely varied. In cases with a progressive rupture, the latter is often the result of sub-acromial conflict; because of the repetitive rubbing, the tendons weaken progressively and break. In a certain number of cases, such a rupture can be well tolerated; the intact tendons manage progressively to compensate for the torn tendons. In other cases pain can worsen, making lateral elevation of the arm difficult, causing pain at night and during everyday activities leading to a progressive loss of function of the shoulder. The condition may further develop towards an destructive arthrosis of the shoulder. In cases of post traumatic rupture, from the onset there is major functional restriction and pain in the shoulder. These lesions are not visible from simple X-rays and an arthro-scanner, MRI or echography is necessary when fixing a diagnosis.



### **3. TREATMENT :**

Treatment is largely through physiotherapy, surgery and particularly arthroscopy. In certain cases corticoide infiltrations are also used.

There have been great advances in the treatment of tendinopathy of the shoulder in recent years thanks to the progress made in arthroscopic techniques.

These arthroscopic techniques allow us to limit post operation discomfort and facilitate physical therapy. Nowadays it is more often recommended to repair the tendons using arthroscopy rather than in the past when a large portal through deltoid was necessary. Nevertheless, surgery is not always the only solution.

In cases of chronic ruptures which are well tolerated and in a patient who does not place much stress on his shoulder during everyday activities, particularly for old people, simple physiotherapy can help reduce pain and enable the patient to regain quite a decent level of shoulder function.

With a relatively old rupture accompanied by a stiff shoulder, a physiotherapy programme will be the first step of treatment in any case.

In cases functional impotence or a recent rupture, reinserting the tendons, usually by arthroscopy, is often the recommended course of action to best recover shoulder function. A programme of physical therapy will be required in any case after the operation and dis to be followed for several months.

Whatever the treatment, dealing with a lesion of the rotator cuff is always long and difficult, and recovery is not always complete. The tendinous lesions may also worsen over time due to the often degenerative nature of the tendons.

### **4. REINSERTION OF THE ROTATOR CUFF BY ARTHROSCOPY :**

- Anaesthetic**: general, or occasionally regional depending on the patient
- Length of hospital stay**: two to three days.
- Immobilisation** : arm at rest for three to six weeks with immediate physiotherapy.

This procedure involves reinserting the torn tendons on the humerus using an arthroscopic technique, i.e. 3 or 4 holes of about 1cm are realised enabling the surgeon to insert a camera system and miniature instruments. The camera is inserted into the joint and allows for an initial evaluation of the lesions. In cases where the lesions are linked to the labrum or the tendon of the long biceps, these elements may be removed. After the ablation of the degenerative parts of the tendons, the latter are attached back onto the head of the humerus by means of intra bone implants known as *anchors*, which are positioned in the bone of the humerus, and wires attached to fix the tendons against the bone . The sub acromial space will be enlarged in order to limit rubbing against the cuff. In cases where there is extensive retraction of the tendons, notably for old or chronic ruptures, it is not always possible to reinsert the tendons on the humerus and they must be fixed in place. In general, the ablation of the degenerative tendinous fragments and possibly of the degenerative section of the tendon of the long biceps will be sufficient to improve functionality in the patient

The small openings are then closed using resorbable wire.

The arm is left to rest in a sling to allow the tendons to heal against the bone

From the next day onwards the patient is to practise passive physical therapy exercises several times a day to limit stiffening in the shoulder.

The patient will generally be unable to use the shoulder for about a month.

Work with a professional physiotherapist, ideally in a specialised centre, begins about six weeks later in order for the patient to regain the totality of his range of motion.

Sports activities using the shoulder may be allowed generally after three months.

## **5. COMPLICATION :**

- The recovery process is always long and difficult; the patient must be motivated to undergo the immobilisation period as well as the operation and physical therapy in order to achieve the best possible results.
- In cases with extensive degenerative lesions, **pain** and **stiffness** may persist and prove to be a functional handicap.
- A **secondary rupture** of the tendons is always possible if the latter are of a degenerative nature.

**Pain** : persists often for several months after the operation. An improvement in the situation is normally to be expected after three to six months due to the time necessary for the tendon to heal following elimination of the bone conflict.

Depending on the degree of wear in the tendon and the possible associated lesions, residual pain may persist.

**-Algoneurodystrophy** is not predictable but it is always possible, leading to pain and a stiffening of the shoulder which can also spread to the arm. Recovery is often long and difficult and can last several years and there may be restricting after effects in the mobility of the shoulder. **This phenomenon is not predictable.**

**-Septic arthritis.** This is rare but it remains a possibility and may then require an adapted treatment or further surgery.

**-Haemarthrosis.** i.e. the apparition of an effusion of intra-joint bleeding, possibly requiring further surgery

**-Inflammatory scarring.** Depending on skin-type.

**-Stiffening** of the shoulder, which can take several months to regress or else persist depending on the individual case.

[back](#)

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