

Rotator the shoulder
in the same direction
or



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ROTATOR CUFF TEAR
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ABSTRACT:

INTRODUCTION: Rotator cuff is a common shoulder type of muscle.

It is called rotator cuff because the function is actually on the basis of rotator motion. Rotator cuff tear is something different. It is the common shoulder tear.

Pain is the most common symptom of rotator cuff tear. Although many cases regarding tears has been reported but still advancement of treatments has also seen¹. The frequency of pain varies from person to person. The pain also depends upon the type of tear and thickness of the tear. The prevalence is increasing in old age people. The pain is depending upon the patient's sustaining power. Most of the patients with tear come to hospital because of the causation of pain.

Rotator cuff tear has a wide variety among society. It may be happen due to several reasons . One of the common aetiology is tendon degeneration which is more prominent in old patients and other may be due to repetitive movement of the shoulder in the same direction or a very rapid movement of shoulder in any of the other direction.

The main factors affecting rotator cuff tear is patient's age and acromial morphology³. Rotator cuff tear is usually a dysfunction of tendon. The pain

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gradually increase and if left untreated it becomes more intense and deep. The tear might also occur due to traumatic reasons like while met with accident etc. Treating methods has also become advanced. In the initial cases physiotherapy, stretching therapies and cold compress are some treatments. Traumatic is a significant one while the degenerative one is more frequent and has high prevalence. In severe cases usually shoulder surgeries are recommended.

The type of surgery varies according to the size of tear. Surgeries are mostly recommended if there is no improvement is seen by giving primary relief treatment. ANATOMY: It involves the functioning of four muscles. They are: supraspinatus, infraspinatus, teres major and subscapularis.

Each of a which have their own functioning. There is a presence of bursa which is represented as lubricating sac. It involves in the gliding and movement in between the bone and rotator cuff muscle.

The main bones involving in the rotator cuff is upper arm bone , shoulder bone and collar bone . It is actually a ball and socket bone. The head of the upper arm bone inserts into the humerus . Around the head of humerus , the rotator cuff unites the above mentioned four muscles forming tendons.

All these muscles arises from the scapula and inserts into the humerus. The subscapularis muscle guides the internal movement of humerus. From the view of superior insertion of rotator cuff a rotator cable is seen . The rotator cable arises anteriorly from the biceps. It is the thickening of capsule. The supraspinatus has its origin from the supraspinatus fossa and inserts into the greater tubercle of humerus. The infraspinatus also has its origin from

infraspinatus fossa and inserts into the tubercle as well. It is the fourth muscle of the rotator cuff.

The rotator cuff tear has five histologic layers. The 1st layer contains superficial ligament. The 2nd and 3rd layer contains tendinous fibres. And the 4th and 5th layer consists of blood vessels and loose connective tissues.

TEAR TYPES: There are many types of rotator cuff tear. Prominent ones are partial thickness tear and full thickness tear. The first type rarely requires surgery while second one was quite complicated in which the shoulder surgery or replacement is needed. The tear can either be acute or degenerative.

KEYWORDS: Rotator cuff tear-types-aetiology- symptoms-diagnosis-treatment. DISCUSSION: AETIOLOGY AND SYMPTOMS: Rotator cuff tear is the most prevalently occurring tear in our body . It may leads to different consequences. Many studies says that rotator cuff tear is common in males than females . But now recent studies prove that it is common for both males and females. It's is actually due to the continuous usage or movement of shoulder in the same direction for a prolonged period. Prior treatment is necessary to stop this in the initial stage itself .

Many tear might occur due to trauma. The patients above the age group of 50 mostly experience full thickness tear³. The abnormalities related to rotator cuff tear is increasing with age and it's been proved in many analysis⁴. The consequences varies from person to person. Symptoms are different for those in young people, adolescents and older people. Not all

people are suspected , but people who have excessive hand work are suffered the most.

The pain is gradual and sudden onset of pulling of muscles. Rotator cuff injuries are commonly associated with motions that require repeated against full motions or forceful pulling motions. Such injuries are frequently sustained by athletes whose actions include making repetitive throws, athletes such as weightlifters, boxers, baseball or hockey players etc. Recent studies says that rotator cuff tear is also occurring in persons who are drummers, swimmers, fast bowlers , martial artists who are continually giving strain to rotator cuff tendons. Some articles reveal that the symptoms of rotator cuff tear is almost same from person to person. Since the pain depends upon the size of the tear and how much the rotator cuff is actually torn.

The pain at first appears only in the shoulder and gradually reaches along the side of the shoulder and reaching up while turning the steering of the car wheel or pain while sleeping. Most patients have severe pain only while sleeping at night. They find it difficult to sleep on one side by pressing the affected shoulder.

Traumatic rotator cuff tear is another case. In this the active surgeons favour early rotator surgery for larger traumatic rotator cuff injury. The person feel weakness , acute pain and if left untreated the size of the tear may increase and cause complications . This is because the tissue is most likely normal prior to trauma and so the surgeons expect the surgery results should be good with regards to improved strength , range of motion and pain

elimination. Tendon degeneration is also the common aetiology among older people where the tendon is degenerated completely losing its sac and have difficulty in free gliding of shoulder. It's due to aging. Repetitive stress is the most significant factor. The tear might occur due to the gradual decrease of blood supply to the tendons which is more prominent in older populations.

Another main aetiology is impingement Syndrome. It is the factor among non-sports related injury. In this tendons of the rotator cuff rub on the underside of the acromian. This happens while elevating the arm upwards , the space between the tendon and the shoulder is narrowed. And hence the bursa is inflamed leading to damage. Recent studies says that spurs might develop that can actually damage the tendon to such an extent that the tendon becomes eroded away and tear. It is of primary tendonitis and secondary impingement. The physical examination which the studies analyse are the shoulder pain during the arm depression or arm elevation.

The person might experience pain while raising their arms to 90 or 120 degrees which is called arm elevation . And they may also feel the pain during arm depression of angle 90 or 30 angels. The affected person might also feel pain while rapid movement of shoulder. On the other side , the passive motion of the shoulder leads to pain called impingement sign. Inflammation is also the most common sign of rotator cuff tear. The immediate symptom which the person feel is bulging of arms.

Sometimes they have redness in that area. DIAGNOSIS: The diagnostic methods is also advanced. In case of normal pain mostly physical therapies are recommended. Only if the pain increases or accurate , Magnetic

resonance imaging is used. An MRI will be helpful to see if the weakness is secondary to pain or an actual tear.

MRI is like a gold diagnosis in which the accurate tear can be detected to give a correct treatment. Rotator cuff fatty infiltration is also discussed mainly in some articles. In this if the rotator cuff is torn for a long time, the muscle which is torn might turn into fat. Fat is not like muscle tissue, this may not allow the surgery to be successful leading to disimprovement of function. And even after the surgery the fat will never turn into a muscle tissue.

Now MRI scanning is useful to determine the degree of fatty infiltration in rotator cuff. The next comes the ultrasound. Ultrasound is used to diagnose both partial and full thickness tear. But however studies confirm that MRI is the best method for diagnosing partial thickness rotator tear. Ultrasound has 90% sensitivity and specificity. Ultrasound is used in case of higher tear and helpful in dynamic testing, assessing the affected shoulder and the healthy shoulder. Some articles say that location of pain does not exactly show the tearing place but the physical examination reveals the exact location of rotator tear². X-rays don't show up that clear in rotator cuff.

Recent studies say that it helps in the diagnosis of bone spurs. This one is normally used in case of acute tears showing degenerative type changes.

TREATMENT: Rotator cuff tears is one of the most common shoulder problems that usually requires operative treatments. Therapeutic options used to repair ruptured tendons have consisted of suture, autografts, allografts (transplants), and synthetic prostheses. Though shoulder surgeries

are recommended, it's still been a challenging task for surgeons because it takes a high risk and prolonged time for rehabilitation and relief. Recent view was now focused on various treatments like tendon healing and develops on the growth factors which initiates tear. The treatment varies from one person to another based on the size or type of the tear. Recent studies says reduction in the natural number of functional stem cells in the tissue is linked to the rotator cuff tear .

And hence sometimes tear can heal on its own. In a recent analysis over 24 patients who has complete thickness tears where left untreated for some times. In this out of 24 , 2 patients the tear healed on its own .

In 9 of 24 the tear was smaller. In another 9 out of 24 patients the rotator cuff tear size didn't change. In 6 patients , tear was found to be bigger. Since 75% of the patients, the tear was either healed , smaller or didn't change. But in some cases the tear has even increased leading to severe pathology. About 99% of the patients come to treatment only because they feel the pain and some muscular weakness. The control of pain is one of the key treatment for this rotator tear in which its been analysed that almost half of the treatment is done.

The primary treatment which the doctors usually suggest is injection of local anaesthesia like anti inflammatory non steroidal drugs. Although this conservative treatment does not give good results but still the instant relief gets the patient out of pain. The prevalence of this tear is 9. 7% in the age group of 20 years and the prevalence is increased to 62% in the age group of above 80 years. Mostly old age groups are suspected to this

tear. CONCLUSION: The rotator cuff tear is the most affected tear in among millions of people. Studies prove that proper care and good conservative treatment might help them to get rid of this tear. Although the constant study about the rotator cuff tear goes on , there is a long way of analysing the tear types and its occurrence and the treatment for long and massive thickness tear.

Various controlled trials has to be done in this field and the surgeries should be more acute in patients with particular type of tear. Since many people are affected by this immediate rehabilitation is necessary. Better healing of the degenerative tear types has to be assessed. The use of operative and non operative methods has to be implemented more . REFERENCE: 1.

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