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Advancements in the treatment options for shoulder problems

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Novel techniques of management of shoulder injuries are cost-effective and allow young individuals to return to their normal or athletic activity



Recurrent shoulder dislocations are most commonly seen in young athletic individuals. Proper workup before surgery and fixing shoulder problems intra-operatively are key steps in giving shoulder back to the athletic activity in young individuals. In recent years there are many advancements in treating different shoulder problems have emerged with excellent functional and radiological results with advantages like an early return to athletic activity.

According to the recent data available, shoulder re-dislocation rates were 9.4%, 12.7%, and 17.0% at 1 year, 2 years, and 5 years, respectively, after the first shoulder dislocation. It is also noticed that the younger the age more chances of re-dislocations. Predominantly seen in male young athletes

Treatment options for these patients vary depending on radiological examinations. If these patients have only soft tissue damage i.e., anterior labral injury Bankart repair can be done. If a patient along with soft tissue injury also presents with anterior glenoid bony defect, then treatment options vary depending on the amount of bone loss in the individual.

In recent years advancements in technology for treating these conditions emerged and arthroscopic assisted shoulder surgeries are in trend with novel techniques of fixations of these shoulder problems.

The available advanced treatment options for recurrent shoulder dislocations are arthroscopic assisted soft tissue Bankart repair, Dynamic Anterior Shoulder (DAS) using the long head of biceps tendon, and Latarjet procedure. Which surgery to be done on each individual varies on radiological assessment.

Old days surgeons focused only on Open Bankart and Latrjet procedures. Failure of Bankart repair surgery is pretty high with 25% at 1-year postoperatively and revision bankart failure rates are also on the higher side with 43% at 4 years postoperatively. This made surgeons bring new surgical techniques and limit surgical procedures based on a radiological assessment to avoid failures in recent years.

Arthroscopic assisted Bankart repair is done in labral defects and <13% of glenoid bone loss. Arthroscopic assisted Latarjet is indicated in individuals with >20-25% anterior glenoid bone loss. Whereas most recent advanced surgical technique – Arthroscopic assisted Dynamic Anterior Stabilization (DAS) using a long head of biceps tendon is implemented in patients with 13-20% of anterior glenoid bone defects along with soft tissue repair. All these procedures are augmented with arthroscopic Remplissage procedures which give the added benefit of preventing re-dislocations in young athletes.

AVASCULAR NECROSIS OF HUMERAL HEAD:

Avascular Necrosis (AVN) of the humeral head is the most ruinous condition affecting the shoulder. Avascular necrosis (AVN) of the humeral head constitute of 5% of all shoulder arthroplasties executed. Alterations to the blood supply of the humeral head end in localized necrosis and collapse of the subchondral bone. Trauma, corticosteroid use, and systemic illness are the usual causes of AVN. The treatment options available are depends on age of patient and radiological grading of humeral head collapse. Grade I & II are treated with core decompression where as advanced grade III, IV & V are treated by arthroplasty procedure. Old days surgeons practised open core decompression for grade I & II AVN humeral head. Recent advancement in treating grade I & II is arthroscopic assisted core decompression and Bone Marrow Aspirate Injection (BMAC) with excellent improvement in pain relief, functional activity and prevented advancement to grade III, IV or V AVN avoiding the need of primary and early secondary arthroplasty surgeries to the individuals.

SHOULDER ARTICULAR CARTILAGE DEFECT:

Shoulder articular cartilage is the thin whitish covering of bone that allows easy gliding of joint surfaces. It has no blood supply and any injury to the cartilage the chance of healing is very less. An articular cartilage injury (Chondral defect) may occur due to injury, such as a direct impact injury, or may be seen in the patients with shoulder instability and recurrent dislocations in young individuals. However, it may also be due to the wear and tear of the shoulder joint. If left untreated leads to the development of osteoarthritis necessitating arthroplasty surgery in the future.

Cartilage defects are diagnosed on radiological assessment and treatment varies depending grading of defects. Advanced-grade III & IV cartilage defects are managed with arthroscopic Osteochondral Autografts or Allografts (OCA). These procedures prevent the development of osteoarthritis in young individuals by avoiding arthroplasty surgeries.

CONCLUSION:

Advancements in the treatment options for shoulder problems in young individuals are providing promising results both functionally and radiologically over last recent years. These novel techniques of management of shoulder injuries are cost-effective and allow young individuals to return to their normal or athletic activity very early. These procedures prevent the progression of the disease too advanced arthritis and avoid joint replacement (arthroplasty) procedures in young individuals.

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