Shoulder and Knee Arthroscopy: New Techniques and Technology

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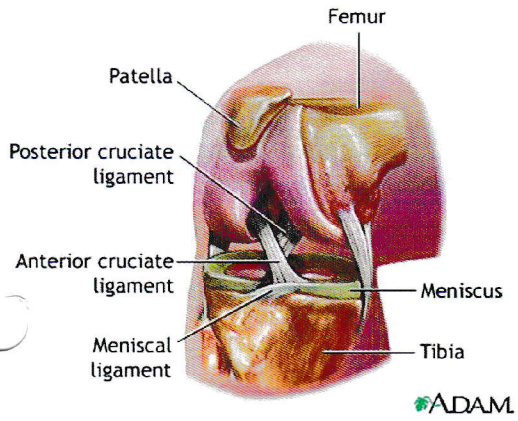
Although large joint arthroscopy was first performed more than 50 years ago, it is only within the last 10-15 years that technological advances and improved surgical techniques have allowed arthroscopists to effectively address many of the most common athletic issues affecting the shoulder and knee.

Injuries that formerly required large open incisions to treat can now be visualized and repaired through small incisions only large enough to accommodate a camera and specially designed orthopaedic tools and implants. Because of this, post-operative pain is typically decreased, and many of these procedures can be performed on an outpatient basis. In fact, one of the dilemmas with arthroscopy today is that the procedures typically hurt much less than open surgery; patients may, therefore, tend to do too much too soon, when in fact the healing process and rehabilitation course are nearly identical to an open procedure.

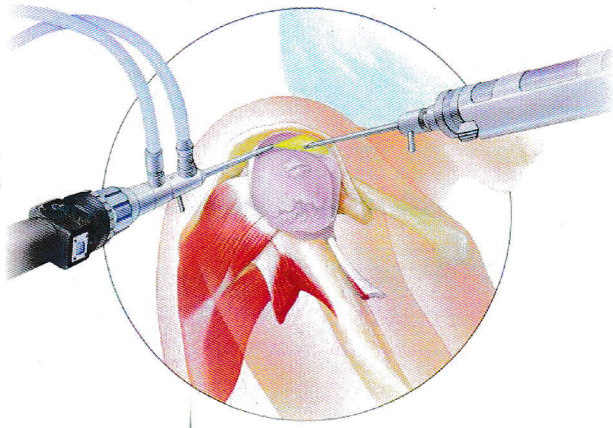
During shoulder arthroscopy, the surgeon is able to clearly visualize intra-articular anatomy, including the glenoid and humeral cartilage, the labrum, the long head of the biceps, and the inferior (articular) surface of the rotator cuff. The scope may also be placed into the subacromial space, where the acromion, bursa, acromioclavicular (AC) joint, and superior (bursal) surface of the rotator cuff can be inspected.

Shoulder problems commonly treated via arthroscopic techniques include impingement syndrome, rotator cuff tears, and shoulder instability. Initial treatment of impingement syndrome usually involves anti-inflammatory medication, steroid injection, and physical therapy, but when conservative measures have failed, subacromial decompression is usually effective. Using arthroscopic burrs and soft-tissue ablators, this procedure removes the inflamed bursa and bone spurs from the irritated area around the rotator cuff tendons, creating more space for the tendons and allowing the inflammation to subside. If the cuff irritation has progressed to a point sufficient to cause tearing of the tendons, surgical intervention is typically indicated, and repair of the tendon end back to the humerus can be completed using arthroscopic suture anchors and knot-tying techniques. Labral and capsular tears resulting from shoulder dislocation also can be repaired through similar minimally invasive techniques.



Less commonly, cases of biceps tendonitis, AC joint arthritis, and adhesive capsulitis ("frozen shoulder") refractory to non-operative treatment may require surgical intervention and can be effectively treated through the arthroscope. When the biceps tendon is damaged and causing pain, biceps tenotomy or tenodesis can be performed. The former procedure involves a simple release of the biceps tendon, and though it results in a slight cosmetic change in the biceps contour, it produces surprisingly little functional deficit. Tenodesis avoids the cosmetic sequelae of a tenotomy and relieves symptoms by rerouting and reattaching the biceps away from the typical sources of irritation. When arthritis of the AC joint is severe, the end of the clavicle can be removed with a burr, preserving the clavicular stabilizing ligaments. And in the rare cases of frozen shoulder that require surgery, the thickened, scarred ligaments and capsular tissue also can be arthroscopically released.

In the knee, new devices and techniques have similarly allowed the development of minimally invasive strategies to address many common athletic injuries. The menisci, cruciate ligaments, and the articular surfaces of the femur, tibia, and patella are all accessible through the arthroscope. Symptomatic knee instability resulting from an anterior or posterior cruciate ligament tear is addressed with ligament reconstruction, which often can be performed through a few single-centimeter incisions. In the same way, both meniscectomy and now, even meniscal repair (when indicated), can be performed though "all-inside" techniques requiring no additional incisions besides the standard arthroscopic portals. Finally, a number of treatment strategies for focal cartilage defects, including cartilage transfer and transplant techniques, are now available to the sports medicine arthroscopist. Certainly, an arthroscopic approach is not always the correct choice for a given patient, and in some cases, the orthopaedic surgeon may still recommend an open procedure. Still, with careful patient selection, numerous studies have shown that arthroscopic rotator cuff repair, shoulder stabilization, meniscal repair, and ligament reconstruction are just as, if not more, successful than open procedures. If you have any questions concerning shoulder or knee injuries, or arthroscopic solutions, please feel free to call Hess Orthopaedics and Sports Medicine at 434.1664 and speak with me or any of our surgeons.



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