Preferred Treatment for OCD of the Elbow

Physical Therapy in Fremont, Carbon, and Sweetwater Counties for Elbow conditions

Orthopedic Surgeons Offer Their Preferred Treatment for OCD of the Elbow

Overhead throwing athletes (especially pitchers) of all ages are at risk for elbow and shoulder problems. In this review, orthopedic surgeons from Harvard Medical School, Wellesley Hospital, and Tufts University walk us through all aspects of osteochondritis dissecans (OCD) of the elbow in pediatric patients.

What is osteochondritis dissecans? OCD is a condition in which a piece of cartilage and the underlying bone have been damaged. In some cases, the damaged fragment separates from the bone and floats freely within the joint.

The problem can develop in the elbow as a result of trauma (injury) but more often, it occurs when there is repetitive compression of the radiocapitellar joint. Athletes affected most often include baseball pitchers, weight lifters, tennis players, cheerleaders, and female gymnasts.

The radiocapitellar joint is located where the radius (bone in the forearm) joins the bottom of the humerus (upper arm bone) to form part of the elbow joint. Osteochondritis dissecans (OCD) of the elbow doesn't occur in immature throwing athletes very often so there isn't a lot of information about it to help guide treatment.

What do we know about this condition? Over time, OCD lesions can lead to further degenerative changes in the elbow. It is not self-limiting or in other words, it doesn't get better on its own. But other than that bit of information, the natural history (what happens over time) and the best way to treat this condition isn't known.

Shear stresses from repeated motions probably start the problem. Poor mechanics and fatigue of the muscles and ligaments are added to the shear load. Combined together, these forces cause the cartilage to separate from the bone, taking a piece of the underlying layer of bone with it.

How can the orthopedic surgeon tell if someone has osteochondritis dissecans? Of course, the patient history helps -- for one, participation in any of the sports mentioned is a red flag. The symptoms reported are usually pain along the outside of the elbow that gets better with rest. Stiffness, locking, catching, and loss of full elbow extension complete the picture.

To confirm the diagnosis, the physician relies on X-rays, MRIs, and sometimes CT scans. Once it has been determined where the damage is located, how severe the lesion is, and how stable (or unstable) the elbow is, then a management plan can be formed.

The first step is to rest for three to six weeks. Athletes must learn how to change the way they do things or the problem will come right back. This process is called activity modification.

A Physical Therapist will prescribe exercises to stretch and strengthen appropriate muscles. The physician

may prescribe medications such as nonsteroidal antiinflammatories (NSAIDs). There aren't enough studies to show that this is really needed or beneficial. Specific guidelines regarding dosage (how much) and duration (how long) these medications should be used are not available.

Athletes most likely to recover nicely with conservative (nonoperative) care are younger and have early (mild) disease. Patients who have completed six months of conservative care but who still have symptoms are considered candidates for surgery.

Surgery is also considered when there are fragments of cartilage and/or bone inside the joint. These are called loose bodies. Patients who have loose bodies are most likely to develop the catching and locking symptoms of the elbow reported.

What can the surgeon do for this condition? The authors' suggest drilling for lesions that are stable. Stable means there are no loose fragments or unstable bits of cartilage that could get torn off and form a loose body.

Drilling refers to the practice of putting tiny holes in the surface of the cartilage down through the layer of bone underneath the cartilage and right through to the bone marrow. Tiny drops of blood seep up from the bone into the defect and stimulate a healing response. This type of bone marrow stimulation has good short- to medium-term results. Long-term data (especially about return-to-sports status) is still needed.

When there are loose bodies or an unstable cap, the authors prefer to use debridement first, then bone marrow stimulation. Debridement involves removing any fragments and smoothing down any remaining rough edges. If the lesions are large (more than half of the cartilage in the radiocapitellar joint is damaged), then osteochondral autograft transplantation (OAT) is advised.
The OAT technique is a two-step process. First, normal, healthy plugs of articular cartilage and bone are harvested. Because the radiocapitellar joint is so small, surgeons must rely on another joint as the donor site.

Usually the femoral condyle (end of the thigh bone forming the upper half of the knee joint) is the main source of graft plugs. The plugs are then transferred to the damaged area of the elbow joint and inserted.

As with bone marrow stimulation, the OAT approach has not been studied enough to know how well the plug works in the long-run. There are questions and concerns about the match-up between knee-to-elbow cartilage because knee cartilage is flatter and thicker than the cartilage in the radiocapitellar joint.

The authors advise careful inspection of the entire elbow joint using arthroscopy. Different portals (insertion sites for the scope) must be used to view the front, sides, and back of the joint. For all surgical procedures discussed, there is a detailed description of the patient's position during surgery, location of incisions or portals, and exact surgical techniques used.

In summary, physicians treating young patients for osteochondritis dissecans of the (elbow) capitellum have much to consider when trying to determine the best plan of care. The athlete's interest is in getting back to their sport of choice as soon as possible.

The surgeon wants to provide treatment that will give the athlete a stable joint that won't develop degenerative arthritis later. Right now, there isn't enough evidence to create standard treatment guidelines.

Given the current evidence and surgeons' experience treating this condition, the authors' suggestions for conservative versus surgical care are what they call their "preferred treatment". More studies (especially long-term studies) are clearly needed to find out what works best for each type of athlete given the location

and severity of the damage done to the radiocapitellar joint.

Reference: David E. Ruchelsman, MD et al. Osteochondritis Dissecans of the Capitellum: Current Concepts. In Journal of the American Academy of Orthopaedic Surgeons. September 2010. Vol. 18. No. 9. Pp. 557-567.