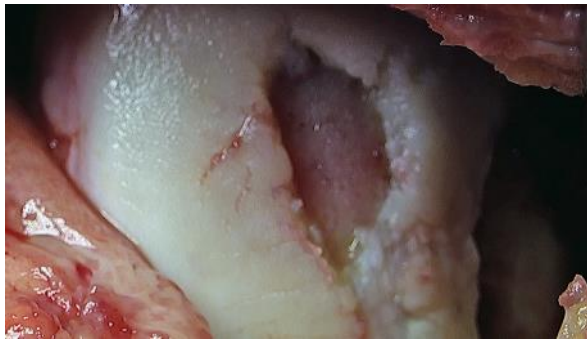


Glide, Not Grind: Cartilage Injuries in Basketball

by

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Cartilage is the smooth, white, shiny tissue on the surface of the end of our bones. It is at these surfaces where the bones articulate to form a joint; thus, the cartilage is specifically called articular cartilage. Some of the most important joints in our bodies are our knee



An arthroscopic view of an osteochondral injury to the medial femoral condyle of the knee. Top image shows the injury, preparation is occurring in the middle photo, and the bottom photo is after the osteochondral allograft transplant .

joints. The articular cartilage in our knees allows the bones to glide over each other with very little friction. However, with injury and/or normal natural degeneration, the cartilage can undergo wear and tear. Basketball players of all levels of competition put significant stress on their knees. Repetitive jumping, running, cutting and pivoting, particularly in sudden stop and go movements of basketball, can result in cartilage injury to the knee. Furthermore, in the setting of a torn ligament, cartilage injury is not uncommon in basketball players.

We grade cartilage injuries by the depth of the injury. Some cartilage injuries have no visible disruption, while other injuries are partial thickness and the most severe injuries are full thickness with exposed underlying bone. Unfortunately, articular cartilage does not have a blood supply and therefore does not have the ability to heal itself. However, not all cartilage injuries need treatment, but most cartilage injuries will increase in size with time. This is analogous to an untreated road pothole. You can repair the pothole, or do nothing and with time the pothole will continue to wear-and-tear and get bigger. Many small articular cartilage injuries do not cause pain or symptoms. A study done on professional basketball players demonstrated that nearly one-half had abnormal cartilage signal in their knees

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based on MRI testing, but did not have any pain or symptoms. Pain is usually the main symptom, but athletes also may present with swelling and mechanical symptoms of locking or catching inside their knees. Most patients with isolated cartilage injuries typically do not complain of instability.

Symptomatic cartilage injuries, or rather pain that can be attributed to cartilage injuries of the knee, can be treated initially with conservative management. This can be in the form of rest, icing, anti-inflammatories, steroid injections, gel type injections, PRP (platelet rich plasma) injections, stem cell injections and bracing. If conservative options fail, surgical techniques

are available to restore the articular cartilage surface and reduce pain. Focal or localized cartilage injuries are different from wide spread articular cartilage degeneration of the knee that is attributable to osteoarthritis. A full of evaluation is made to ensure that the overall alignment and integrity of the knee, as well as the femur and tibia bones, are normal. Furthermore, we make sure the surrounding ligaments and meniscus are intact. Also of importance is the underlying bone at the site of a cartilage injury. If the bone is damaged, then it too needs to be treated, as well as the cartilage, because the bone provides support for the cartilage. Bone and cartilage transplants can be done from either a cadaver graft, or from an insignificant area of the knee.

Traditional cartilage restoration techniques stimulate the underlying bone to create a healing response. This is known as abrasion arthroplasty, or microfracture, and it leads to the formation of a scar type of cartilage to fill the defect. It is not as robust or resilient as normal articular cartilage. This procedure typically is used for small cartilage lesions. Other cartilage restoration techniques are more technically demanding and recommended for larger injuries. There are many different types of procedures available depending on the size, location, degree and age of the injury. Additional procedures can be performed to correct alignment and restore ligament stability. If the underlying bone also is involved, bone and cartilage transplants can be done from either a cadaver graft, or from a less significant area of the athlete's knee. For pure cartilage injuries, a sample of the athlete's knee cartilage can be taken through an initial, simple arthroscopy and grown in a lab. The patient's own cells are then injected into the cartilage injury site. This procedure is called autologous chondrocyte implantation. Other techniques similar to this have grown in popularity, but rather than a patient's own cells they are composed of minced juvenile cartilage tissue.

Most cartilage procedures require six weeks of nonweightbearing to protect the repaired injury and four to six months of physical therapy. Recovery and return to basketball typically can take about one year. Typically, in-season injuries initially are treated conservatively, if possible. After failure of treatment, or in the off-season, cartilage restoration techniques can be attempted. Continued innovation and research in cartilage restoration have allowed us to treat basketball players and get them back to playing. Further research and advancement continues to help us better restore these injured cartilage surfaces.