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Cartilage Injuries of the Knee (Part II): Meniscus Injuries:

There are two very important types of cartilage in the knee: the meniscus and the articular cartilage. Articular cartilage injuries were covered in part one of this series on cartilage injuries about the knee, and this article will focus on meniscus cartilage injuries. The menisci are two crescent shaped cartilage structures that help to protect the knee, lubricate the knee joint, and absorb stresses throughout the knee. Meniscus cartilage serves as a type of padding between the bones that make up the knee joint. This is the cartilage that is referred to in the common condition of "torn cartilage in the knee".

Meniscus Injuries:

The meniscus is one of the most common structures to be injured in the knee. Injury often occurs during twisting activities, but can occur during a simple fall or just from simply miss-stepping. After a meniscus injury there is often, but not always, a good deal of swelling in the knee. Many patients with meniscus injuries describe "locking" or "catching" of their knee joints, but again this is not always the case. When pain, locking, or catching occurs, it indicates that the meniscus is causing an abrasive effect on the very important articular cartilage and causing damage to that cartilage. The articular cartilage, which was discussed in the first article in this series, is the white slippery surface that covers the ends of the bones which make up the knee joint. When a meniscus tear is present and acting as an abrasive to the articular cartilage, it is analogous to having a pebble inside one's shoe that causes pain with every step.

Diagnosis:

The first step in diagnosis of a meniscus injury is a good history and physical examination by a physician well trained in diagnosis and treatment of knee injuries. X-ray images of the knee are often necessary and help in narrowing the diagnosis. After these initial steps, a Magnetic Resonance Image (MRI) is often helpful in reaching a diagnosis. Unfortunately, no test is 100 percent accurate, but an MRI is accurate in diagnosing meniscus injuries more than 90 percent of the time. When combined with a good history and physical exam as well as x-rays, these tools make the diagnosis of meniscus tears very accurate.

Treatment:

Arthroscopy:

Most meniscus injuries in the knee can be easily treated with a small, minimally invasive surgery called arthroscopy. Arthroscopy of the knee is performed under sedation on an

outpatient basis. It is performed through a few small punctures in the skin, utilizing a small camera and specialized instruments, to repair or excise the torn cartilage. In general, patients are able to walk that same day and go home the day of surgery. Patients are encouraged to begin physical therapy and start riding a stationary bike within a few days after surgery. In the case of a repaired meniscus, a short period of crutches with partial weight-bearing may be required to give the meniscus the best chance at healing.

The cartilage of the meniscus has a very complex anatomy, and this allows it to perform its function of protecting the knee joint. Furthermore, the blood supply to the meniscus is poor, making it very difficult for an injured meniscus to heal. For this reason, only a small percentage of meniscus tears are "repairable." By repair, we mean placing a suture across the tear and helping the meniscus heal over time. If the tear is in a good location for healing within the meniscus, there are many different types of suturing devices . These devices have good success rates using very small incisions and minimally invasive, arthroscopic surgery. The repairs require dedicated physical therapy and a period of time up to six weeks with partial weight-bearing using crutches. Any time that a meniscus is thought to be "repairable," every attempt is made to do so.

As mentioned, most meniscus tears are not "repairable" because of their location in the meniscus and the poor blood supply, which lead to a poor rate of healing of the cartilage. Fortunately, there are excellent methods of removing the torn portion of the meniscus and leaving the healthy portion behind to continue to protect the rest of the knee joint. *Arthroscopic partial meniscectomy* is a procedure where the torn portion of meniscus is removed or "excised," and the smooth healthy meniscus is left behind so it can continue to protect the knee joint from further damage or injury.

Very rarely, a young person who has an otherwise healthy knee joint will have a severe tear in the meniscus which causes it to be non-functional and to require a complete excision. In this very rare situation, new techniques of meniscus transplantation or synthetic meniscus scaffold replacement may be indicated. While long-term results of these surgeries are not known today, the results for the first five years have been promising.

Summary:
Meniscus injuries are very common and can cause a great deal of discomfort. A torn meniscus can act as an abrasive to the important articular cartilage. Prompt treatment of these injuries can help prevent further damage to the articular cartilage.

For more information: If you would like more information about knee injuries and or would like an appointment please call Dr. Levi's office at the Orthopaedic and Rehabilitation Centers, 773-878-6233.