

Utilization of In-Office Arthroscopy in the Case of Multiple Inconclusive MRIs and Continued Knee Pain

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Background

The patient, a 43-year-old female, presented to the office with right knee pain. Approximately 8 years prior, the patient was involved in a motor vehicle accident in which she sustained a knee vs dashboard injury. Although the patient was able to walk away from the accident, she had residual knee pain. The patient was examined by another physician for this pain, who ordered an MRI study to determine pathology. The MRI showed potential fraying and degeneration of the lateral meniscus, but the findings were inconclusive. With no defined pathology on the MRI, the patient was diagnosed with a knee contusion and received a corticosteroid injection and physical therapy to treat the knee pain.

Physical therapy continued on and off for 2 years, but the patient's pain remained unresolved. The patient continued to have swelling in the knee, and pain along the joint lines and around her patella. The patient was subsequently examined by another physician, who ordered a new MRI. The MRI findings returned with inconclusive pathology to explain the patient's knee pain. Patient was instructed to take anti-inflammatory medication (NSAIDs) and apply a topical analgesic to the knee when pain surfaced.

The Case

Patient presented in the office 8 years after her MVA, with unresolved right knee pain, following examination by multiple physicians and multiple prior inconclusive MRI studies. X-rays showed no signs of narrowing of the joint space, as well as no obvious bony pathology. Physical exam showed a mild effusion with diffuse pain. An articular cartilage, 3T MRI was ordered and read by a musculoskeletal radiologist. The patient's MRI showed potential Grade II arthritic changes in the patellofemoral and medial compartments, as well as possible fraying of the lateral meniscus, but the findings were inconclusive. The patient was prescribed continued physical therapy, anti-inflammatory medication and received a corticosteroid injection. Patient's pain continued with treatment and a diagnostic arthroscopy was scheduled to take a look at the patient's right knee.

The Answer

Prior to her diagnostic arthroscopy, the patient agreed to have an in-office diagnostic arthroscopy with mi-eye 2™. The patient was positioned in a reclined position on the examination table with her right knee flexed to 90 degrees. The knee was prepped with a topical iodine solution and was injected with 20cc 0.2% Lidocaine without epinephrine in the portals and joint to numb the area for the procedure. The mi-eye 2™ was inserted into the lateral and medial portals of the right knee.



Figure 1: Patient positioning for mi-eye 2™

Upon entering the intra-articular space of the right knee, mi-eye 2™ visualized lateral pathology including a 10mm x 10mm Grade IV chondral defect in the lateral femoral condyle and fraying of the anterior horn of the lateral meniscus. Further examination showed a 15mm x 15mm Grade IV chondral lesion of the medial condyle and Grade III/IV fissuring degeneration

of the lateral facet of the patella. The mi-eye 2™ was removed from the joint and patient was treated with a bandage to cover portal location. Through the entire procedure the patient was able to see the images of her knee and understand the various pathology that was being visualized by the physician.

Discussion

The patient previously had received a total of 4 MRIs over an 8 year span that did not show the pathologies that were visualized by mi-eye 2™. In addition, the patient had required multiple visits to multiple physicians prior to her receiving an ultimate diagnosis of her knee pain. It is possible, that if direct visualization was utilized in the 8 years prior to her eventual diagnosis, the patient would have had a wider array of articular cartilage treatment options available to her.

The mi-eye 2™ offered the patient closure as to the cause of her knee pain, while avoiding an unnecessary surgery. Through the use of an in-office diagnostic arthroscopy (mi-eye 2™), the patient was able to leave the same day with a definitive answer. The mi-eye 2™ findings, when compared to the MRI findings, shows that arthroscopy remains the "gold standard" for a definitive diagnosis of intra-articular pathology. By using mi-eye 2™, that arthroscopy can occur in-office without the need for surgery.



Figure 2: Coronal and sagittal 3T MRI views of patient's right knee showing inconclusive findings

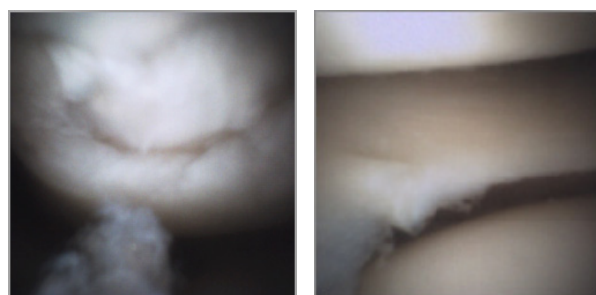


Figure 3: Chondral lesion and lateral meniscus tear visualized via mi-eye 2™ previously not detected by MRI

Indications for Use

The mi-eye 2™ is indicated for use in diagnostic and operative arthroscopic and endoscopic procedures to provide illumination and visualization of an interior cavity of the body through either a natural or surgical opening.