Retained Broken Outflow Cannula Recovered 6 Years Post-Knee Arthroscopy

MOHIT BANSAL, MD; FRANK HECKL, MD; KATE ENGLISH, BA

abstract

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One of the most common procedures performed in orthopedics is knee arthroscopy, and a variety of complications are found with this procedure. One of the most avoidable complications is that of retained instruments. This article describes the case of a patient in the private practice orthopedic setting who returned 6 years after a knee arthroscopic procedure reporting acute onset pain. It was discovered that a broken piece of the outflow cannula that had been used in the arthroscopy was present in her knee joint. This particular case highlights the importance of diligence within the operating room. A variety of instrument failures have been discussed in the literature, and these instrument failures must be considered when discharging patients from surgical procedures. Surgeons and operating room staff must be meticulous in inspection of surgical instruments both before and after the procedure. In our case, the instrument that had broken during the arthroscopic procedure fractured in such a way that it was not immediately evident. Had the staff noticed the change in the instrument either after the initial procedure or before the subsequent procedures in which the instrument was used, the patient could have been notified about the incident sooner.

Drs Bansal and Heckl and Ms English are from the New Mexico Orthopaedics Arthroscopy and Sports Medicine Fellowship, and Dr Heckl is also from New Mexico Orthopaedics, Albuquerque, New Mexico.

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Correspondence should be addressed to: Kate English, BA, New Mexico Orthopaedics Arthroscopy and Sports Medicine Fellowship, 201 Cedar SE, Ste 6600, Albuquerque, NM 87106 (englishke@nmortho.net).

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Figure: Lateral (A) and AP (B) radiographs revealing the retained cannula.
Knee arthroscopy is one of the most common orthopedic procedures performed today. Although the rate of complication is lower than that of an arthrotomy, several complications have been reported, including hemarthrosis; injury to ligaments, vessels, and nerves; deep vein thrombosis (DVT) and pulmonary embolism; and equipment breakage. In addition, several reports exist of retained instruments, such as scalpels.

Many of these complications are difficult to avoid; conversely, retained instruments should never be a problem. This article describes an unusual case where approximately 15 mm of a broken metallic outflow cannula was retained for >6 years. This case reinforces the need for diligence by the operating surgeon, the surgical technician, and the sterilizing personnel to evaluate every instrument introduced into a patient’s body.

**CASE REPORT**

A 69-year-old woman presented to our institution reporting right knee pain approximately 6 years after undergoing a right knee arthroscopy, partial lateral meniscectomy, chondroplasty, and microfracture of the lateral femoral condyle and anterior cruciate ligament (ACL) healing response. The patient had an uncomplicated postoperative course, as well as physical therapy. Subsequently, the patient recovered well for almost 5.5 years. At presentation, she reported an acute onset of pain in the anterior aspect of her right knee. She reported no fever. A radiograph taken by the patient’s primary care physician revealed a metallic object in the intercondylar notch.

On physical examination, the patient was noted to have no effusion. The old arthroscopic incisions were well healed, and the patient’s range of motion was 0° of extension to 130° of flexion. The patient had positive lateral joint line tenderness. The knee was stable to Lachman’s and varus and valgus stress tests. Radiographs revealed a retained metallic foreign body consistent with the tip of an outflow cannula (Figure 1).

The patient underwent arthroscopic removal of the foreign body. On inspection of the joint, the patient was noted to have moderate amounts of scar tissue throughout the suprapatellar pouch, as well as the medial and lateral gutters, which were subsequently debrided. The medial compartment was well preserved, and the lateral femoral condyle was noted to have moderate fibrocartilage fill from the previous microfracture. The outflow cannula was noted to be scarred at the base of the ACL (Figure 2). Subsequently, the cannula was carefully debrided and removed from the ACL base (Figure 3). Fluoroscopy revealed no further metal foreign body or debris.

The patient’s subsequent postoperative course was complicated by DVT, which was treated with appropriate anticoagulation and is currently being treated with physical therapy, showing significant improvement.

**DISCUSSION**

Arthroscopy of the knee is a commonly performed procedure with a low reported complication rate. Breakage of instruments such as basket forceps, graspers, and knife blades are rare complications. Dick et al reported 26 cases of instrument failure in 3714 arthroscopies (0.7%). Rajadhyaksha et al reported a case of a scalpel blade recovered 10 years after the index arthroscopy. Small reported an incidence rate of 0.05% of instrument failure and noted that an arthrotomy was required to remove pieces of broken instruments in 9.6% of instrument failures.

In our case, an outflow cannula broke and was retained within the patient’s knee for 6 years. This particular case raises a number of questions: What is the life span of metallic cannulas that are being used daily, undergoing multiple sterilizations? How can health care providers be more diligent about checking each instrument removed from the patient’s body?
This case stresses the importance of diligence on the part of the surgeon and the operating room staff in checking all instruments that have been introduced to a patient’s body. Orthopedic surgeons should not be lulled into a sense of complacency when performing any procedure, even one with a low risk of complication such as knee arthroscopy.

REFERENCES