INTRODUCTION

Hip arthroscopy was first performed in our practice with the use of the supine approach on a fracture table for distraction. During our early experiences, problems of getting into the hip joint and complications such as the scuffing of articular cartilage, poor maneuverability, and the inability to achieve the result before extensive extravasation made the procedure difficult. Specific instruments were not developed, and distraction parameters were not established. As a result, the procedure was not predictable for entering the intra-articular space that is now known as the central compartment. In 1931, Burman was the first to use an arthroscope in the hip in a cadaveric study. However, he was unable to enter the central compartment, even with distraction. Our associate James M. Glick, MD, performed 11 procedures between 1977 and 1982, and he had difficulty getting in on two occasions. Because of our experience with the lateral decubitus positioning in total hip replacements, the idea of approaching hip arthroscopy in a similar way was developed. We dissected a cadaver hip to determine the most direct access to the intra-articular space, and we then described the anterior–peritrochanteric and posterior–peritrochanteric trochanteric portals (Figure 10-1); these have subsequently been referred to as the anterolateral and posterolateral portals. In 1986, distraction was introduced by Erikkson with the use of a fracture table to facilitate entry into the central compartment. We developed a rope-and-pulley system with weights as we used for shoulder arthroscopy as our first hip distractor (Figure 10-2). The first patient in whom we performed arthroscopy with the lateral approach was a massively obese woman with hip pain in whom Dr. Glick had previously performed arthroscopy without success in the supine position. In the lateral decubitus position, the obese portions of her thigh drooped down to expose a prominent greater trochanter. The neurovascular structures are safely away from the portals, and the surgeon is very familiar with their location; these portals offer a direct shot into the femoroacetabular joint. Many of the surgeons interested in hip arthroscopy at that time adopted the technique and continue to use it today.

In response to industry’s interest in developing arthroscopic instruments and distractors, the supine approach was once again used and described by Byrd. There have been editorials, journal articles, and book chapters that argue the benefits of one as compared with the other, and it is my opinion that the approach that is used should be based on the training and comfort level of the surgeon. All procedures that involve hip arthroscopy are done with the use of both techniques in equal measure, and complications are not technique specific. A distractor (Hip Positioning System; Smith & Nephew, Andover, MA 01810) has been designed to be used on any operating room table for both techniques, and all instruments designed for hip arthroscopy can be used for patients who are in either position.

The major advancements in getting into the central compartment were a result of distraction and the use of Nitinol wire cannulated trochars (Figure 10-3). Later, the development of longer arthroscopes, slotted (half-pipe) cannulas, and curved and flexible instruments allowed for advanced techniques that have followed a similar path as those used for knee and shoulder arthroscopy.

INDICATIONS

As Thomas Byrd said, “the key to successful results most clearly is proper patient selection.” In our practice, we believe that the patient’s expectations should match the surgeon’s. Hip arthroscopy during the early 1980s was felt to be a procedure looking for indications. Clearly, the list of indications has grown with the advancements of the technique.

Loose and Foreign Bodies

Originally hip arthroscopy was performed for the removal of loose and foreign bodies. Today, this has been the clearest indication for the procedure, and arthroscopy has essentially replaced arthrotomy as a much less invasive alternative. The loose bodies may be from synovial chondromatosis (i.e., rice-like or osseocartilaginous), bullets, or loose cement or wires used in total hip replacements.

Osteochondral Fracture Fragments

Articular cartilage injury from a younger patient falling directly onto the side of a hip may result in an osteochondral fracture and loose fragments, with the reaction of the head resembling aseptic necrosis. The removal of the fragment and the microfracture of the base have been shown to be beneficial.

Labral Lesions

Labral lesions represent the most common indication for hip arthroscopy; however, their treatment has resulted in a dearth of new procedures. In the past, partial or total excision was the treatment of choice. However, the outcome was not predictable, especially in the presence of articular cartilage damage or arthritis. Primary labral repair was equally controversial and
also had unpredictable outcomes. Recently, femoroacetabular impingement has helped to explain the cause of atraumatic labral tears; its treatment with head–neck osteoplasty, rim trimming, and labral debridement or refixation has become more common when labral tears are treated.

**Developmental Dysplasia**

In the past, developmental dysplasia of the hip was a contraindication for hip arthroscopy, and osteotomy was recommended. Today, if the dysplasia is borderline (i.e., a center-edge angle of 20 degrees to 25 degrees) or in combination with femoroacetabular impingement, then the patient may benefit from arthroscopic treatment. The intra-articular pathology includes labral tears, articular cartilage damage, and the disruption of the ligamentum teres. The peripheral compartment pathology may have a lax capsule and an anterior rim osteophyte. Techniques to treat this condition arthroscopically have had favorable outcomes that have obviated arthrotomy. Capsulorrhaphy for laxity can be performed more successfully and with less biomechanical instability.

**Synovial Disease**

The treatments of synovial diseases with biopsy for rheumatic diseases or synovectomy for pigmented villonodular synovitis (PVNS), synovial chondromatosis, or infection are very effective. The problem has been getting to all of the synovial surfaces within the central and peripheral compartments, but this issue has been improved with capsulotomy.

**Adhesive Capsulitis**

Adhesive capsulitis has been recognized as a cause of hip pain similar to that seen in the shoulder. Debridement and synovectomy for primary or revision cases have shown benefit.

**Sepsis**

Sepsis has clearly been successfully treated with hip arthroscopy. Arthroscopy with washout and debridement is now the primary treatment for acutely infected total hips.
Femoroacetabular Impingement

Femoroacetabular impingement is a mismatch between the shape of the head-neck junction and the acetabulum that causes an overload to the labrum and the articular cartilage that results in damage to both. The arthroscopic technique has evolved from the open technique and today is accepted as a treatment for the condition. Labral refixation and bone reshaping have improved the outcomes as compared with debridement alone. Of course, moderate to severe osteoarthritis with a loss of joint space and a limited range of motion are contraindications.

Hip Arthritis

The treatment of hip arthritis has had an upsurge with the use of hip arthroscopy as a bridge technique before total hip replacement. With the advent of bone reshaping techniques being performed arthroscopically, the results of debridement, microfracture, and resection osteoplasty have improved the outcomes as compared with debridement alone. Of course, severe arthrosis is a contraindication.

Staging Aseptic Necrosis

The treatment of end-stage aseptic necrosis has met with poor results; however, staging for open techniques (e.g., vascularized fibular grafts) has employed hip arthroscopy.

Coxa Sultans

Coxa sultans (i.e., snapping hip syndrome) can be treated arthroscopically with releases. The iliopsoas tendon is accessible at the lesser trochanter and in the transcapsular region near the inferior synovial fold for an arthroscopically facilitated release. The peritrochanteric region is the latest frontier in hip arthroscopy. Release of the iliotibial band for the external snapping and repair of gluteus medius ruptures (i.e., the rotator cuff of the hip) has been performed with success.

SURGICAL TECHNIQUE

Anesthesia

Most commonly, we use general anesthesia. If regional anesthesia is used, there must be muscle relaxation. Antibiotic prophylaxis is warranted with the use of one of the cephalosporins. Deep vein thrombosis prophylaxis is performed with the use of compression stockings and a sequential pump on the downside leg.

Patient Positioning

The patient is placed on a well-padded operating room table in the lateral decubitus position (Figure 10-4). An axillary roll is positioned, and hip positioners are used to support the pelvis. By preventing the pelvis from rolling back on the perineal post, the risk of pudendal neuropraxias may be reduced.

The foot is wrapped with padding, and the foot holder is applied, with care taken to avoid skin pinching by the device. The leg is held in abduction by the assistant during the careful placement of the well-padded perineal post. We have determined that the post should have an outer diameter of more than 9 cm for safety; commercially available hip distractors all exceed this size. The genitalia are inspected to ensure that they are free from compression. The foot holder is applied to the distraction arm, and only enough traction is applied to support the leg.

The fluoroscopic C-arm is brought in with the apex under the table and centered at the level of the greater trochanter. Preoperative x-rays are performed to check positioning and hip anatomy. A trial of distraction will be of benefit for two reasons: 1) to check for the distractibility of the joint and 2) to ensure that the foot is properly secured in the foot holder. If the hip does not distract well, this may be the result of a tight or hypertrophic capsule, and a few minutes of traction may allow the hip to relax. Failure to distract may require greater forces of distraction, or it may necessitate capsulotomy. If the foot slips out of the holder during the trial, less padding may help to prevent slippage. Adequate security of the foot in the holder is imperative to prevent an accidental release of the distraction when the instruments are in the central compartment, which may result in iatrogenic articular cartilage damage.

Sticky towels or drapes are placed from the iliac crest to 6 inches below the greater trochanter and from a sagittal line lateral to the anterior superior iliac spine anterior and the sciatic notch posterior.

The anesthesiologist is at the head of the table, the surgeon stands anterior, and the assistant stands posterior. The scrub technician stands next to the surgeon, with the C-arm in between them. A Mayo stand is placed above the patient's shoulder for easy accessibility to the instruments and for the organization of the arthroscopic cords.

We typically drape with split sheets, and we use a large plastic pouch to catch fluids.

Distraction

For optimal viewing and safe surgery, at least 1.2 cm of distraction is required before the femoroacetabular joint (central compartment) is entered. Three commercially available distractors for the lateral approach are available from Mizuho OSI (Union City, CA 94587-1234), Innomed, Inc. (Savannah, GA, 31404), and Smith & Nephew. The Mizuho OSI and the Smith & Nephew distractors have the advantage in that hip mobility is adjustable during surgery (Figure 10-5).

Not all distractors have a tensiometer to measure the force of distraction. Distraction should be thought of in the same way as a tourniquet. James M. Glick, MD, demonstrated that, with the use of evoked potentials, forces of less than 75 lb for less than 2 hours were safe and did not cause permanent neuropraxias. In our practice, we have performed more than 750 procedures without a tensiometer, with care taken to keep the distraction time to a minimum; we have had no neuropraxias. We try for traction of less than 50 lb and for less than 1 hour to allow for a large margin of safety. It is important to realize that complications may occur from too little or too much traction and that, to accomplish the procedure, the joint surfaces must be separated for the introduction of instruments.

The perineal post should have padding of at least 9 cm in diameter, and it should be positioned eccentrically over the pubic symphysis, with little to no compression to the downside thigh (Figure 10-6).

We initiate the operative distraction after the case is entirely set up and after all of the equipment has been turned on and is functioning. We record the traction time, which may be entered in the operative record. The assistant or the circulating nurse announces the distraction time at 15-minute intervals.

After the intra-articular portion of the surgery is finished, all of the distraction forces are released, and the periarticular work in the peripheral compartment can be performed without distraction concerns.
OPERATING ROOM SETUP

Leg Position

With the patient in traction, the hip capsule is maximally relaxed in 15 degrees of flexion, neutral rotation, and 15 degrees of abduction. We use this as a starting position, and we make positional adjustments during the procedure to facilitate the ability to get into different areas. In addition, the perineal post may be elevated laterally to add an abduction moment for better viewing.
The 30-degree arthroscope is best for central viewing. It is easier to get oriented with this angle, and it is the best for getting started with the use of the lateral approach. The 70-degree arthroscope is best for peripheral viewing, for use around the femoral head and deep in the fossa, for viewing the fovea, and for creating additional portals. For thin patients, standard arthroscopic equipment may be used if the sheath has a short hub. The advantage of commercially available hip kits is that they contain the proper sheath lengths and cannulated systems. The option for longer arthroscopes should be available for larger patients and for those cases in which excessive swelling occurs in the thigh during the procedure.

Both straight and curved graspers are necessary, and so are straight and curved shavers. To insert curved instruments, a slotted cannula or a flexible plastic sheath is used.

Radiothermal probes are used for coagulation and for the cutting and ablation of tissues (e.g., capsule, labrum). Many of these probes are curved or bendable, and they can reach lesions that are not accessible to straight shavers. Flexible wands for hips can be manually maneuvered with a trigger handle.

Angled neurocurrettes and picks are used to treat arthritic defects and to remove attached and loose bodies that are located in areas that are difficult to reach, such as the medial acetabular fossa and the anteromedial acetabulum.

The Pump

It is generally accepted to use a pump system because the exact pressure and flow can be controlled and monitored. We recommend using an outflow-dependent pump, which lowers the amount of extravasation into the soft tissues. The pump pressure is set in the same way that it is for shoulder settings or slightly above diastolic pressure.

The Tower

The arthroscopic tower with the monitor and instrument boxes should be placed posterior and slightly cephalad adjacent to the C-arm for optimal viewing of all the settings by the surgeon. The cords from the tower are brought onto the Mayo stand and organized for the surgeon to easily reach for the shaver and wands. It is more efficient and safe for the Mayo stand to act as neutral ground that only one person accesses to avoid accidental glove punctures or lacerations (Figure 10-7, A and B).

THE PROCEDURE

The portals for the lateral approach are nearly identical to the supine approach, except the anterior portal is located approximately 2 cm lateral to the anterior superior iliac spine (ASIS) line. As a result, the anterior portal courses in an intermuscular plane between the sartorius and the tensor fascia lata (Figure 10-8).

Distraction can only be initiated after everything is set up, the patient is prepped and draped; all of the instruments, the camera, and the shaver sets have been plugged in; the foot controls have been positioned; and it has been determined that everything is functioning correctly. For small and flexible patients, start with 25 lb to 50 lb of force. With large and stiff patients, start with 50 lb to 75 lb if you are using a tensiometer; if you are not using a tensiometer, apply weight until you observe at least 1 cm to 2 cm of separation between the head and the acetabulum on the fluoroscopic view.

Viewing with the C-arm fluoroscope and starting with the anterolateral portal, a long 17-gauge needle is inserted, and it is observed passing between the head of the femur and the acetabulum (but closer to the femur to avoid puncturing the labrum). Listen for a hiss of sound as the joint suction seal is broken and room air is sucked into the joint. Observe for the

Figure 10–8 Portals for the lateral approach on the right hip. A, Anterior; AI, anteroinferior; AL, anterolateral; ASIS, anterosuperior iliac spine; PL, posterolateral.

Figure 10–7 The surgeon’s view from the front of the patient. A, There is a clear view of the tower’s instrument boxes, the monitor, and the outflow-dependent pump. The Mayo stand is above the patient’s shoulder, and it is used for organization and for easy access to the instruments. B, A view of the fluoroscopic monitor toward the foot of the table.
traction forces to reduce on the tensiometer or for a sudden distal subluxation of the hip. Obtain the desired distraction, which is usually more than 1.2 cm. Insert a Nitinol wire through the needle, and incise the skin with a No. 11 blade. Push the cannulated arthroscopic sheath over the wire and into the joint while advancing it concentrically over the wire to prevent kinking and wire breakage. Backing the wire out slightly will reduce cartilage trauma.

If it is difficult to advance into the joint, suspect that the wire is going through the labrum. In such instances, it is best to start over and to reposition the needle to avoid labral avulsions or tears. In some cases, with stiff hips, the anterior capsule is very thick and very difficult to penetrate. In that situation, it is best to begin with the posterolateral portal or to gently cut the capsule with a long Beaver blade through the arthroscopic sheath before advancing into the joint. Entry into the joint should always be controlled to avoid damaging the labrum or scuffing the cartilage. However, pushing a cannula through the anterior hip capsule is difficult and requires a lot of force as compared with any other joint in the body (Figure 10–9).

Introduce a 30-degree arthroscope, and visually sweep the joint under air or fluid. Next, create the anterior and posterolateral portals with the use of the same technique and with the added benefit of viewing the entry of the needle, the Nitinol wire, and the instruments under direct vision to prevent injury to the cartilage and the labrum. We feel that this approach is much safer and that iatrogenic injury is reduced. When creating the anterior portal, take care to only incise the skin superficially to avoid the laceration of a branch of the lateral femoral cutaneous nerve. Spreading through the subcutaneous tissue with a clamp is also advised for this portal (Figure 10-10).

After the arthroscope and the instruments are in place, the central compartment should be inspected in a methodic fashion to plan the necessary treatment. Attention to time is imperative to allow for the sufficient management of the pathology.

THE VISUAL SWEEP AND ANATOMY

The acetabulum and its structures are viewed first. Initially, the femoral head cannot be entirely viewed with the hip distracted. However the hidden portions will be observed when the peripheral compartment is inspected later during the procedure (Figure 10-11).

With the 30-degree scope, start by observing the acetabular fossa and the fat pad. Petechial hemorrhage is normal as a result of the traction forces that are pulling negative pressure on the vessels. However, atrophy of the fat pad is abnormal. Look for loose bodies, rice bodies, notch osteophytes, and masses. Advance the scope deep to view the ligamentum teres to look for tears or avulsions. The transverse acetabular ligament is very hard to see unless the patient has hyperlaxity.
Rotate the scope posterior and inferior, and pick up the posterior labrum at the articular margin, noting the posterior third. Look behind the labrum for loose bodies, and then follow the labrum lateral and anterior, noting a normal cleft in the posterior articular margin with a small labral cartilage sulcus. The sulcus is not an old avulsion fracture nor from a posterior subluxation. Note any labral fraying or tears and articular changes.

Look at the middle third, and note any labral cartilage separations, fraying, or degenerative changes. The surface may be smooth, or it may have a cobblestone appearance during the early stages of degeneration.

As the scope is rotated to the anterior area, look for hypertrophy of the labrum in patients with dysplasia. The acetabular cartilage may be soft, or it may appear blistered or delaminated in dysplastic patients with anterior groin pain, instability, or popping. Look anterior beyond the labrum in the sulcus for synovitis and loose bodies. Move the scope to the superior sulcus of the joint to see the nonarticular side of the labrum in the pericapsular space from anterior to posterior. Look for evidence of cysts, spurring, and labral tears. All the while, a probe or a switching stick is used to probe.

Next, observe as much of the femoral head as possible with the same method, and, if necessary, rotate the leg while it is in traction. At this point, we switch to a 70-degree scope to look deeper into the notch and to have a better view of the femoral head fovea with its ligamentum teres insertion.

After viewing this area from the anterolateral portal, the same procedure is carried out from the posterior portal if we are not satisfied with the initial viewing.

If getting into the central compartment is very difficult or if the surgical plan is to remove bone in patients with femoroacetabular impingement, a capsulotomy is performed first. The capsule is viewed by sweeping the muscle with a switcher stick and removing the interval bursa with the shaver. Using a radiofrequency (RF) cutting probe and positioning the tool near the base of the neck anterior to the lateral neck to avoid damage to the lateral epiphyseal branch of the medial femoral circumflex artery, the capsule is incised along the neck. Care is taken as the labrum is approached to avoid cutting it. Many times, the zona orbicularis looks like the labrum, and it is distinguished by its more distal position on the neck as seen on the C-arm x-ray. If the capsule is excessively thick, a partial capsulectomy is then performed.

Corrective surgery is performed, depending on the diagnosis, and the distraction is completely released to allow the hip to be moved in rotation and flexion.

With the hip in slight flexion and neutral rotation, the 17-gauge needle is inserted through the anterolateral portal along the femoral neck toward the head–neck junction. While this procedure is observed under fluoroscopy, a small pop is felt as the needle passes through the capsule, and the effusion dribbles out of the needle (Figure 10–12). A Nitinol wire is passed and bounced off of the medial capsule to confirm that it is intraarticular. The arthroscopic sheath is advanced over the wire, and then the anterior, medial, inferior, and posterior peripheral spaces can be viewed.

First, note that the femoral head is seated in the labrum as it transforms into the transverse acetabular ligament. The zona orbicularis crosses the field, and one may see the vincula-like vessel in the lateral synovial fold going into the femoral neck. Push the scope deep and posterior to view the sulcus, and look for loose bodies.

As the scope is withdrawn, rotate it, and then advance it anterior medial and inferior to appreciate the reflection of the iliopsoas tendon on the capsule. The tendinous bulge on the capsule

![Figure 10–11 Arthroscopic view of a right hip in room air. A, Acetabulum; AL, anterior labrum; ALCJ, anterior labrocartilaginous junction; F, fossa; H, head; L, labrum; LS, lateral sulcus; LT, ligamentum teres; PL, posteri](image)

![Figure 10–12 Fluoroscopic view of a left hip with a Nitinol wire in the peripheral compartment touching the medial capsule from the anterio](image)
Techniques in hip arthroscopy and joint preservation surgery

is usually opposite the inferior synovial fold at the head-neck junction; it should not be mistaken for the zona orbicularis. Flexing the hip will relax the capsule for a larger field of view, and this improves the mobility of the scope and the operative instruments (Figure 10-13). An anteroinferior portal may be created at the level of the femoral neck midway between the head-neck junction and the lesser trochanter for both the arthroscope and the operative instruments. A far anteroinferior portal may be used at the level of the lesser trochanter for iliopsoas release.

Figure 10–13. Arthroscopic view of a right hip in the peripheral space. H, Head; L, labrum; LN, lateral neck; LSF, lateral synovial fold; MC, medial capsule; MN, medial neck; MSF, medial synovial fold; ZOL, zona orbicularis lateral portion.

At the completion of the procedure, close the wounds, and apply a standard dressing. An intra-articular injection of a long-acting local anesthetic (e.g., bupivacaine) will make recovery and the trip home from the surgical center more tolerable.

In the recovery room, have the patient begin both passive and active range-of-motion exercises of the hip. Crutches are used, with the amount of weight bearing being dependent on the patient’s diagnosis and treatment.

TECHNICAL PEARLS

- Position the patient on the table closer to the side on which the surgeon is working for better ergonomics and less surgeon fatigue.
- Pad down the bony prominences on the side, the perineal nerve, and the foot.
- Carefully place the axillary roll.
- Check the part of the genitalia against the perineal post.
- Pad the foot that is going into the distractor, and double check that it is well seated and securely strapped in.
- Test the distractor before scrubbing to prevent inadvertent foot slippage.
- Keep the C-arm fluoroscope under the table throughout the case for instrument positioning and for checking the surgical progression.
- Always use a C-arm x-ray to confirm needle and cannula placement.
- Choose special instruments ahead of the procedure (e.g., spinal curettes and heavy graspers for large, loose bodies and osteophysectomy; labral refixation anchors).
- If there is a lot of resistance during needle placement, it may be because the needle is hitting the acetabular rim (not seen on x-ray) or the labrum. Back out, and reposition the needle.
- When distracting the hip, if there is poor excursion of the head (i.e., less than 0.5 cm), try to break the suction seal of the labrum with the spinal needle.
- If distraction does not separate the head from the acetabulum despite any amount of distraction in any position, getting into the central compartment may be facilitated by extra-articular capsulotomy and rim trimming of the acetabulum.
- Intra-articular capsulotomy facilitates instrument mobility.
- When working in the anterior portion of the central compartment, bringing the leg into additional extension will open up the space.
- Any instrument may be placed with the use of a slotted cannula.
The dressings are removed after 24 hours, and the patient is then allowed to shower. Therapy is started within a week to help the patient to regain motion and strength.

POSTOPERATIVE REHABILITATION

Aggressive physical therapy is not necessary after most hip arthroscopic procedures. In some cases, moving too quickly with rehabilitation may cause unnecessary pain, which impedes progress. If a therapist is used, he or she must have full knowledge of the procedures performed and the precautionary restrictions imposed.

We have found that instructions to the patient for self-therapy during the first month have eliminated the complications that can result from physical therapy. After a month, prescribed therapy may be used. We initiate the patient on stationary bike and elliptical trainer exercises that are followed by swimming and pool exercises. The idea is to allow for early range of motion and weight bearing for better joint mobility and proprioception.

In most cases, repetitive joint percussion (e.g., running) is avoided until pain and swelling are gone and the patient has good hip stability, which usually happens approximately 3 months after the procedure.

RESULTS

The success of the lateral approach cannot be measured by a double-blind prospective study, but it should be judged by the facilitation of the ability to get into the central compartment of the hip. In that sense, it was the first, most reproducible, and widely used technique before the development of specific hip kits or hip distractors. The outcomes of treating specific conditions with the use of either the lateral or the supine approaches are the subject of other chapters in this book.

COMPLICATIONS

There are many potential complications; however, with experience and attention to detail, they may be eliminated. In our first 60 cases, we had complications 15% of the time; in our most recent 1000 cases, we have had a complication rate of only 0.4%. We have never had a deep infection; however, there have been four superficial infections that have involved the anterior portal. It is not uncommon to have instruments pass in and out of the portals numerous times during a case, which can irritate and injure the skin around the portal.

During the early years of the development of this procedure, there were more extravasations into the thigh and, in nine cases, into the retroperitoneal space; the latter required an intensive
care unit stay with the patient intubated and, in one case, a para-
centesis to drain the fluid. This complication was virtually elimi-
nated with the modern outflow-dependent pumps and with
careful attention paid to the operative time.

Neuropraxia of the pudendal nerve was common before the
use of more than 9 cm of padding on the perineal post and before
its position was offset from the pubic symphysis. Damage to the
major nerves has rarely occurred, and, with the use of modern
distractors and keeping distraction time to less than 2 hours,
it is even more rare. Scope trauma to the articular cartilage
occurs even by the most experienced surgeons, and it is gener-
ally underreported. Instrument breakage does occur, but most
of these broken instruments are retrieved. Infections are very
rare. We have never had a patient develop deep sepsis after hip
arthroscopy, but, if this did occur, the treatment is arthroscopic
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