

**On the Knee joint arthroscopy – A Review with a Case study****Bülent Kılıç\*, Ali Serdar Yücel\*\* and Aylin Zekioglu****\*Orthopedist, Tekirdağ, Turkey, \*\*Firat University, Faculty of Sports and Science, Elazığ, Turkey, \*\*\* Celal Bayar University School of Physical Education and Sports.****Email : [alsetu\\_23@hotmail.com](mailto:alsetu_23@hotmail.com)****Corresponding Author****Ali Serdar Yücel****Firat University School of Physical Education and Sports BESYO, Elazığ, Turkey,****Email : [alsetu\\_23@hotmail.com](mailto:alsetu_23@hotmail.com)****Article History****Received on 16 February, 2014;****Received in revised form 20 March,****2014; Accepted 25 April, 2014****Abstract**

Arthroscopic surgical interventions can be performed as a surgical day case. The low morbidity of the arthroscopic surgery makes it attractive for both the surgeons and patients and it also has certain advantages such as small incision size and a small amount of bleeding and pain. Therefore, there is a possibility of early ambulation and discharge, which reduces risk of thrombophlebitis. The infection risk is also low due to the small incision size and the disinfection fluids used. Our study included 114 patients with a knee joint injury, on which arthroscopic partial meniscectomy was performed. We observed that pre-operation diagnoses made during physical and radiological examination matched 87% of those made during the surgery. It was also observed that 16 patients had fluid extravasation into the femoral and posterior tibial regions, 22 patients had post-op hemarthrosis, 15 patients had serous fluid blister, 11 patients suffered pain and ecchymosis for a period of 1 month on the side where the tourniquet was released, 9 patients experienced tibial collateral ligament injury and 18 patients had portal infection treated with antibiotics. 89% of problems the patients experienced disappeared.

**Keywords :** Arthroscopy, arthroscopic partial meniscectomy, meniscectomy**Introduction**

Arthroscopy means the imaging of synovial spaces with a camera and a scope and can be performed under general, local or spinal anesthesia (Gündüz, 2007). It provides a differential diagnosis for the knee problems as well as ensuring detailed classification of meniscus lesions, and on this basis, the preference of proper treatment for each kind of knee joint injury (Eskandari, 1997; Hamberg *et al.*, 1983; Akdemir, 2008).

Recently, arthroscopy has gained popularity among the other knee joint operations due to such advantages as performability through a smaller incision, enabling better vision of intra articular structures, having a lower morbidity rate, short-term

hospitalization, a quicker rehabilitation period (Akdemir, 2008). There is no doubt that arthroscopy provides great convenience for orthopaedic surgeons by enabling direct vision of the intra articular structures. On the other hand, failure to provide a vision of extracapsular structures is a disadvantage (Nar, 2008).

The joint structures that are treated using arthroscopy are as follows: Quadriceps bursa, suprapatellar bursa, plica synovialis suprapatellaris, cartilaginous patella, patellofemoral joint, femoral condyles, tibial plateau, medial and lateral meniscus, anterior and posterior cruciate ligament, lateral inside wall of joint cavity, plica synovialis infrapatellaris, infrapatellar fat pads, synovial villi. The areas that cannot be reached are inside of the meniscus, outer side

of posterior cruciate ligament (PCL), and popliteal fossa (Barry, 1998 and Ege, 1998). In arthroscopy, anterior cruciate ligament (ACL) is entirely visible. The femoral insertion of the ACL is observed under the anterior cruciate ligament. Surrounding the fat pad impairs the visibility of posterior cruciate ligament. In case anterior cruciate ligament is torn or ruptured, posterior cruciate ligament can easily be used to replace it (Barry, 1998). In arthroscopy; partial meniscectomy and biopsies can be performed, pathological plica can be relaxed, and intraarticular free bodies can be removed without opening the joint (Gündüz, 2007 and Eskandari, 1997).

In arthroscopy technique, after the scope is placed through the standard anterolateral portal, the first suprapatellar cavity is examined while the knee is in the extended position. Evacuation cannula is placed. Then scope is rotated 180° in the reverse direction and patellofemoral joint is assessed. The femur medial condyle is followed as far as medial compartment and anteromedial is opened. Medial structures are examined with the help of a probe. Then the lateral compartment is examined. At a knee flexion angle of 70°, intercondylar notch and anterior-posterior cruciate ligaments are examined. After all the examinations are completed, the operation starts based on the pathological condition. On the completion of the operation, the joint is irrigated for a while, and if needed, a drainage system is set-up and the operation is ended (Akdemir, 2008).

### Indications of A Knee Joint Arthroscopy

Arthroscopy has indications such as defining intra articular pathology and planning the treatment, removing specific intra articular pathologies such as meniscus tear, joint mouse, and osteophytes that cause pain due to compression, and saving time for the patient with such methods as arthroscopic joint debridement and/or abrasion arthroplasty before more

serious surgical intervention (osteotomy, total or unicondylar knee arthroplasty, etc.). It is more successful in overcoming meniscus-tear related symptoms. In case meniscus tests are positive in physical examination, arthroscopic treatment is an appropriate treatment yet not recommended for those with mechanical axis deviation (Okta, 2010; Reddy and Gambardella, 2001; Baumgaertner *et al.*, 1990; Ogilvie-Harris and Fitsialos, 1991).

The benefits of arthroscopy are as follows :

1. Proteinase concentration that is increased due to arthroscopic irrigation and cartilage degradation products are removed from the joint and synovial reaction is reduced (Okta, 2010),
2. Chlorid ions in the irrigation solutions prevent painful stimulation to pass to unmyelinated C fibers. This causes a pain relief especially in cases with knee osteoarthritis (Okta, 2010; Jackson, 1991),
3. Mechanical symptoms are relieved with the debridement of chondral flap, pathological plica and degenerative meniscal tears (Okta, 2010),

The usefulness of arthroscopy can be summed up as follows :

1. It enables the diagnosis and treatment of all incidents that hamper the proper functioning of the joint, regular daily activity, and business activities,
2. It enables the diagnosis of the knee-joint related cases that could not be diagnosed for various reasons,
3. In cases where clinical diagnosis is clear, it enables to prove the diagnosis before performing arthroscopy,
4. It enables early diagnosis and treatment of knee injuries especially of professional athletes who are under economic and social pressure,

5. Helpful in medicolegal publications and insurance cases, and in cases where the documentation of specific lesions,
6. In the knees with arthritis, it enables to make a final diagnosis and identify the necessary treatment method.
7. In the knees with arthritis, it provides pain relief with the irrigation of the joint and the disintegration of minor adhesions.
8. It is effective in cases where small free bodies or meniscus parts are needed to be removed.
9. It is used in cases where the disease prognosis is needed to be followed (Akdemir, 2008 and Tatari, 1993).

#### Contraindications of Knee Joint Arthroscopy

Surgery is a field of contraindication. In cases where the movement of the knee joint is highly limited, there is no contraindication and arthroscopy is difficult to perform due to lack of sufficient maneuver (Nar, 2008).

Arthroscopy should be performed only after studying the complete history, physical examination, and standard non-invasive diagnostic methods. The absolute contraindication of the arthroscopy is the presence of joint sepsis in the local skin infection or the contamination of surgical field away from an infection focus. Besides, as there is a risk of excessive liquid extravagation and resulting compartment syndrome in partial or complete ankylosis of the joint and major collateral ligamentous and capsular tears, they consist of relative contraindications (Eskandari, 1997 and Jackson, 1996).

In short, the contraindications of the arthroscopy are as follows :

- Sepsis or local infection,
- Coagulopathy and other systematic diseases,
- Minimal degenerated knees that can respond to conservative treatment,

- Cases to which complete history, physical examination, and standard non-invasive diagnostic methods are not applied,
- Partial and complete ankylosis: it makes manipulation impossible; but there are publications indicating a usage for lysis of adhesions,
- History of hemarthrosis,
- Major lateral and capsular tears: because it causes excessive liquid extravagation (Eskandari, 1997 and Tatari, 1993).

#### Arthroscopic Anatomy of Knee Joint

To recognize the lesions in the knee, a systematic examination is needed during arthroscopy. The listed order of knee joint arthroscopic examination should be checked one by one (Nar, 2008). It is more important for surgeon to follow the same order in every examination than following the order during the examination (Başaran, 2009; David *et al.*, 2004; Canale and Beaty, 2008).

The knee joint is divided into 7 compartments during knee joint arthroscopy. These are (Başaran, 2009) :

- a) Suprapatellar pouch and patellofemoral joint,
- b) Medial diverticulum,
- c) Intercondylar notch,
- d) Medial compartment.
- e) Posteromedial compartment,
- f) Lateral compartment,
- g) Lateral notch and posterolateral compartment,

#### (a) Suprapatellar pouch and patellofemoral joint :

As the knee is in the extended position, the arthroscopist systematically examines the following structures with the arthroscope in the stretched suprapatellar pouch: Synovia, Synovial plica, Patella, Femur trochlear notch, Quadriceps tendon (Tatari, 1993).

The figure (below) of the patellofemoral joint shows that lateral facet is at a close distance to the

femur and lies slightly lateral towards the center of intercondylar channel, and medial facet seems to lie more vertical compared to the lateral. Medial facet is in contact with the femur in flexion; but, this relationship cannot be seen through arthroscope (Nar, 2008 and Tatari, 1993).

When the front face of the arthroscope is rotated to face superior, quadriceps tendon posterior face can be seen. The synovium in this area is quite thin. If the arthroscope is turned to left and right, synovial plicae trochlear notch (Başaran, 2009) and synovium can be seen. The villus structure, vascularity, and crystal accumulations are assessed. Suprapatellar plica is rarely assessed pathologically (Nar, 2008; Başaran, 2009; David *et al.*, 2004; Canale and Beaty, 2008).

#### **(b) Medial Diverticulum :**

When the arthroscope is slid down along medial femoral condyle, medial diverticulum can be seen. Free bodies in the medial diverticulum, changes in the synovia, and traumatic capsular damage can be assessed.

#### **(c) Intercondylar notch :**

Infrapatellar fat pad, ligamentum mucosum, medial and lateral tibial spines, frontal adhesion faces of both menisci, Humphry and Wrisberg ligaments are assessed (Nar, 2008).

As the anterior cruciate ligament is relatively in front of the posterior cruciate ligament, it is impossible to see the latter. While most of the anterior cruciate ligament and tibial insertion can be seen from the anterolateral portal, femoral connection can be better seen from anterolateral portal. The optimum vision angle to observe cruciate ligaments is 45°-90° (Tatari, 1993; Akdemir, 2008).

In posterior cruciate ligament avulsions, these synovial plate may bleed and tear. In intercondylar notch, anterior cruciate ligament (ACL) is the most

prevalent structure. Anterior cruciate ligament together along with a adhesion face on the tibia is best observed from anterolateral portal (Başaran, 2009; David *et al.*, 2004; Canale and Beaty, 2008).

In cases where the synovial sheath is not torn, the torn anterior cruciate ligament fibers can be seen by opening the sheath. The undamaged anterior cruciate ligament is tight and tense during examination with the probe. When torn, it loses its tightness (Başaran, 2009; David *et al.*, 2004; Canale and Beaty, 2008).

#### **(d) Medial compartment :**

Medial compartment is entered by applying valgus pressure on the knee with a scope of 30°. A probe is placed on anteromedial surface. Medial meniscus and femoral condyle is palpated. The deep medial collateral ligament is assessed by removing medial meniscus body. Hemorrhage in this area is assessed as sprain in the collateral ligament (Nar, 2008).

#### **(e) Posteromedial compartment :**

Posteromedial compartment can be monitored from posteromedial portal or the intercondylar notch with an oblique scope of 70°. From this point of view, peripheral part of posterior horn of the medial meniscus, distal of posterior cruciate ligament, posterior femoral condyle and free bodies can be seen (Başaran, 2009; David *et al.*, 2004; Canale and Beaty, 2008). When the compartment is intended to be reached from posteromedial portal, injector needle can be used to determine where open a portal (Başaran, 2009; David *et al.*, 2004; Canale and Beaty, 2008).

#### **(f) Lateral compartment :**

After full observation of intercondylar notch, anterior of lateral compartment is rotated 45° to be observed. When the knee is positioned with an angle of 80-90°, meniscus posterior and popliteus tendon are assessed (Nar, 2008). Lateral compartment of the knee

can be reached both through the anterolateral antero-medial portal. If the anterolateral portal is to be used to see lateral compartment, the portal is right above the anterior horn of the lateral meniscus (Başaran, 2009).

Lateral meniscus and lateral compartment can be fully observed from anteromedial portal. If arthroscope is pushed forward towards the fat pad posterior and under ligamentum mucosum, arthroscopist may encounter difficult in entering from anteromedial compartment to the lateral compartment because anterior horn of the external meniscus has an intercondylar connection (Tatari, 1993).

#### **(g) Lateral diverticulum and posterolateral compartment :**

During the posterolateral compartment examination, lateral meniscus posterior, popliteus tendon, posterolateral synovial and capsular areas, lateral femoral condyle posterior are observed (Başaran, 2009; David *et al.*, 2004; Canale and Beaty, 2008). To insert an arthroscope, anteromedial portal or transpatellar tendon is frequently used as well as anterolateral portal. Arthroscope pass through between anterior cruciate ligament and lateral femoral condyle. If anterior portals are to be used, an oblique arthroscope of 70° provides a much better vision (Başaran, 2009; David *et al.*, 2004; Canale and Beaty, 2008).

Free bodies that cannot be seen when entered through anterior portals are frequently localized in posterolateral compartment. In opening posterolateral portal, the knee should be inflated to the maximum level and have a flexion of 90°. A needle can be used to determine the ideal area for the portal. The portal is localized at the border of biceps femoris tendon anterior and iliotibial band posterior, and approximately 2 cm above the posterolateral joint line. In using postero- lateral portal, oblique scopes of 30° should be used (Başaran, 2009; David *et al.*, 2004; Canale and Beaty, 2008).

#### **Arthroscopy Instruments :**

The imaging system is mainly consists of scopes, light sources, cameras and monitors. Light source is consist of xenon light source and transporting conductive fiber optic cable. Surgical instruments: Probe (hooking), curettes, electrocautery, cutters (punch), catchers (grasper), motorized tools (shaver, cutter, burr) may be considered. Washing system: as the wash solution Ringer's lactate, saline, glycine or 5% mannitol is used (Akdemir, 2008; Bert, 1992) These solutions can be injected into the joint from a high-level. These solutions can be given in the joint by hanging them at a high point for the aid of gravity or by the pump (arthropump) (Akdemir, 2008).

#### **Standard Diagnostic Arthroscopy Portals :**

These are anterolateral, anteromedial, superolateral and superomedial. Anterolateral portal is the portal for scope, and anteromedial portal is the portal for surgical instruments. Superolateral or medial portal is the portal for discharge cannula. However, these portals may be used interchangeably by different surgeons (Akdemir, 2008).

#### **Advantages and Disadvantages of Arthroscopy**

- (a) Low post-operative morbidity rate: People can go back to their work either right away or in 1-2 weeks depending on their workload.
- (b) Smaller incision: 2 or 3 incisions of 5 mm will be enough for arthroscopy.
- (c) Less Inflammatory Response: Due to smaller incision in capsule and synovium, it is less likely to encounter inflammatory response. As a result, patients are less likely to suffer from post-operative pains, rehabilitation and recovery period is relatively shorter.
- (d) High-level of accurate diagnosis: While the rate of accuracy is recorded as 70-90% via clinical examination, this rate rises to 97% via diagnostic arthroscopy.

- (e) Lack of secondary effects: Such secondary effects after arthrotomy as neuroma forming, ugly and painful scars, and potential functional imbalance (for example, in the extensor mechanism of the knee) do not develop after arthroscopy.
- (f) Less hospitalization costs.
- (g) Lower complication rate: Rare complications are recorded in arthroscopy.
- (h) It enables follow-up and assessment after treatment: After certain procedures (synovectomy or partial meniscectomy, etc.), it is possible to have a second look and make an assessment in the upcoming period.
- (i) Certain procedures that are difficult to perform with arthrotomy technique are easier in arthroscopy technique (for example, partial meniscectomy especially in the posterior and access to repairable meniscus tears) (Eskandari, 1997 and Tatari, 1993).

**There are only a few disadvantages of arthroscopy;** yet, these disadvantages are of great importance for arthroscopist. Every arthroscopist may not have the ability to perform arthroscopic surgery as arthroscopy requires using fragile instruments through very small portals. That the instruments are required to be maneuvered within a narrow joint may cause damage to the joint surfaces. Also, the instruments required are high in number and cost. One of the disadvantages is that it requires gaining psychomotor skills to bring two or more objects together in a certain cavity at one sight. It is easier to learn the triangulation technique with an arthroscope of straight (0°) angle. The knowledge of intraarticular anatomy and directing the instrument to a familiar structure improved triangulation skill. As a result of the experience gained in time, surgeon develops a stereoscopic sense and thus, easily bring into the field of vision (Tatari, 1993).

**The disadvantages can shortly be listed as follows:**

1. Instruments are expensive.
2. Joint surfaces may be damaged if the surgeon is inexperienced (Eskandari, 1997; Miller, 1992).

### **Complications of Arthroscopy**

The complications of arthroscopy can be listed as follows (Tatari, 1993):

1. Preventable Complications
2. Potentially Preventable Complications
3. Unpreventable Complications

### **Preventable Complications**

- (a) Neurologic complications
- (b) Hemarthrosis
- (c) Instrument Failure
- (d) Ecchymosis
- (e) Injury recovery complications
- (f) **Potentially Preventable Complications**
  1. Effusion
  2. Adhesion

### **Unpreventable Complications**

1. Infection
2. Cardiovascular complications
3. Reflex sympathetic dystrophy

During arthroscopy, complications are rarely encountered, and these complications are minor (Eskandari, 1997).

- a. Major complications
  1. Infection
  2. Cardiovascular complications (Deep vein thrombosis, pulmonary emboli)
  3. Neurological complications
  4. Hemarthrosis
  5. Effusion

6. Adhesions
7. Instrument failure
8. Reflex sympathetic dystrophy (Eskandari, 1997; Tatari, 1993).

#### b. Minor complications

- a. Injury recovery problems
- b. Ecchymosis (Eskandari, 1997; Tatari, 1993).

Interventions with highest rate of complication are reported as partial internal meniscectomy, partial external meniscectomy, and chondroplasty. While the rate of hemarthrosis is recorded as high during partial internal meniscectomy, the rate of instrument failure is recorded as high in the partial external meniscectomy (Eskandari, 1997).

**Damage in the intraarticular structures :** Corrosion on joint surfaces: It is probably the most frequent complication. Especially when arthroscopist is inexperienced, the joint is tight and tense, or procedure is long and difficult; arthroscope or instruments cause corrosion on joint cartilage. As a result of this corrosion, progressive chondromalacia changes and degenerative arthritis may develop.

**Meniscular and fat pad damage:** When the portal is opened too close to inferior, anterior horns of the meniscus may be damaged by incision or penetration. Also, if the portal is too close to patellar tendon, it may go beyond fat pad, and due to recurrent penetrations, fat pad may swell and cause hemorrhage, hypertrophy, or fibrosis as well as hampering the vision.

**Damage to cruciate ligaments:** Cruciate ligament may be damaged during meniscectomy; and even the undamaged ones may be damaged in making intra-condylar debridement during ligament reconstruction (Eskandari, 1997).

#### Injury on extraarticular structures:

1. Damage to blood vessels: It is the most critical complication of arthroscopy. It may be caused by direct penetration or laceration of vessels, or

sometimes by increase in excessive solution extravagation related compartment pressure.

2. Injury on nerves near joint: Interior branches of saphena nerve and sartorial branches of femoral nerve are the most frequently damaged curaneal nerves.
3. Tibial collateral ligament may be damaged by additional medial portals, and it may also be damaged by strong valgus pressure applied to open medial compartment.
4. Excessive extravagation of irrigation solution: It is a very common complication. According to Noyes and Spievack, the rupture of suprapatellar cavity is not rare, and the solution leaking form here can easily move forward towards femoral triangle around superficial femoral anther, dissecting all the way to that point.
5. Hemarthrosis: It is the most common post-operative complication, and most commonly observed after lateral retinacula release and total lateral meniscectomy.
6. Thrombophlebitis: It is potentially the most dangerous post-operative complication.
7. Infection: It is observed quite rarely (under 0, 2%).
8. Synovial herniation and fistula: Sometimes fat and small particles of synovial tissue may be herniated through portals.
9. Instrument failure: It is a rare complication. Edge of basket (punch) forceps may be broken as they try to bite very thick and big meniscus or other tissues. Disposable blades of cutting instruments may be broken or unlatched (Eskandari, 1997; Miller, 1992; Scott *et al.*, 1993).

#### Implementation

We included 114 patients who underwent knee arthroscopic partial meniscectomy surgery in our study (Figs.- 1, 3, 4). Their average age is 37.6. of the patients we included; 21 patients suffer from

hypertension and 12 suffer from diabetes mellitus. Any additional metabolic disease was not recorded. The number of female and male patients is respectively 47 and 67. 46 patients are smokers. All the patients referred to us with such complaints as chronic knee pain, locking, difficulty in climbing stairs, and knee swelling and stinging. In the pre-operation phase, 87 patients were diagnosed with medial meniscus tears at various areas, and 27 patients were diagnosed with lateral meniscus tears at various areas.

On the completion of necessary pre-operative preparations, patients were positioned for arthroscopy under spinal or general anesthesia. The leg to undergo surgery is bandaged and applied HG pressure of 250 mm with pneumatic tourniquet to stop blood circulation. The patient was prepared in a sterile way. After intraarticular imaging by means of scope and camera through standard anteromedial portal, probe is inserted through anteromedial portal, and all intraarticular tissue was examined. Meniscus with the preoperation diagnosis was examined, and after the tear was revealed, partial meniscectomy was performed. In cases where a tear was diagnosed in pre-operative examination but not detected one leading to the joint surface during arthroscopy, no meniscectomy was performed (Fig.- 2). For fibrillations on meniscectomy surface that cannot be eliminated, resection was performed with arthroscopy device. Intraarticular solution was injected by means of an arthropump. After a thorough irrigation, operation was terminated. In cases with solution extravagation, drainage was performed by means of percutan injections. After portal closure and elastic bandaging, tourniquet was opened. Average surgery duration under tourniquet is 43 minutes.

We detected that diagnosis based on pre-operation physical examination and radiological tests are consistent with the diagnosis during the surgery at the rate of 87%; and it was observed that 16 patients

suffered from liquid extravagation to femoral and posterior tibial area, 22 patients suffered from post-operative hemarthrosis, 15 patients suffered from the serous accumulation of fluid, 11 patients suffered from pain and ecchymosis lasting up to 1 months in the area where tourniquet was performed, 9 patients suffered from tibial collateral ligament damage, and 18 patients suffered from portal infection that can be healed with antibiotic treatment. All these complications were healed with appropriate treatment. 89% of these complaints were treated successfully.

### Discussion

Arthroscopy provides a differential diagnosis for the knee problems as well as ensuring detailed classification of meniscus lesions, and on this basis, the preference of proper treatment for each kind of knee joint injury (Eskandari ,1997; Hamberg *et al.*, 1983; Akdemir, 2008). In arthroscopy; partial meniscectomy and biopsies can be performed, pathological plica can be relaxed, and intraarticular free bodies can be removed without opening the joint (Eskandari, 1997 and Gündüz, 2007). It is more successful in overcoming meniscus-tear related symptoms. In case meniscus tests are positive in physical examination, arthroscopic treatment is an appropriate treatment yet not recommended for those with mechanical axis deviation (Okta, 2010; Reddy and Gambardella, 2001; Baumgaertner *et al.*, 1990; Ogilvie-Harris and Fitsialos,1991).

114 patients in our study were only diagnosed with meniscus tear without suffering from mechanical axis deviation (Fig.-1- 4). We could not detect any relation between meniscus tears and joint in the patients with meniscus tear diagnosis based on pre-operative examination and radiologic tests. Yet, we observed that pre-operation diagnoses based on physical and radiological examination matched 87% of those made during the surgery. It is significant that complications the patients suffered from (liquid extravagation,



**Fig. – 1. : Patient who underwent arthroscopic partial medial meniscectomy**



**Fig. – 2: Patient whom we diagnosed pre-operative meniscus tear but did not diagnose pre-operative meniscus tear leading to joint surface.**



**Fig. – 3. Patient who underwent arthroscopic partial medial meniscectomy**

hemarthrosis, serous intraarticular accumulation of fluid, and tourniquet area pains) were treated without causing any permanent complications. We also regard it important in liquid extravagation that arthropump device worked constantly to stabilize intraarticular pressure. As we used arthrocare device in surgeries, there may have occurred intraarticular effusion. We also found that the stress we applied in cases where we had difficulty in observing posterior of medial compartment caused tibial collateral to release. We observed hemarthrosis occurrence in some medial partial meniscectomy cases (Eskandari, 1997).

Arthroscopic surgeries are most commonly applied in meniscus pathologies. In this study, we recorded a 89% success with arthroscopic surgery we applied for meniscus problems in 2 week time.

The fact that this study included partial meniscectomy operations excluding cases only requiring meniscus repair caused it not to cover all arthroscopic meniscus treatments. The disadvantages of this study are; that average age of the patients was young, the



**Fig. - 4. Patient who underwent arthroscopic partial medial meniscectomy**

study did not include patients of older ages, and among the factors affecting recovery potential, only patients with a smoking problem were included.

### Conclusion

Arthroscopy provides a differential diagnosis for the knee problems. It facilitates a detailed classification of knee joint problems and the preference

of the appropriate treatment method. Arthroscopy should only be performed after complete history, physical examination, and standard non-invasive diagnostic methods. The absolute contraindication of the arthroscopy is the presence of joint sepsis in the local skin infection or the contamination of surgical field away from an infection focus.

In this study, we detected that diagnosis based on pre-operation physical examination and radiological tests are consistent with the diagnosis during the surgery at the rate of 87%; and it was observed that 16 patients suffered from liquid extravagation to the femoral and posterior tibial area, 22 patients suffered from post-operative hemarthrosis, 15 patients suffered from the serous accumulation of fluid, 11 patients suffered from pain and ecchymosis lasting up to 1 months in the area where tourniquet was performed, 9 patients suffered from tibial collateral ligament damage, and 18 patients suffered from portal infection that can be healed with antibiotic treatment. All these complications were healed with appropriate treatment. 89% of these complaints were treated successfully.

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