Journal of Emergency Medicine and Care
Volume 6 | Issue 1
ISSN: 2639-9253

Case Report Open Access

Medial Meniscus Dislocation: One Case Report and Literature Review

Aldilli M [*1], **Fawzi H**[2]

Department of Orthopaedic Surgery, Al Faseel, Fujairah, United Arab Emirates

[*]**Corresponding author:** Aldilli M, Department of Orthopaedic Surgery, Al Sharq Hospital PO Box 8505, Al Faseel, Fujairah, United Arab Emirates, Tel: +33675384511, E-mail: meghwar.aldilli@orange.fr

Citation: Aldilli M, Fawzi H (2023) Medial Meniscus Dislocation : One Case Report and Literature Review. J Emerg Med Care 6(1) 101

Received Date: February 02, 2023 **Accepted Date:** February 15, 2023 **Published Date:** February 19, 2023

Abstract

We present rare case of medial meniscus dislocation, in a 25 years old female patient who was admitted in emergency department. With painful locked left knee. Arthroscopy was done next day showing isolated dislocation of medial meniscus with the absence of any medial meniscus tear. Only reduction of the medial meniscus was done. Postoprative MRI confirmed the diagnosis and showed no tears in the medial meniscus. Physiotherapy and clinical follow up were done with good results and no recurrence for 4 months postoperative.

Keywords: Dislocation, Medial Meniscus, Painful Locked Knee, Coronary Ligament, Hyper Laxity of Menisco, Synovial Junction, ALMPHH, (Assimilated Lateral Meniscal Posterior Horn Hyper laxity).

Introduction

This is a rare case of medial meniscus dislocation. It is not the first report, but one of a few. In this case we are presenting, Female patient of 25 years old, secretary of carrier Practice some irregular mild sportive activities, tennis, swimming, has symptomatic single attack of locking of her left knee while she was coming out of the bed morning There was no history of previous trauma.

In this study only one case was involving the medial meniscus and the other 2 were involving the lateral meniscus. Stabilization was performed by placing sutures along the outer border of the meniscus and attaching it to the capsule.

Another literature was published by about dislocating anterior horn of the medial meniscus [1]. There were 11 men and 2 women. Nine knees had a history of trauma. Only 2 patients had isolated dislocating anterior horn of the medial meniscus. Only the Associated lesions were treated and dislocating anterior horns of the medial menisci were left alone. Literature confirmed that dislocating anterior horn of the medial meniscus is a normal anatomic variant with little or no clinical significance. It is an incidental finding and should be left alone.

In our case we are presented there was no meniscus tear or any ligamentous injury between the outer rim of the whole medial meniscus and the knee capsule but hyper laxed meniscocapsular junction.

Case Report

A 25 years old female patient was admitted in emergency department with painful locked left knee .the patient presented with severe medial pain and locking of left knee started while she was coming out of the bed morning without any kind of trauma.

Medical examination was very difficult with that severe pain but it showed locked knee in 60 degrees flexion, the ROM was 0°-60° painful, muscular strength were normal, tenderness over the medial part of joint line and positive Mc Murray test.

In front of (locked painful knee) and after medical examination.

X-ray of the knee, MRI, and arthroscopic exploration were our method of diagnosis to eliminate medial meniscus tear.

Plain x-rays, MRI were needed to exclude other bony causes of locking such as loose bodies from osteochondral fractures or degenerations. We failed to do that because of severe pain with radiological positioning.

MRI could not be done due to locked knee in flexion to eliminate horizontal, vertical, radial, or bucket-handle tear.

Arthroscopy was our procedure of choice in the treatment of locked knee, to explore the compartments of the knee, searching of either medial or lateral meniscal tear, osteochondral or chondral fractures, plica lesions …ETC

Medial meniscus bucket handle tear lesion was put as a provisional diagnosis. Arthroscopy performed under general anesthesia and antibiotic prophylaxis. Examination under general anesthesia was done and reduction click was heard during extension of the knee. Standard approach was done by anterolateral and anteromedial ports. Exploration of all knee compartments including femuropatellar, medial tibiofemoral, lateral tibiofemoral and intercondylar compartments and it showed absence of loose bodies (chondral fracture, osteochondral fracture or osteochondritis dissicans), absence of tears in medial meniscus or lateral meniscus and presence of an area of ligamentous insufficiency between the outer rim of the medial meniscus and the knee capsule (Figure 1, 2 and 3). Nevertheless, it showed redundant capsulomeniscal junction with instable middle segment and posterior horn medial meniscus with insufficient anchoring of this part of the meniscus to the tibial plateau (insufficiency of coronary ligament (Figure 2 and 3).

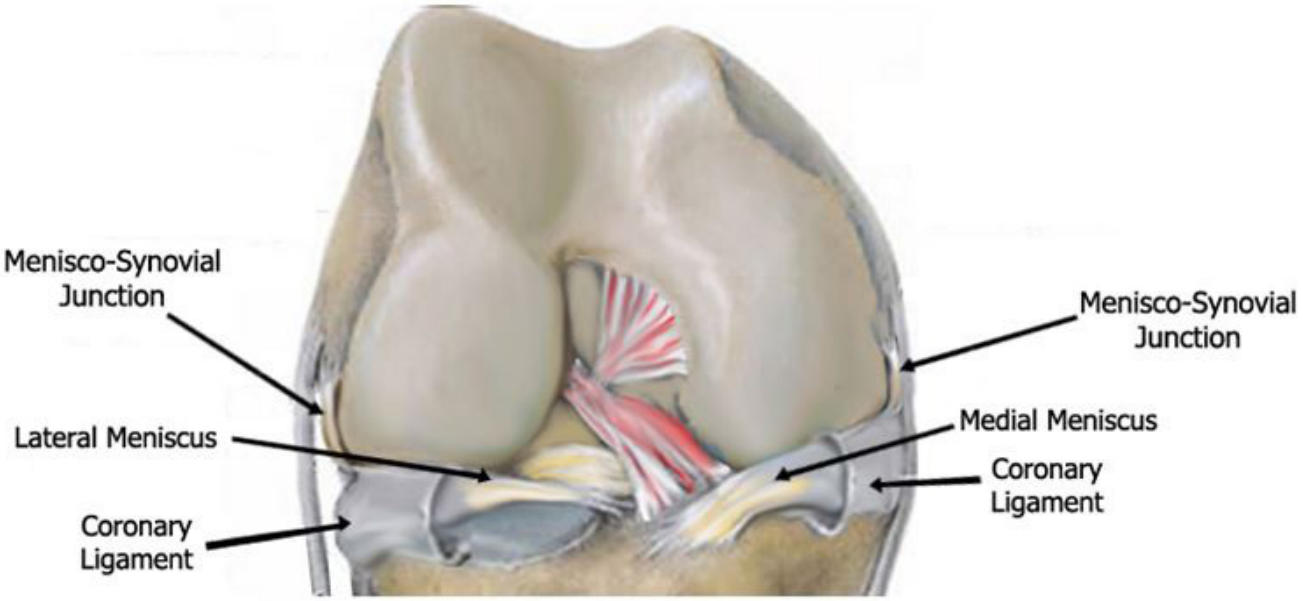

Figure 1: picture showing synovial & coronary ligaments attachements of meniscus (modified anatomical drawing picture) auther could not be contacted

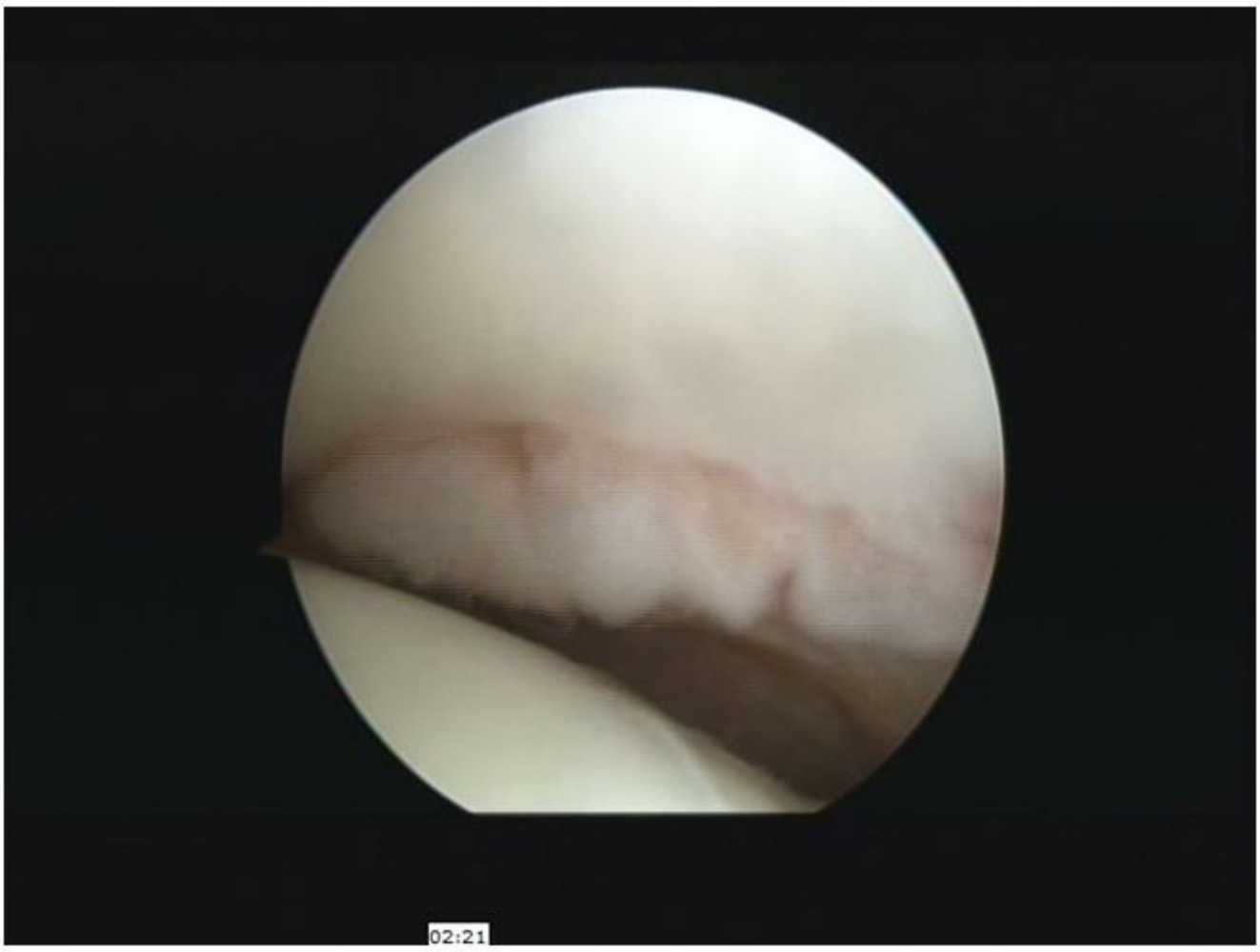

Figure 2: Absence of coronary ligament in medial compartment, meniscus left up

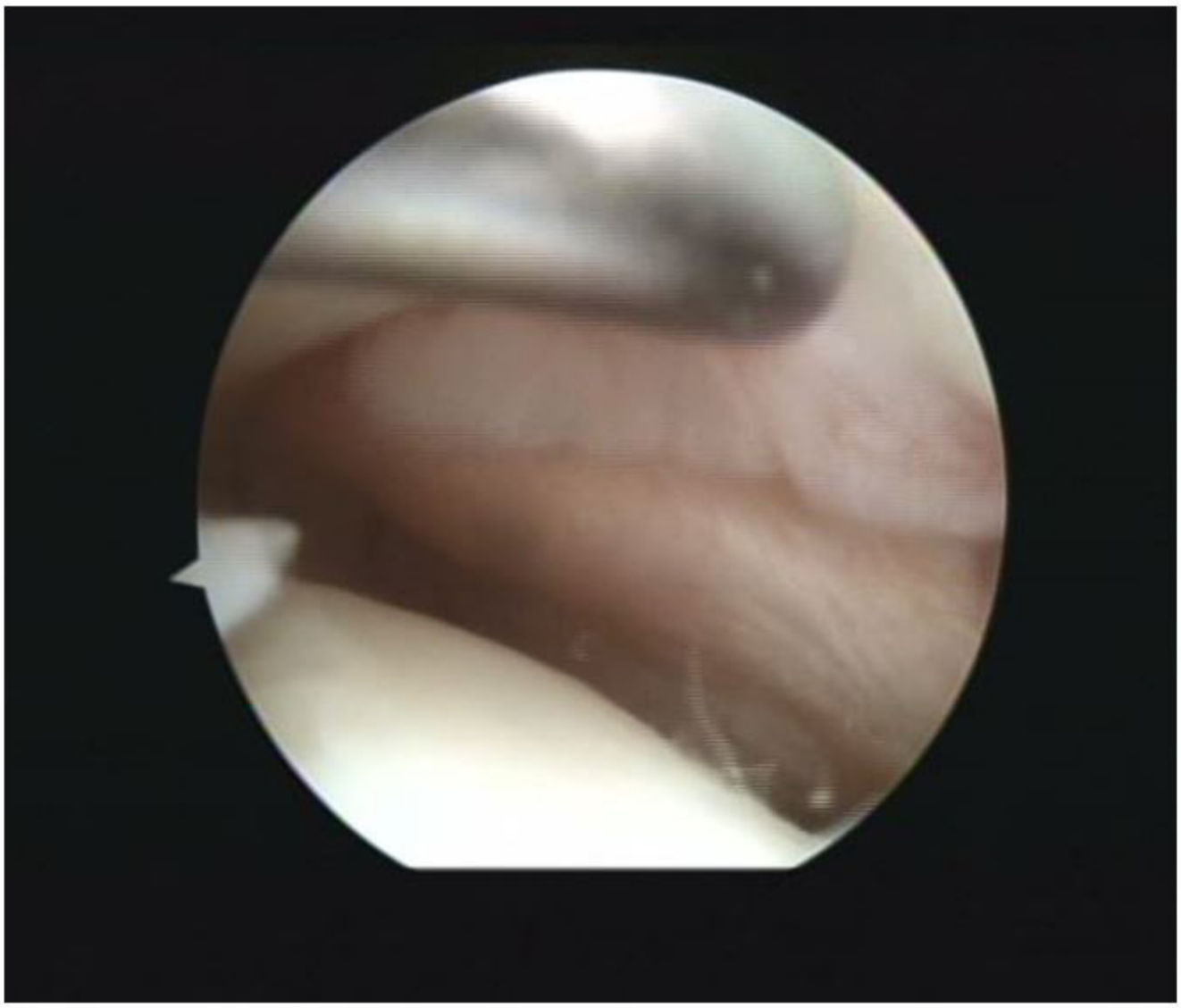

Figure 3: Hyper laxity of menisco-capsular, meniscus left up

The dislocation and reduction was checked many times during arthroscopic exploration of medial segment of the meniscus was easily dislocated but without spontaneous reduction (Figure 6 and 7).

Dislocated part of meniscus was reduced by simple pushing out of this segment by the arthroscopic probe.

Exploration also showed redundant meniscosynovial junction. This abnormal anatomical variant of hyper laxity of middle segment and posterior horn of medial meniscus (Figure 2 and 3) is exactly similar to with anatomical and arthroscopic hyper laxity of lateral meniscus with more mobility but without spontaneous reducibility. We identified this condition as ALMPHH, Assimilated Lateral Meniscal Posterior Horn Hyper laxity.

Results

Patient went back home next day with hinged knee brace which continued for one month. Diagnosis was discussed with the patient that this is a very rare case of isolated medial meniscus dislocation and there is still a chance of second intervention if locking recurs. The second intervention would be arthroscopic tightening of the meniscocapsular attachment. MRI was done 5 days later to exclude any doubt of any missed tear. As we grow suspicion about the diagnosis because of the rarity of the case. MRI revealed intraarticular fluid subchondral edema of lateral femoral condyle with no meniscal tear (Figure 4 and 5).

Figure 4: post-operative MRI

Figure 5: Post- Operative MRI

First follow up visit was done one month later .Clinical examination revealed normal flexion and extension without locking although apprehension test was positive. Removal of the brace and start of physiotherapy were advised. Physiotherapy by soft mobilization and antalgic, reaching of normal range of movement & muscular forcing of Quadricps & Hamerstring in closed chains measures have continued for one month, proprioceptive regaining, then opened chains muscular forcing in.

Second follow up visit was two months postoperatively. Clinical examination showed no pain, locking or apprehension. The patient was advised to avoid sudden forceful movement of the knee specially torsion positions, avoid sports, driving cars for 3 months then opened chains muscular forcing started in 3ed month .

Sports have to restart within 3 months in absence of any pain of sensation of locking.

Phone follow up carried on in the next 3 to 6 months revealing satisfactory results with absence of pain and locking and normal mobility of the knee, with mild sportive activity like running , absence of any sports of torsion with contact or without like handball or basketball, the patient performed swimming without breast technique movement only crawl swimming was done.

Discussion

The first case was reported on 1984 by [4] by article titled Dislocation of anterior horn of the medial meniscus.Then on 2010 by [3]. This was the only case reported has the same circumstances. This case was symptomatic medial dislocation of the medial meniscus in a patient who had no previous history of trauma. Operative stabilization by reconstruction of the meniscotibial ligaments cured the symptoms. Different literature by [2] involved three patients exhibited the ability to reproduce the locking voluntarily. This study also showed that the defect in meniscal dislocation appears to lie at the meniscocapsular junction. This literature suggested todo MRI in the locked position. (Figure 1)

In 2010 [3] reported a case with symptomatic medial dislocation of the medial meniscus in a patient who had no previous history of trauma and who had an otherwise normal knee. Same author mentioned that studies have indicated that certain individuals without a firm meniscal bony insertion may be predisposed to meniscal dislocation. In this patient, the meniscal instability interfered with daily activities. Operative stabilization by reconstruction of the meniscotibial ligaments cured the symptoms.

Different literature by [2] involved three cases identified by a Consultant Orthopedic Surgeon between December 1997 and July 2004. These patients had symptoms of intermittent locking of the knee and a clinical history suggestive of meniscal dislocation. These three patients exhibited the ability to reproduce the locking voluntarily. This was not the case in our patient we presented. This study also showed that the defect in meniscal dislocation appears to lie at the meniscocapsular junction, where deficiency allows hypermobility of the meniscus, which is not necessarily associated with a meniscal tear. Arthroscopy is often performed as a first-line investigation but may not demonstrate the meniscocapsular defect. This literature also showed that magnetic resonance (MR) performed using a standard protocol also has a low sensitivity for detecting meniscocapsular tears and meniscal dislocation is not demonstrated with the knee in the straight leg position. He suggested to do MRI again in the locked position. In this study only one case was involving the medial meniscus and the other 2 were involving the lateral meniscus.

In the case of the medial meniscus second time arthroscopy showed an area of ligamentous insufficiency between the outer rim of the posterior horn of the medial meniscus and the knee capsule, which was thought to be traumatic in origin. Stabilization was performed by placing sutures along the outer border of the meniscus and attaching it to the capsule.

Another literature was published by about dislocating anterior horn of the medial meniscus [1]. Dislocating anterior horn of the medial meniscus was found in 15 knees of 13 patients during arthroscopic examinations done between 1992 and 1995. All of them were available for follow-up evaluation (4 by telephone). There were 11 men and 2 women (average age, 28 years; range, 17 to 49 years). Nine knees had a history of trauma. Only 1 knee had no trauma in two bilateral cases. Duration of symptoms was an average of 3.3 years (range, 3 months to 10 years). The knees were stable clinically. Arthroscopy revealed associated lesions in 13 knees; hypertrophic medial plica, meniscal, chondral and anterior cruciate ligament (ACL) lesions predominated. Three knees had unusually hypertrophic ligamentum mucosum. Eleven of 13 knees had more than one associated lesions. Only 2 knees (2 patients) had isolated dislocating anterior horn of the medial meniscus. Only the associated lesions were treated (except for ACL lesions) and dislocating anterior horns of the medial menisci were left alone. Follow-up averaged 21 months (7 to 40 months). At follow-up, 11 knees were graded as excellent, 3 as good, and 1 as fair according to the Lysholm scale. Eight knees had minor symptoms and 6 were asymptomatic; no improvement was noted in 1 knee. Overall, 12 patients (14 knees) were satisfied with their treatment. Dislocating anterior horn of the medial meniscus is a normal anatomic variant with little or no clinical significance. When seen during arthroscopy, a significant lesion should be looked for. It is an incidental finding and should be left alone.

In our case we are presenting there was no meniscus tear but hyperlaxed meniscocapsular junction without any attachment between the medial meniscus and the tibia. There was abnormal mobility and laxity of middle segment and posterior horn of medial meniscus (Figure 6) exactly similar to with anatomical and arthroscopic hyper laxity of lateral meniscus with hypermobility but without spontaneous reducibility.

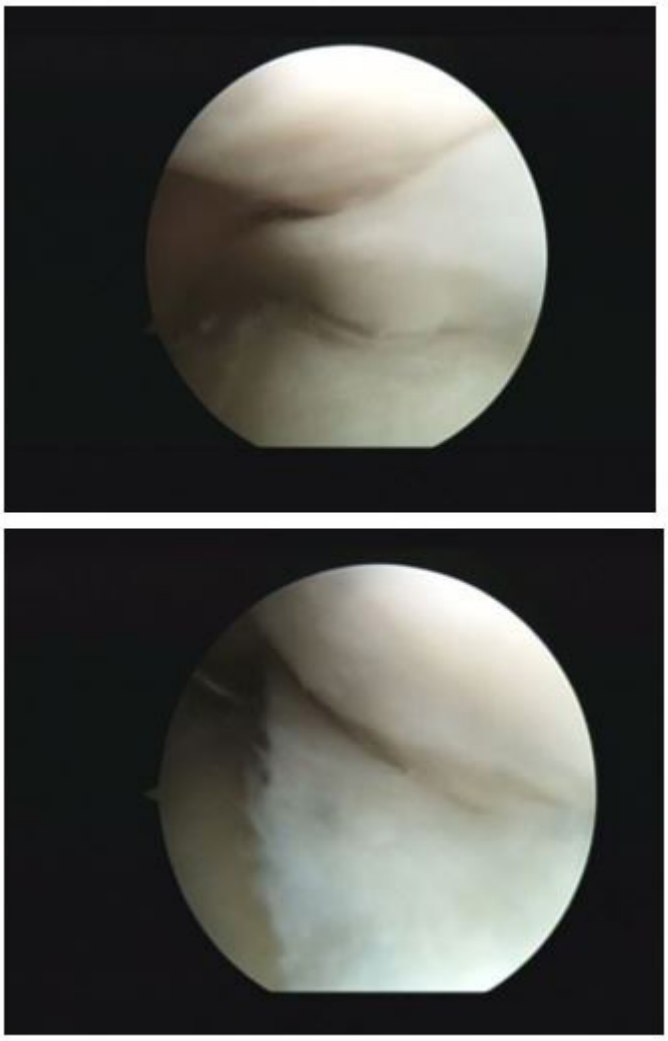

Figure 6: Dislocated Middle segment and posterior horn of Medial meniscus

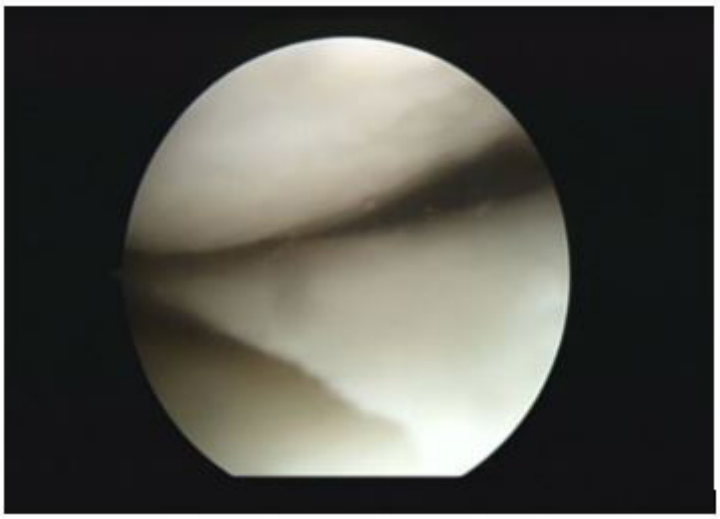

Figure 7: Medial meniscus in its place

We identified this condition as ALMPHH,(Assimilated Lateral Meniscal Posterior Horn Hyper laxity).

Conclusion

In this case two observations were noticed; redundant meniscocapsular junction and lack of any attachment between the middle segment and posterior horn of the medial meniscus with the tibia, absent coronary ligament. This could be a pathognomonic sign for this condition.

We suggest that ALMPHH, (Assimilated Lateral Meniscal Posterior Horn Hyper laxity) can be a cause of unexplained locked knee. Though we recommend to put checking of the integrity of coronary ligament and redundancy of the meniscocapsular junction as a routine step in knee arthroscopy.

References

1. Pinar H, Akseki D, Bozkurt M, Karaoğlan O (1998) Dislocating anterior horn of the medial meniscus. Arthroscopy 14(3): 246-9.

2. NJ Lyle, MA Sampson, DS Barrett (2009) MRI of intermittent meniscal dislocation in the knee. The British Journal of Radiology 374-9.

3. Chan SK, Robb CA, Singh T, Chugh S (2010) Medial dislocation of the medial meniscus. J Bone Joint Surg Br 92(1): 155-7.

4. WG Clancy et al Am Sports Med 1984 Jan-Feb