

PHẪU THUẬT NỘI SOI ĐIỀU TRỊ THOÁI HÓA KHỚP VÀ CÁC BỆNH LÝ KHÁC

BÙI HỒNG THIÊN KHANH

PHẪU THUẬT NỘI SOI KHỚP

Ưu điểm : MIS phẫu thuật xâm nhập tối thiểu

Đường vào nhỏ tối thiểu < 1cm

- Thẩm mỹ
- Ít biến chứng nhiễm trùng, phục hồi vận động sớm
- Chuẩn đoán và điều trị chính xác và hiệu quả
- Lưu trữ hình ảnh có giá trị trong chẩn đoán và nghiên cứu

Nhưng đòi hỏi dụng cụ máy móc hiện đại và huấn luyện nội soi

BS.BÙI HỒNG THIÊN KHANH

Các chỉ định dùng PT nội soi khớp

1. Nội soi khớp dùng để chẩn đoán
2. Nội soi trong điều trị

Sự phân định này chỉ là tương đối

Nội soi khớp dùng để chẩn đoán

Đây là phương pháp thăm khám đặc biệt có thể quan sát trực tiếp những thành phần trong khớp nhờ vào ống nội soi được đưa vào khớp thông qua màn hình với màu sắc thực cho phép PTV :

- nhìn, sờ thấy, đánh giá chính xác thương tổn,
- kiểm chứng các phương tiện chẩn đoán hình ảnh khác
- lấy bệnh phẩm (sinh thiết chẩn đoán)

Các khớp có thể nội soi : cổ tay, khuỷu, vai, háng gối, cổ chân, dưới sên.

Nội soi khớp dùng để điều trị

Sự cải tiến và sáng tạo nhiều dụng cụ nội soi giúp điều trị tốt các phẫu thuật tái tạo dây chằng khớp gối, khâu cơ chóp xoay khớp vai.

Ở VN, Nội soi khớp gối và khớp vai đang phát triển mạnh

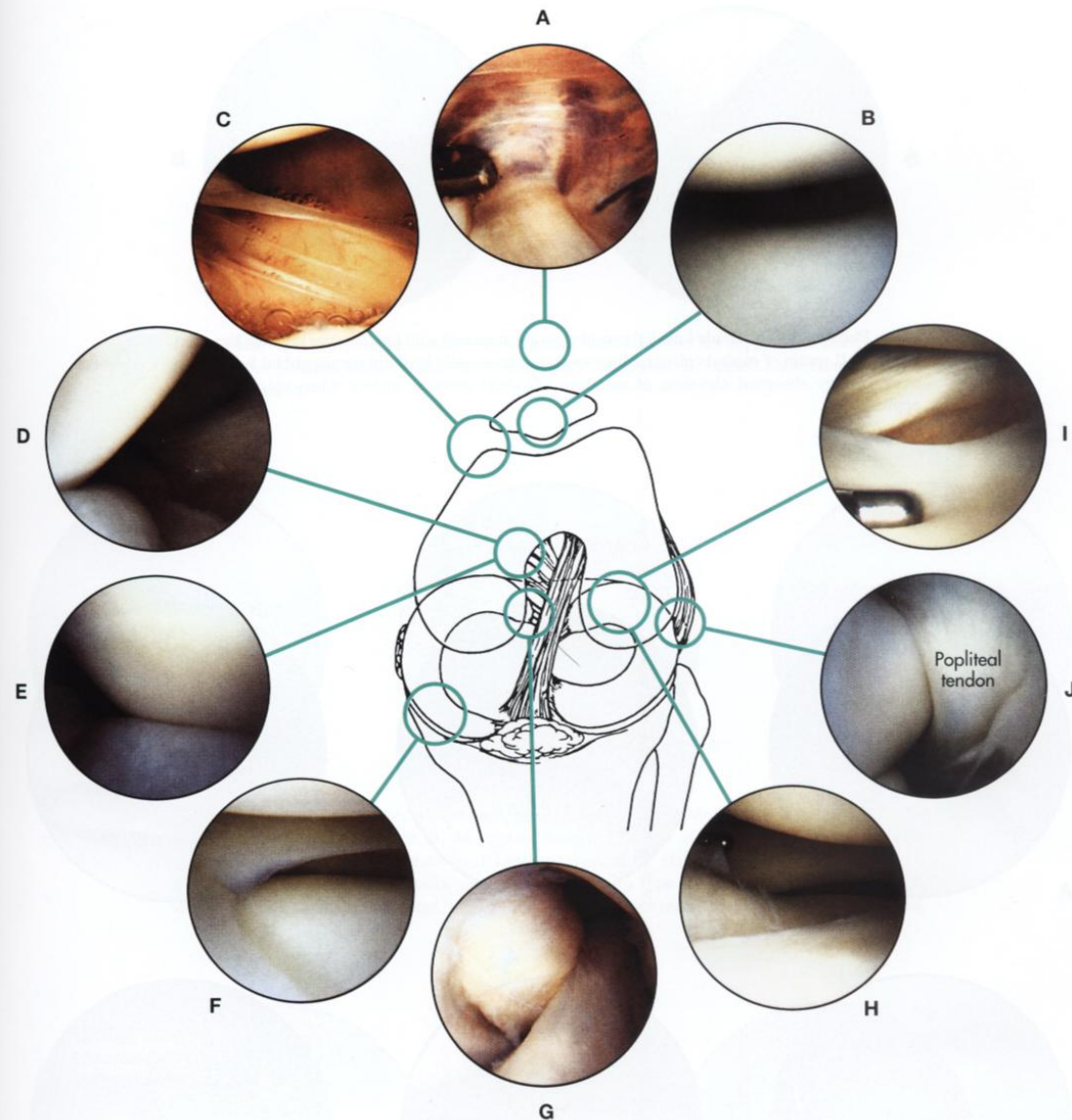
Nội soi khớp dùng trong điều trị

Đây là phương pháp thăm khám đặc biệt có thể quan sát trực tiếp những thành phần trong khớp (khớp gối : dây chằng chéo trước, dây chằng chéo sau, sụn chêm, sụn khớp, bao khớp...) Nhờ vào ống nội soi được đưa vào khớp gối, Bác sĩ có thể phát hiện được các tổn thương bất thường nếu có

Nội soi khớp gối có thể hỗ trợ :

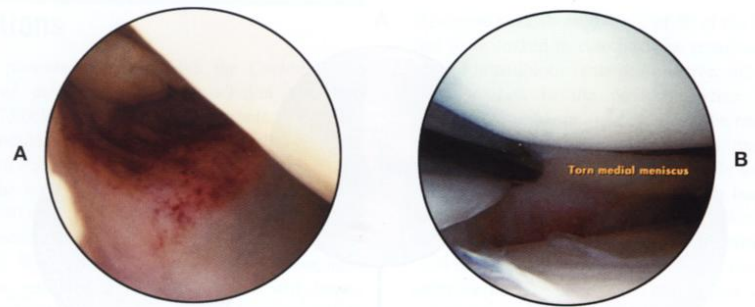
- Gãy xương đơn giản : lồi cầu, bánh chè, mâm chày
- Đứt dây chằng (DC) : tái tạo DC chéo trước (DCCT), DC chéo sau (DCCS)
- Rách sụn chêm : cắt sụn chêm, khâu sụn chêm, ghép sụn chêm
- Thoái hoá khớp gđ sớm : cắt lọc tạm thời , ghép sụn
- Viêm hoạt mạc : cắt lọc
- Hạn chế vận động gối sau chấn thương, phẫu thuật ,viêm thấp khớp : giải phóng khớp.

Nội soi khớp gối

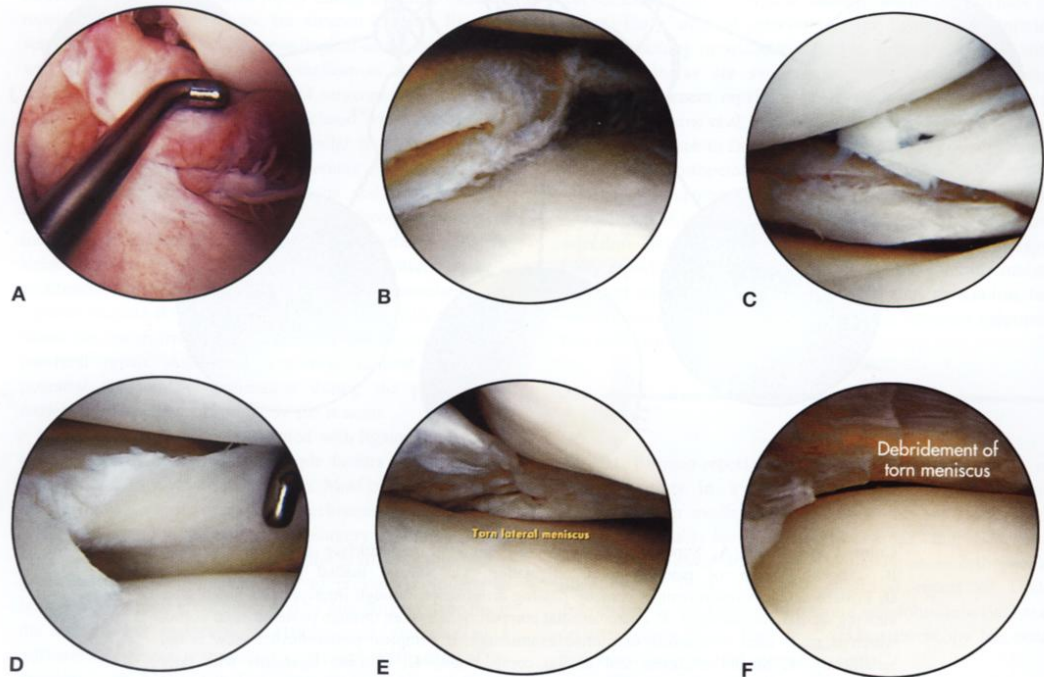


Color Plate 48-1 A, Suprapatellar pouch with view of undersurface of articularis genu. B, Tangential view of patellofemoral articulation. C, Normal medial parapatellar plica. D, Posteromedial compartment is seen by passing arthroscope through intercondylar notch after viewing medial compartment. E, Posteromedial compartment as seen through posteromedial portal, which is made after completion of routine examination if complete posteromedial view is not satisfactory. F, Medial meniscus and medial compartment. G, Cruciate ligaments with fatty synovium covering posterior cruciate ligament. H, View of lateral meniscus and lateral compartment. I, View of posterior horn of lateral meniscus and popliteal tendon through hiatus. J, Posterolateral view of knee with arthroscope in anterolateral portal showing popliteal tendon insertion into femur in popliteal hiatus.

Tổn thương sụn chêm

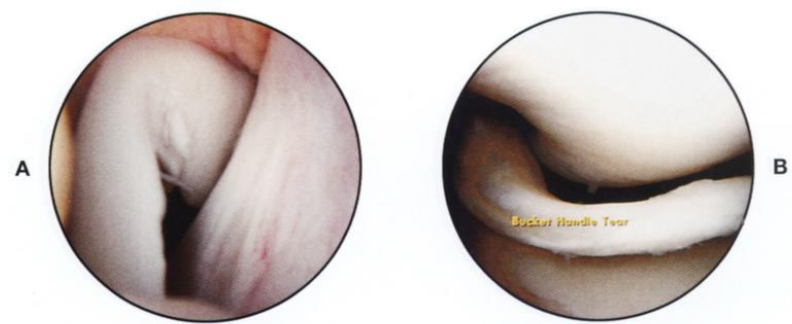


Color Plate 48-2 A, Grade I medial capsular sprain in patient with torn anterior cruciate ligament. B, Grade II sprain of medial collateral ligament, with some mild laxity of meniscotibial ligament as evidenced by abnormal elevation of meniscus off tibial articular surface when valgus stress is applied.

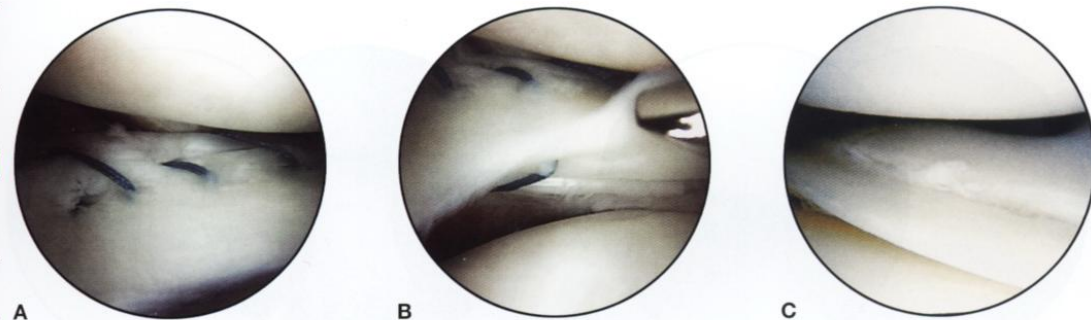


Color Plate 48-3 A, Complete tear of anterior cruciate ligament. B, Horizontal tear of degenerative lateral meniscus. C, Oblique tear of posterior horn of lateral meniscus. D, Incomplete radial tear of lateral meniscus. E, Degenerative tear of lateral meniscus. F, Resection of tear of lateral meniscus. Remaining tissue shows fatty degeneration.

Tổn thương sụn chêm : rách kiểu Bucket handle, locked bucket handle,...



Color Plate 48-4 A, Bucket handle tear of medial meniscus that has flipped into intercondylar notch; in this position, meniscus may cause intermittent symptoms. B, Locked bucket handle tear of medial meniscus.



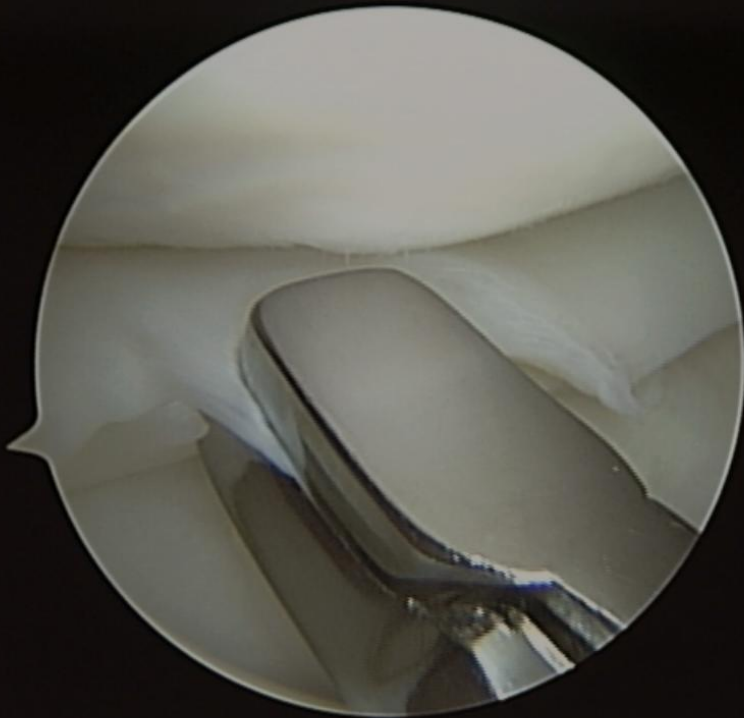
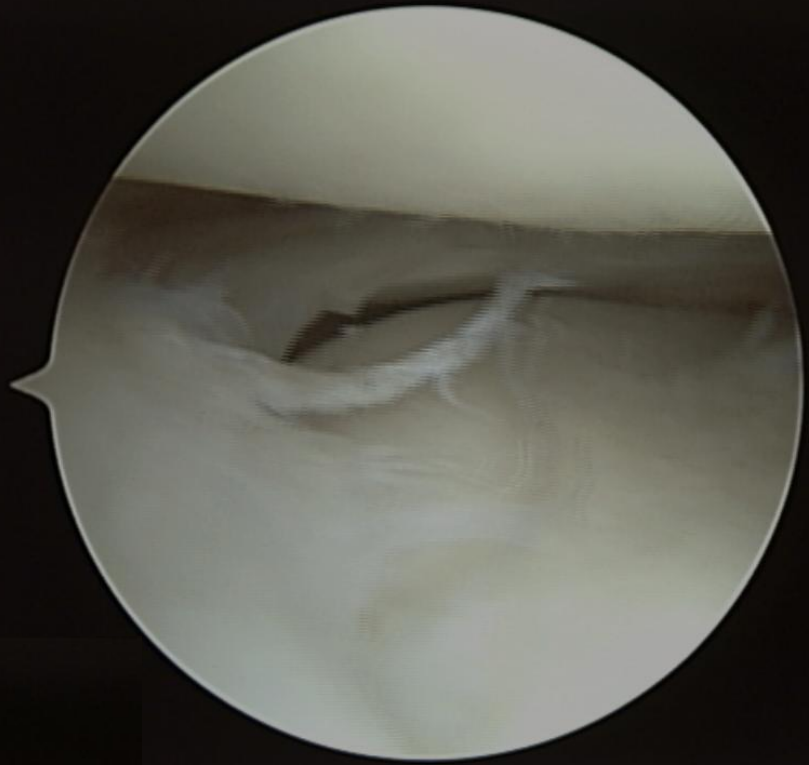
Color Plate 48-5 A, Unstable, 2-cm, peripheral tear of meniscus. Meniscus is being repaired with stacked vertical mattress suture. B, Incomplete undersurface tear of medial meniscus; this can be treated with abrasion to stimulate local healing followed by placement of one or two sutures. C, Complete 2-cm tear in avascular zone of meniscus; this type of tear generally is treated with excision, but if repair is attempted, use of fibrin clot and other local stimuli should be considered.



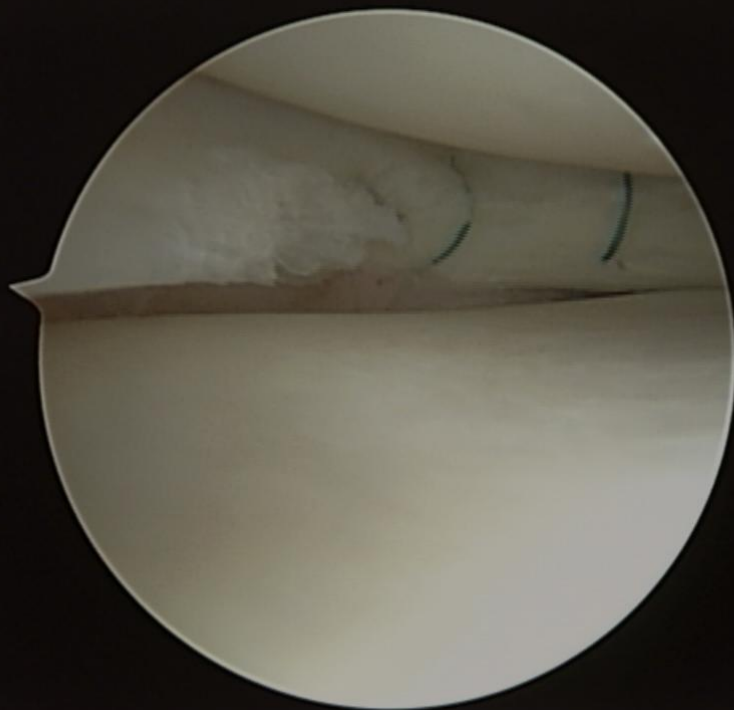
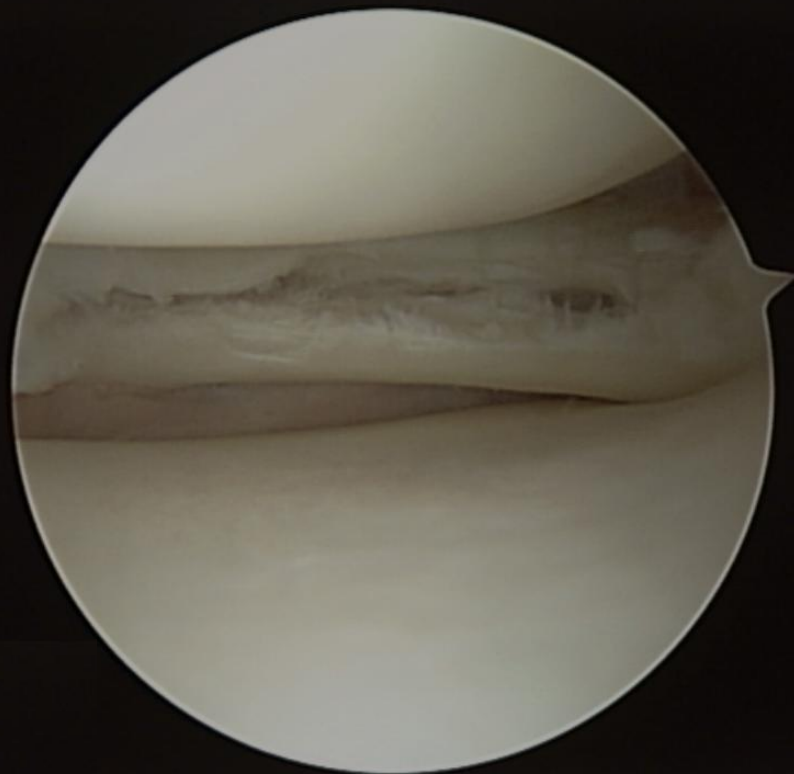
Color Plate 48-6 Meniscal repair with oblique mattress sutures, which are "stacked" to obtain most secure fixation in meniscal tissue.

Color Plate 48-7 Loose body in posteromedial compartment. Complete knee arthroscopy should always include examination of posterior medial compartment.

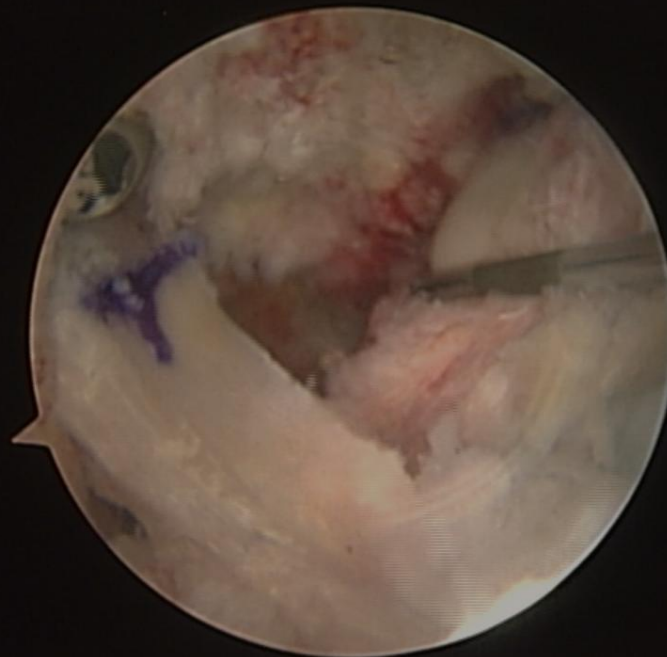
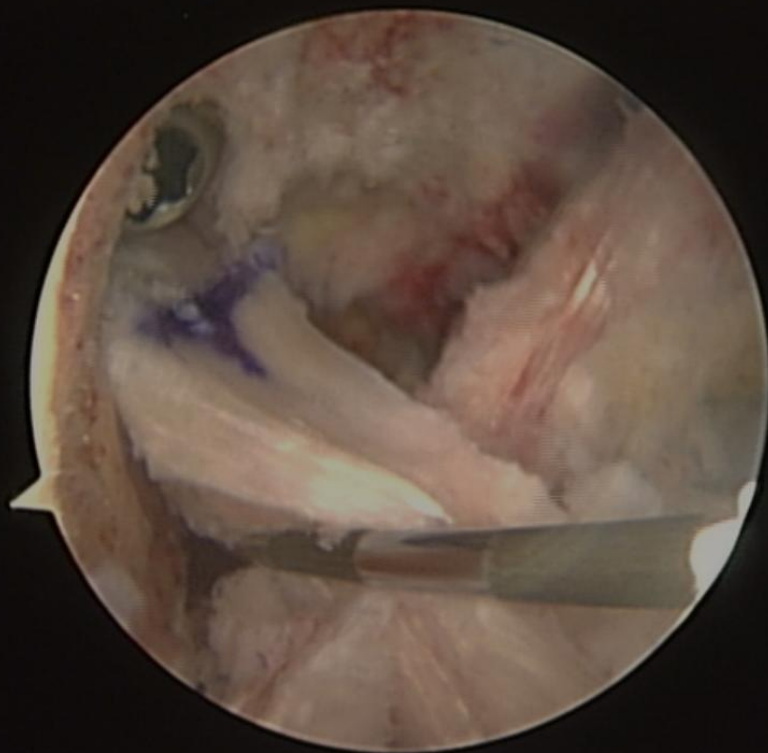
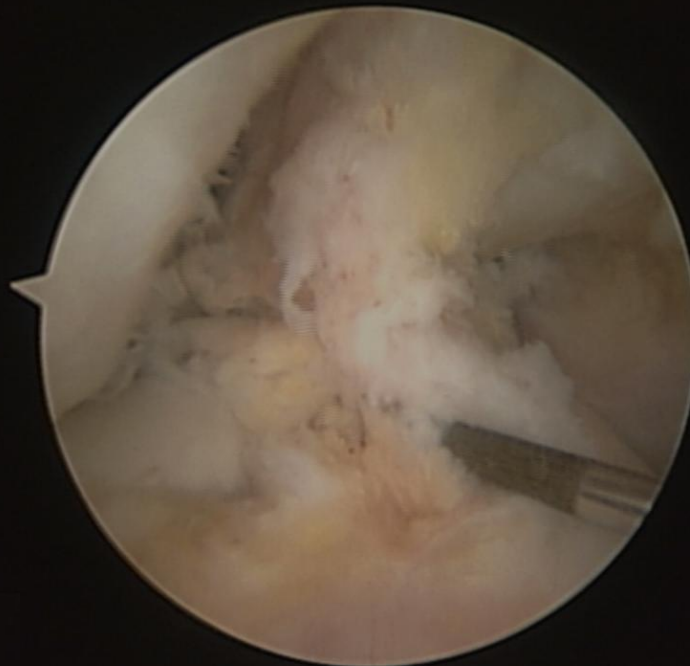
Rách sụn chêm :
cắt sụn chêm



Rách sụn chêm :
khâu sụn chêm



Đứt DCCT & DCCS :
Tái tạo DCCT & DCCS
bằng gân gót đồng loại



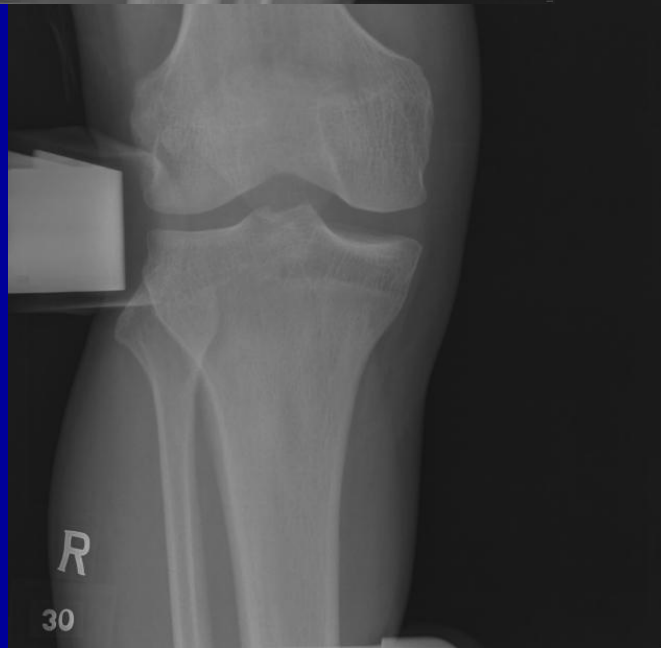
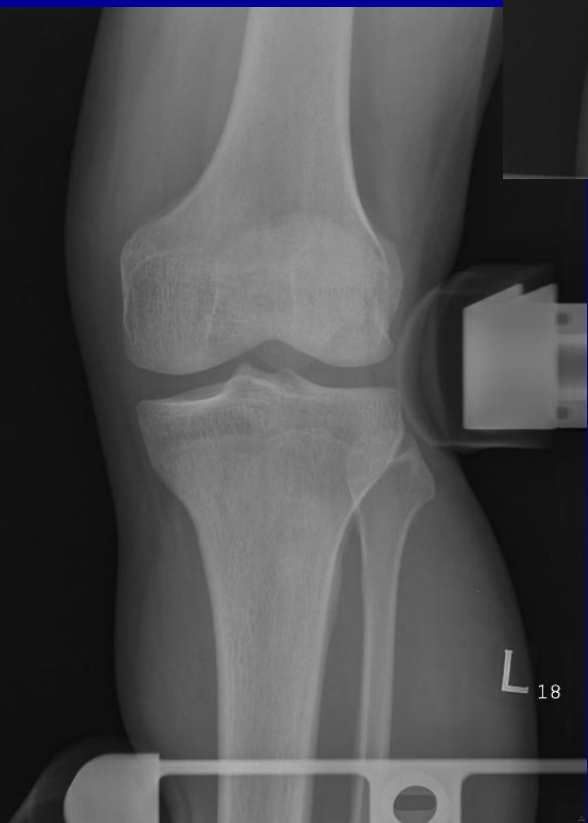
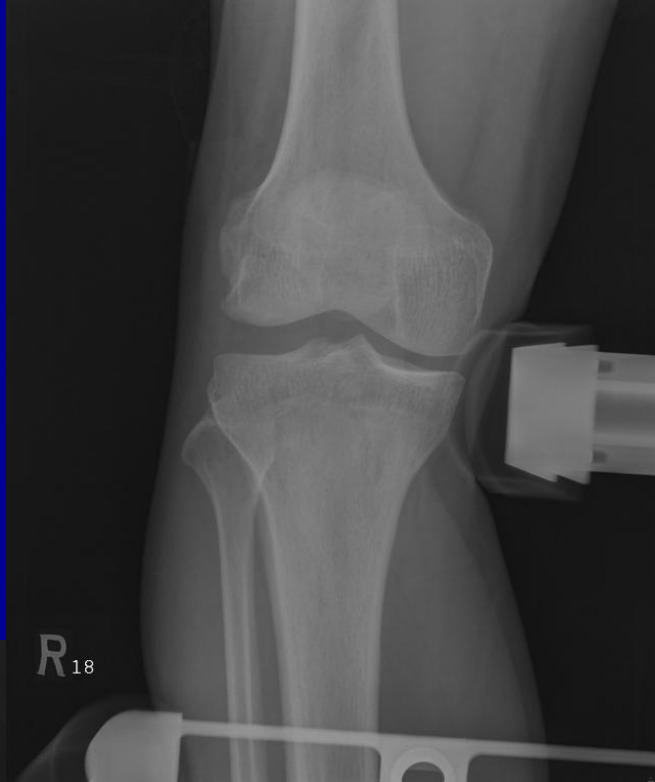
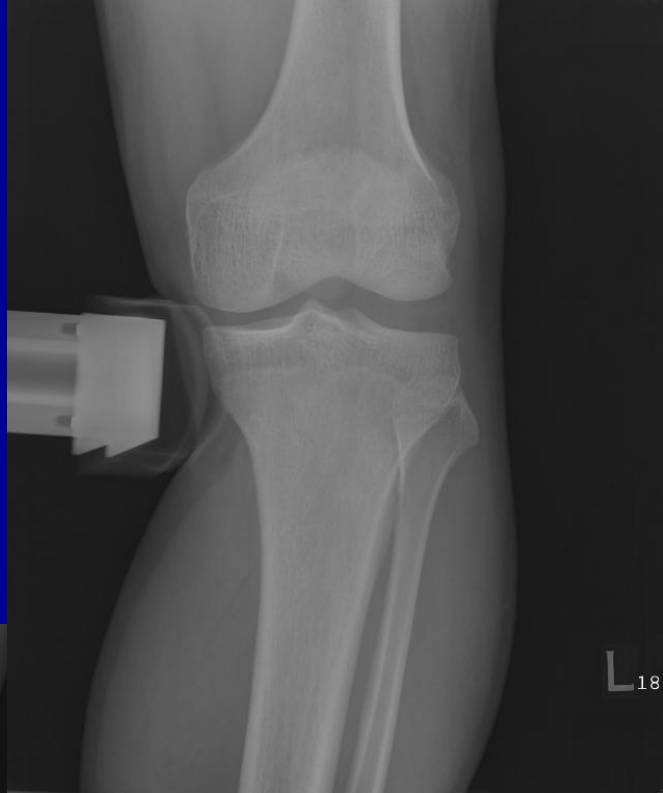
XQ sau mổ tái tạo 2 DC chéo cùng lúc





máy Arthometry
KT 2000





Lấy dị vật

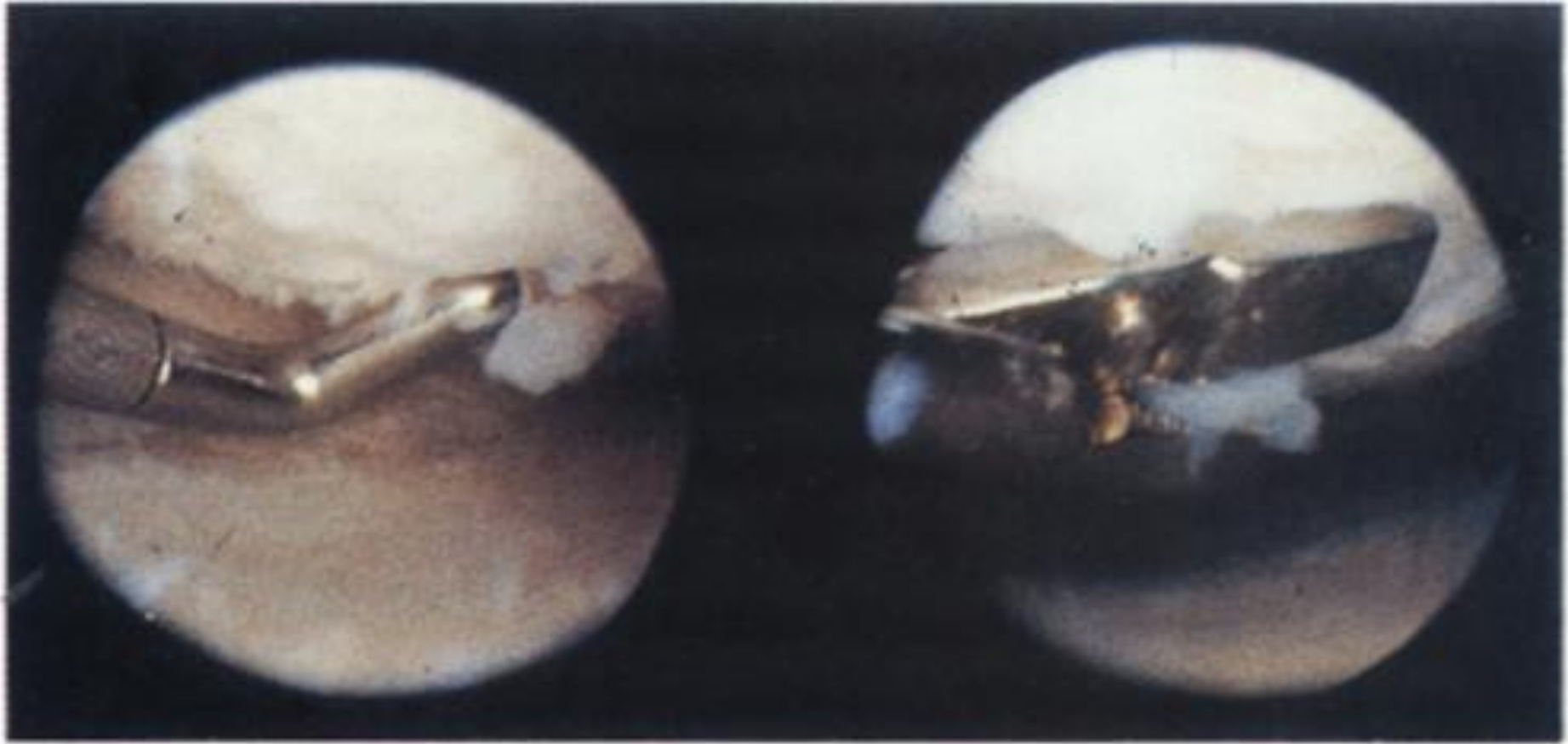
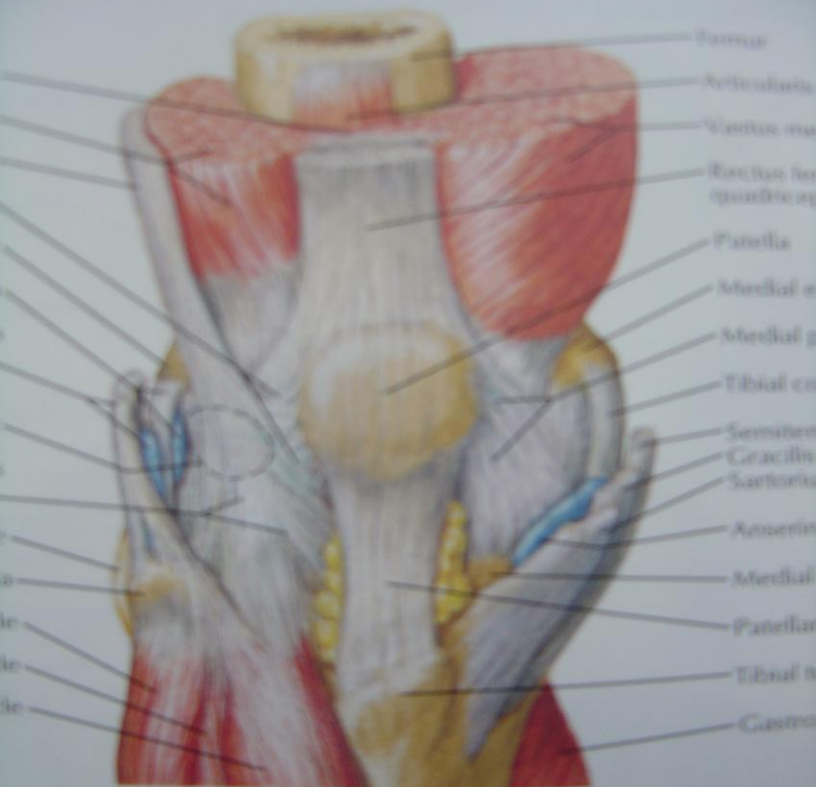
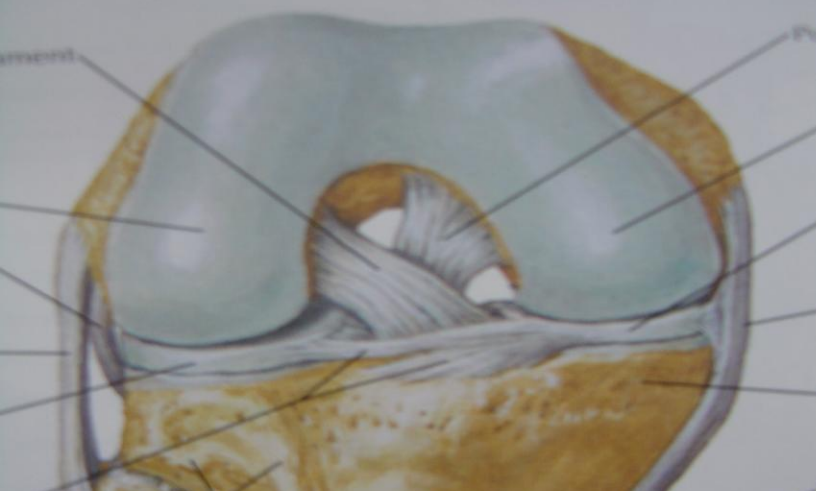


FIGURE 20.1 Loose or scaling fragments of articular cartilage, demonstrated by probing, can be removed with manual or powered instruments.

Right knee in flexion: anterior view

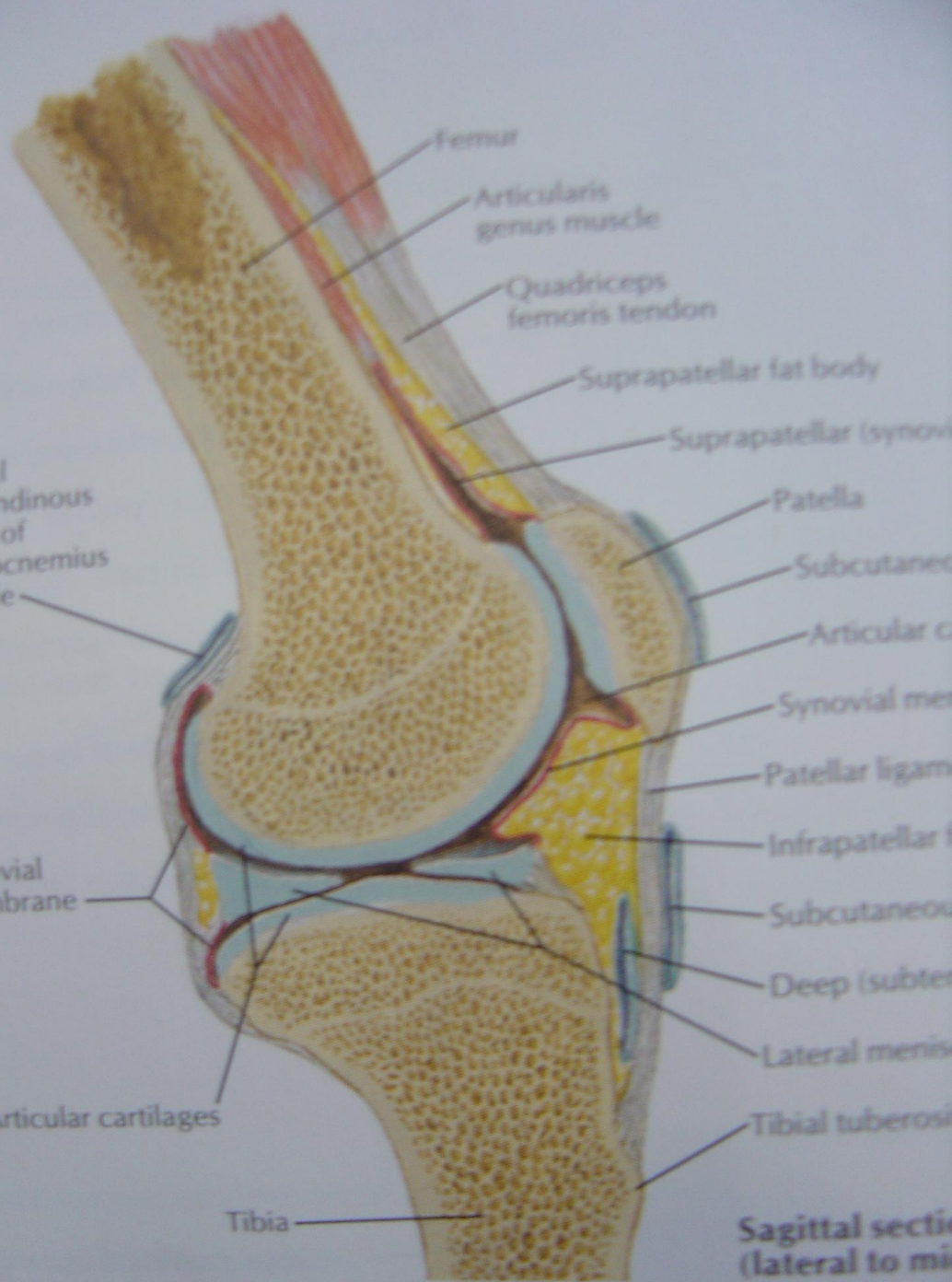


Lateral subtendinous bursa of gastrocnemius muscle

Synovial membrane

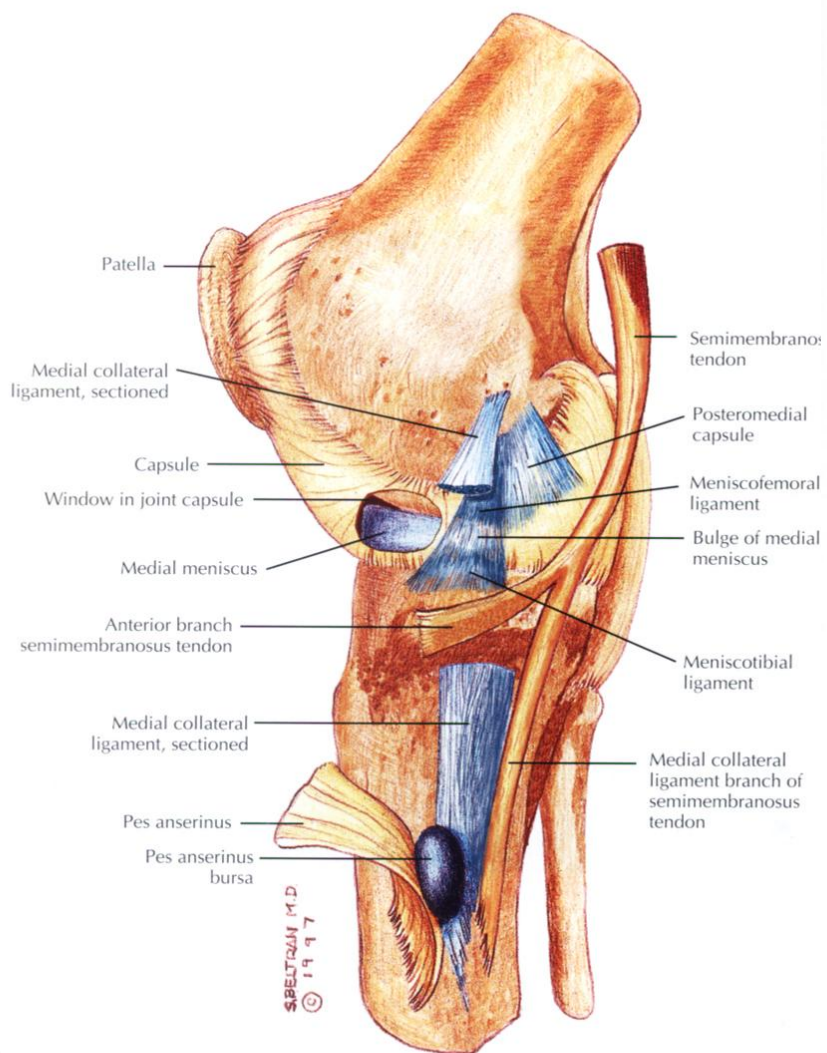
Articular cartilages

Tibia



Sagittal section (lateral to medial)

KNEE: MEDIAL COMPLEX, MEDIAL VIEW

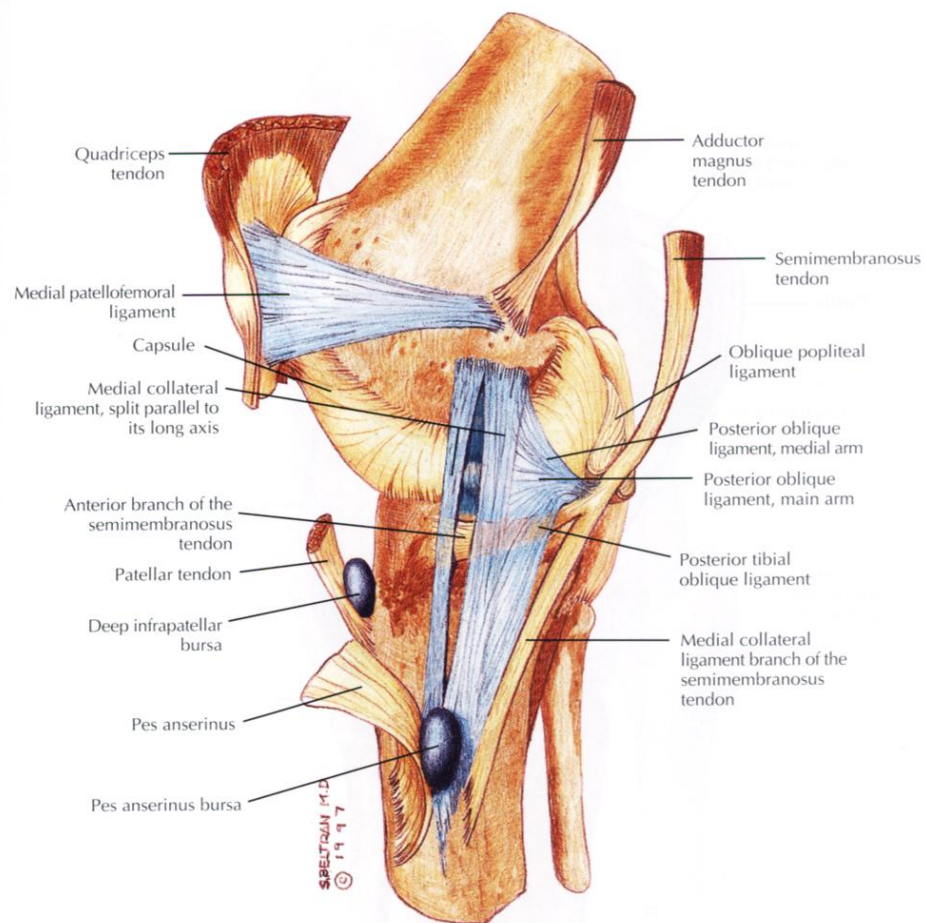


A

FIGURE 5-75A

(A) Medial view of the knee with the pes anserinus cut and reflected. The tibial collateral ligament is also sectioned to show the deep medial capsular ligament with meniscofemoral and meniscotibial components and posteromedial capsule. For related MR, arthroscopy, and surgical anatomy images see Figures 5-85 through 5-88.

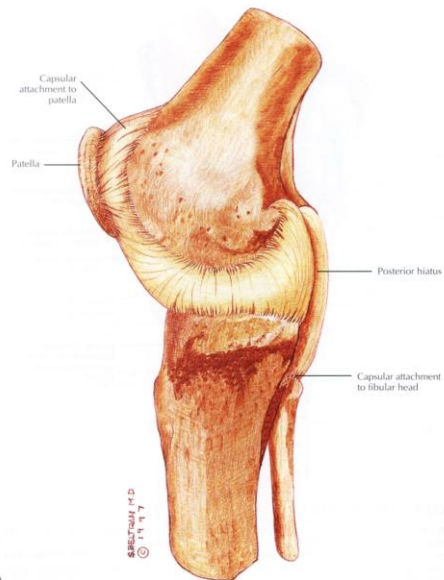
KNEE: MEDIAL COMPLEX, MEDIAL VIEW



B

FIGURE 5-75B CONTINUED

(B) The five arms of insertion of the semimembranosus tendon: (1) the attachment to the posteromedial aspect of the tibia just distal to the joint line; (2) the anterior attachment (anterior branch) to the tibia, deep to the tibial (medial) collateral and posterior oblique ligaments; (3) attachment of the tendon sheath to the posteromedial capsule, including an expansion to the posterior oblique ligament and posterior horn of the medial meniscus; (4) an oblique popliteal ligament attachment; and (5) a distal attachment to the fascia of the popliteus muscle and expansions to the posterior and posteromedial tibia (medial collateral ligament branch). Expansions to the oblique popliteal ligament, posteromedial capsule, anterior branch, and medial collateral ligament branch are shown, as is the joint capsule. The posterior oblique ligament represents the connection between the capsular attachment of the semimembranosus tendon and tibial collateral ligament. The fibers that extend over the semitendinosus tendon are also referred to as the posterior tibial oblique ligament. The tibial collateral ligament is split longitudinally to show the medial capsular layer. For related MR, arthroscopy, and surgical anatomy images see Figures 5-85 through 5-88.



A
FIGURE 5-76A

(A and B) Knee capsular attachments, medial (A) and posteromedial (B) views.

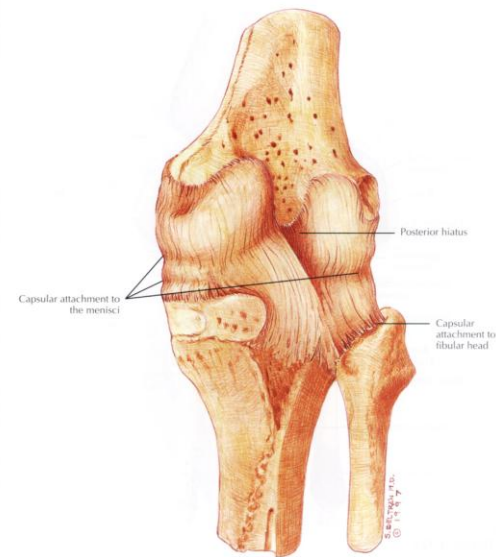


FIGURE 5-76B CONTINUED

B

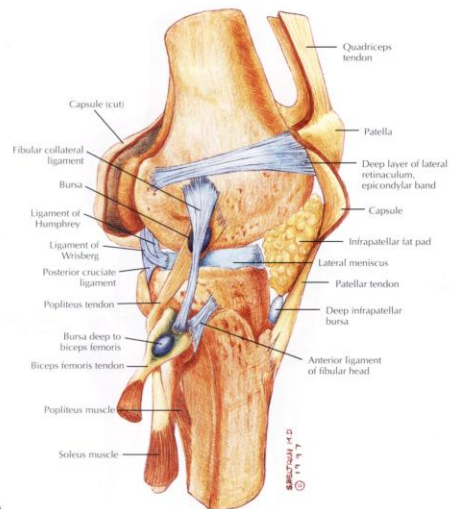
THE KNEE

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MR, ARTHROSCOPY, AND SURGICAL ANATOMY OF THE JOINT

KNEE: LATERAL COMPLEX, LATERAL VIEW



A
FIGURE 5-77A

(A) Lateral view of the knee demonstrating the extra-capsular course of the fibular collateral ligament from the lateral femoral epicondyle to its conjoint insertion with the biceps femoris tendon on the fibular head. The infrapatellar popliteus tendon passes medial to the fibular collateral ligament. For related MR, arthroscopy, and surgical anatomy images see Figures 5-90 through 5-92.

KNEE: POPLITEOFIBULAR LIGAMENT, LATERAL VIEW

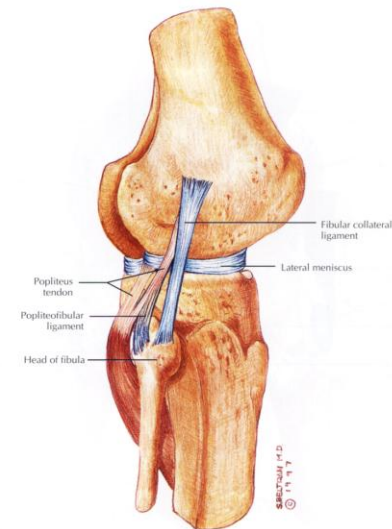
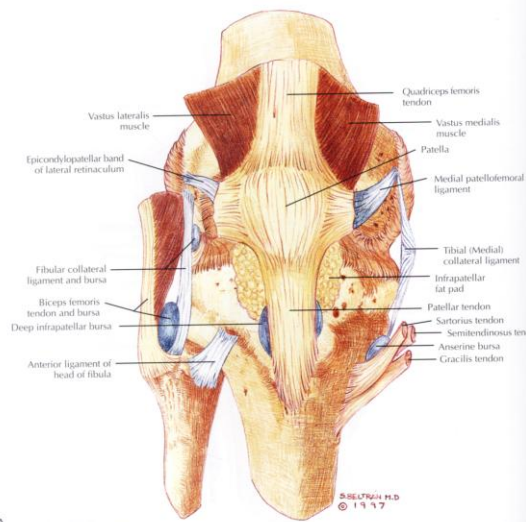


FIGURE 5-77B CONTINUED

B

(B) The recently rediscovered popliteofibular ligament originates from the posterior aspect of the fibula (posterior to the biceps insertion) and extends toward the junction of the popliteus muscle and tendon. Proximal to the musculotendinous junction of the popliteus, the popliteofibular ligament joins the popliteus tendon and is located deep to the lateral limb of the arcuate ligament. The popliteofibular ligament connects the fibula to the femur through the popliteus tendon and is biomechanically stronger than the fibular collateral ligament. The popliteal tendon attachments to the tibia and the popliteofibular ligament help resist posterior translation and varus and external rotation. For related MR, arthroscopy, and surgical anatomy images see Figures 5-90 through 5-92.

KNEE: ANTERIOR COMPLEX, ANTERIOR VIEW

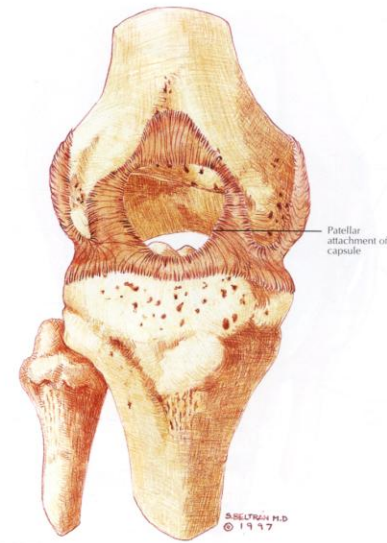


A

FIGURE 5-78A

Anterior view of the knee. (A) The pes anserinus includes the semitendinosus, gracilis, and sartorius tendons. The anserine bursa is deep to the pes anserinus. The insertion of the pes anserinus is on the medial aspect of the tibia, distal to the tibial tuberosity. The lateral and medial retinacula have superficial and deep layers. The deep layer of the lateral retinaculum consists of the epicondylar band, the lateral patellofemoral band, and the transverse ligament. The deep layer of the medial retinaculum consists of the medial patellofemoral ligament, the medial patellotibial ligament, and the patellomeniscal ligament. For related MR, arthroscopy, and surgical anatomy images see Figures 5-84 and 5-98.

KNEE: CAPSULE, ANTERIOR VIEW

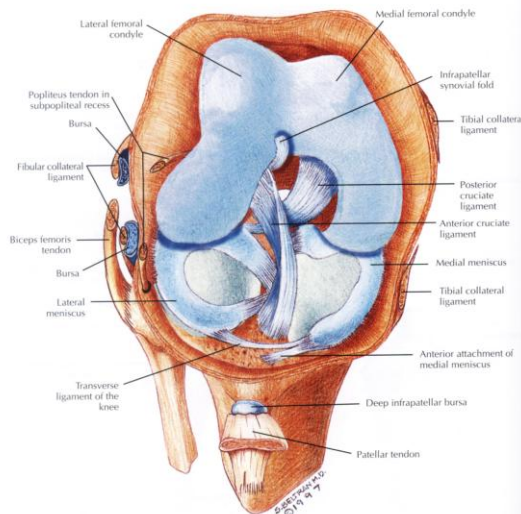


B

FIGURE 5-78B CONTINUED

(B) The patellar attachment of the joint capsule is illustrated with anterior structures removed. For related MR, arthroscopy, and surgical anatomy images see Figures 5-84 and 5-98.

KNEE: JOINT INTERIOR, ANTERIOR VIEW

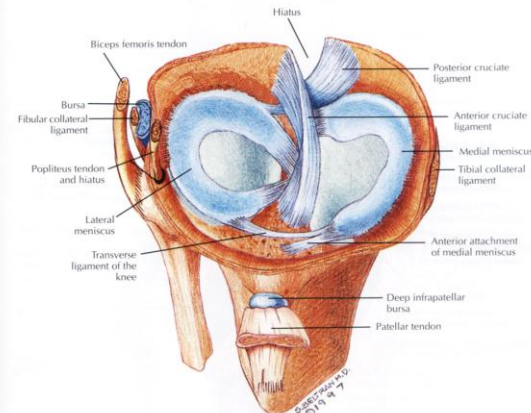


A

FIGURE 5-79A

(A) Anterior view of the joint interior with the knee in flexion. For related MR, arthroscopy, and surgical anatomy images see Figures 5-92 through 5-94, 5-96, and 5-99.

KNEE: JOINT INTERIOR, ANTEROSUPERIOR VIEW



B

FIGURE 5-79B CONTINUED

(B) Anterosuperior view of the tibia with meniscal and cruciate attachments. The anterior cruciate ligament (ACL) and posterior cruciate ligament (PCL) are intracapsular and extrasynovial. Proximally, the ACL is attached to a fossa on the posteromedial aspect of the lateral femoral condyle. Distally, the ACL extends inferior and medial to the anterior tibial intercondylar area and attaches to a fossa anterior and lateral to the anterior tibial spine, between the anterior attachments of the menisci. The PCL originates in the lateral aspect of the medial femoral condyle, crosses the ACL, and attaches to the posterior intercondylar fossa of the tibia. For related MR, arthroscopy, and surgical anatomy images see Figures 5-92 through 5-94, 5-96, and 5-99.

KNEE: SUPERFICIAL DISSECTION, POSTERIOR VIEW

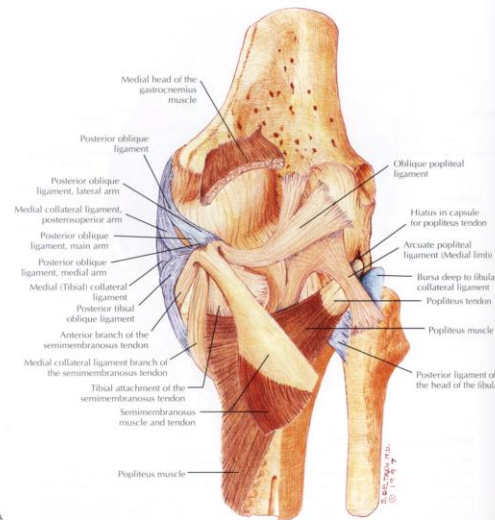


FIGURE 5-80A

(A and B) Posterior view of superficial (A) and deep (B) dissections. The semimembranosus tendon expansions, including the oblique popliteal ligament, are illustrated posteromedially. The posterior oblique ligament is shown with its main, lateral, and medial arms. The posterior tibial oblique ligament extends over the anterior branch of the semimembranosus tendon. The posterior tibial oblique ligament is formed by the posteromedial fibers of the tibial collateral ligament. The posterior oblique ligament and posterior tibial oblique ligament fibers insert on the posterior tibial border. The arcuate popliteal ligament, the popliteus tendon, and the lateral collateral ligament components of the posterolateral corner are illustrated. The posterolateral complex also includes the popliteofibular ligament, the tibiofibular ligament, and the lateral head of the gastrocnemius muscle.

KNEE: DEEP DISSECTION, POSTERIOR VIEW

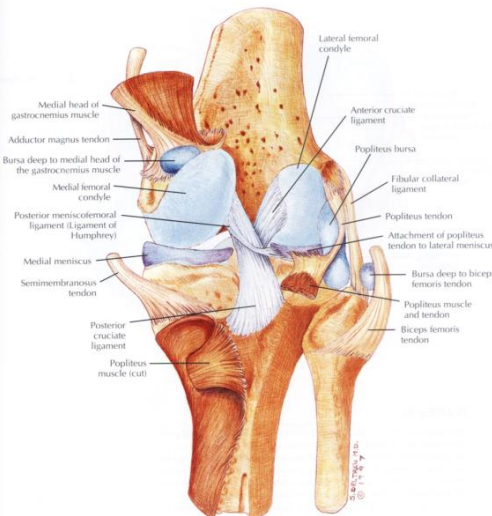


FIGURE 5-80B CONTINUED

The proximal attachment of the anterior cruciate ligament and the distal attachment of the posterior cruciate ligament are illustrated in the deep dissection (part B). The posterior meniscotibial ligament (the ligament of Wrisberg) connects the posterior horn of the lateral meniscus to the lateral aspect of the medial femoral condyle near the origin of the posterior cruciate ligament. For related MR, arthroscopy, and surgical anatomy images see Figures 5-88, 5-90 through 5-92, and 5-96.

KNEE: DEEP DISSECTION, POSTERIOR VIEW

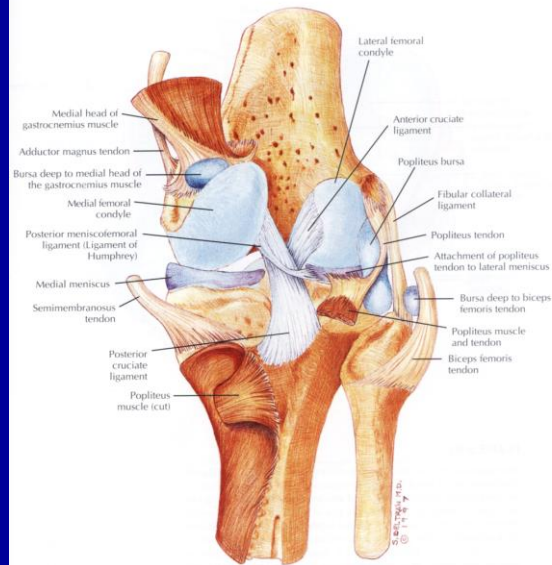


FIGURE 5-80B CONTINUED

The proximal attachment of the anterior cruciate ligament and the distal attachment of the posterior cruciate ligament are illustrated in the deep dissection (part B). The posterior meniscotibial ligament (the ligament of Wrisberg) connects the posterior horn of the lateral meniscus to the lateral aspect of the medial femoral condyle near the origin of the posterior cruciate ligament. For related MR, arthroscopy, and surgical anatomy images see Figures 5-88, 5-90 through 5-92, and 5-96.

KNEE: TIBIA, ANTROSUPERIOR VIEW

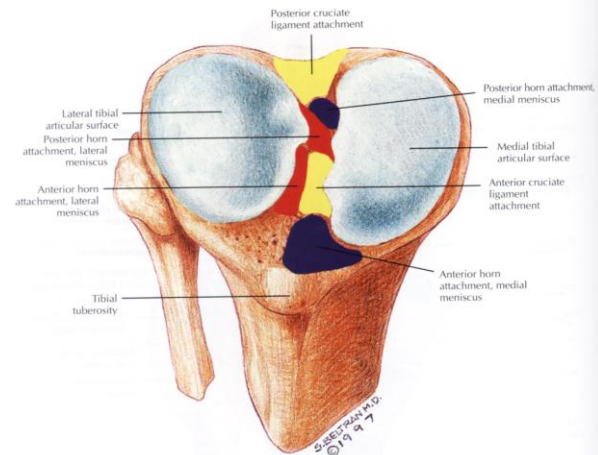


FIGURE 5-81

Anterosuperior view of the tibia with the menisci, cruciate, and collateral ligaments removed. The tibial attachments of the lateral and medial menisci and anterior and posterior cruciate ligaments are mapped on the tibial surface. Anterior to the tibial attachment of the anterior cruciate ligament, the anterior horn of the medial meniscus is attached to the area of the intercondylar fossa of the tibia. The attachment of the posterior horn of the lateral meniscus is located at the posterior intercondylar fossa of the tibia between the attachments of the posterior horn of the lateral meniscus and the posterior cruciate ligament. The anterior horn of the lateral meniscus is attached between the tibial intercondylar eminence and the posterior horn of the medial meniscus. The posterior horn of the lateral meniscus is attached between the tibial intercondylar eminence and the posterior horn of the medial meniscus. For related MR, arthroscopy, and surgical anatomy images see Figure 5-92 through 5-94 and 5-96.

KNEE: MENISCI, ANTEROLATERAL VIEW

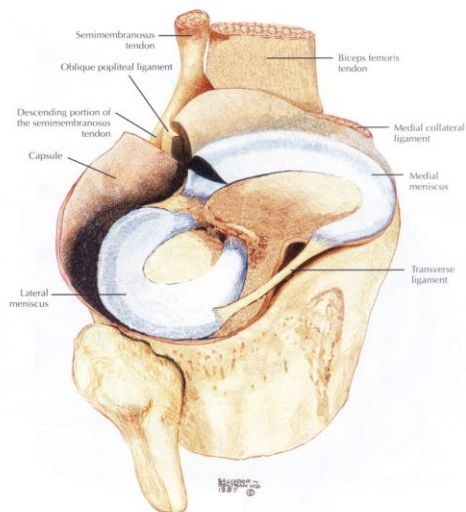


FIGURE 5-82

Anterolateral and superior view of the medial and lateral menisci. The semicircular medial meniscus has a wide posterior horn, narrows anteriorly, and has a more open C-shaped configuration than the more circular lateral meniscus. The lateral meniscus is relatively symmetric in width from anterior to posterior. The posterior fibers of the anterior horn attachment of the medial meniscus attach to the transverse ligament. The transverse ligament of the knee connects the anterior horns of the medial and lateral menisci. The oblique popliteal ligament, which reinforces the posterior capsule, is seen through the cut capsule. For related MR, arthroscopy, and surgical anatomy images see Figures 5-93 through 5-95.

KNEE: POSTEROLATERAL CORNER, SUPERIOR VIEW

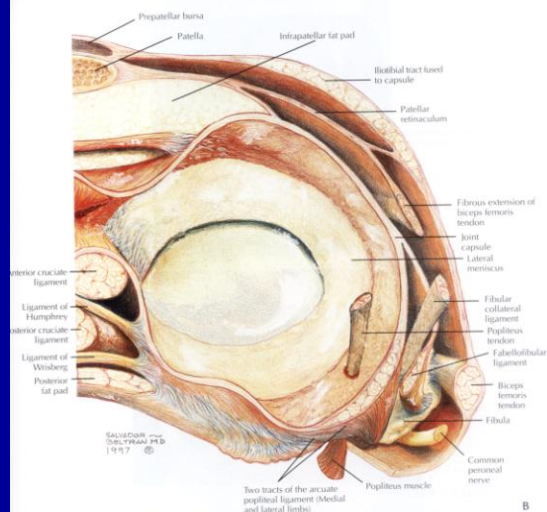


FIGURE 5-83B CONTINUED

The arcuate ligament, fibular collateral ligament, fibulotibial ligament, and popliteus tendon components of the posterolateral complex are shown in the axial (superior) view of the anatomy of the posterolateral knee (part B). The arcuate ligament spans the posterolateral joint and extends distally, parallel with the fibular collateral ligament. The Y-shaped arcuate ligament has medial and lateral limbs. The arcuate ligament and posterolateral complex stabilize the posterolateral aspect of the knee against varus and external rotation. The fibulotibial ligament portion of the posterolateral complex is also seen in part B of Figure 5-77. For related MR, arthroscopy, and surgical anatomy images see Figures 5-85 through 5-95.

KNEE: POSTEROMEDIAL CORNER, SUPERIOR VIEW

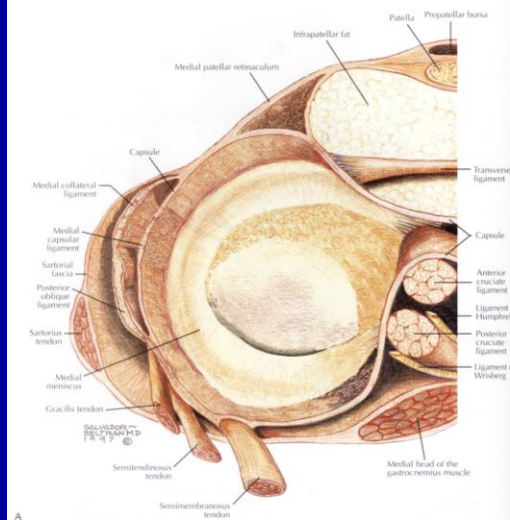


FIGURE 5-83A

(A and B) Axial (superior) views of posteromedial (A) and posterolateral (B) knee anatomy. The posteromedial corner receives an important contribution from the semimembranosus tendon. The sartorial fascia (layer I), superficial oblique collateral ligament (layer II), and medial capsular ligament (layer III) merge anteriorly. The medial patellar retinaculum is formed from the fusion of layers I and II. Posteriorly, layers II and III merge to form the posterior oblique ligament. The posteromedial corner resists valgus laxity in knee extension. For related MR, arthroscopy, and surgical anatomy images see Figures 5-85 through 5-95.

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MRI, ARTHROSCOPY, AND SURGICAL ANATOMY OF THE JOINTS

KNEE: ARCIFORM INTERMEDIATE OBLIQUE LAYERS

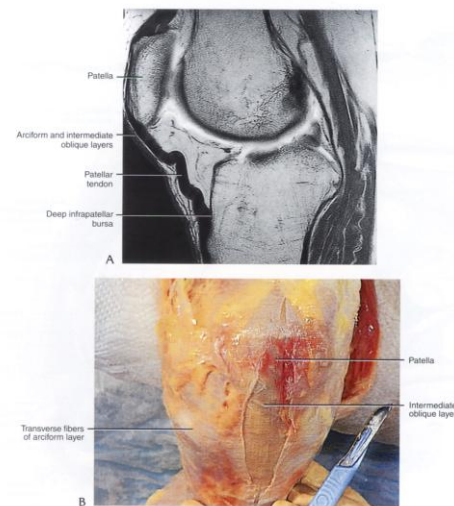


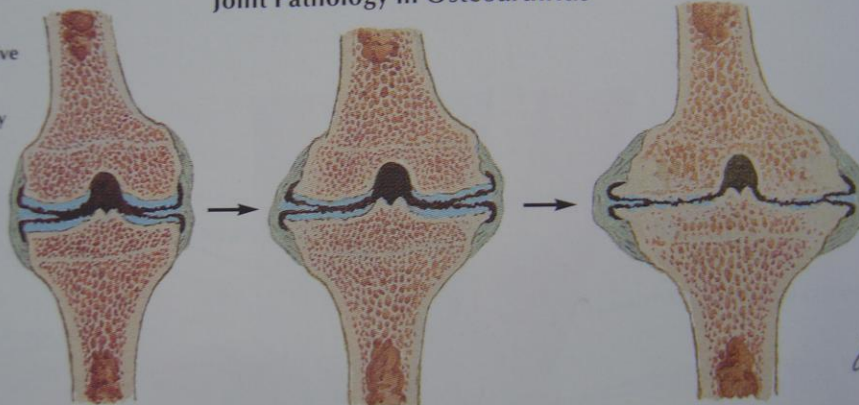
FIGURE 5-84A, B

(A) T1-weighted sagittal image with hypointensity of the arciform and intermediate oblique layers of the knee. The bursa between the arciform and intermediate oblique layers is collapsed. (B) Corresponding dissection with the transverse fibers of the arciform layer divided to expose the intermediate oblique layer. (C) T1-weighted coronal image with attachment of the proximal patellar tendon and quadriceps tendon. (D and E) Corresponding dissection showing the intermediate oblique fibers (D) and the long tract of the rectus femoris fibers (E). The intermediate oblique layer attenuates distal to the patella. Note that the long fibers of the rectus are seen after sectioning the more superficial intermediate oblique layer.

Thoái hóa khớp

Joint Pathology in Osteoarthritis

Progressive stages in joint pathology



Early degenerative changes with surface fraying of articular cartilages

Further erosion of cartilages, pitting, and cleft formation. Hypertrophic changes of bone at joint margins

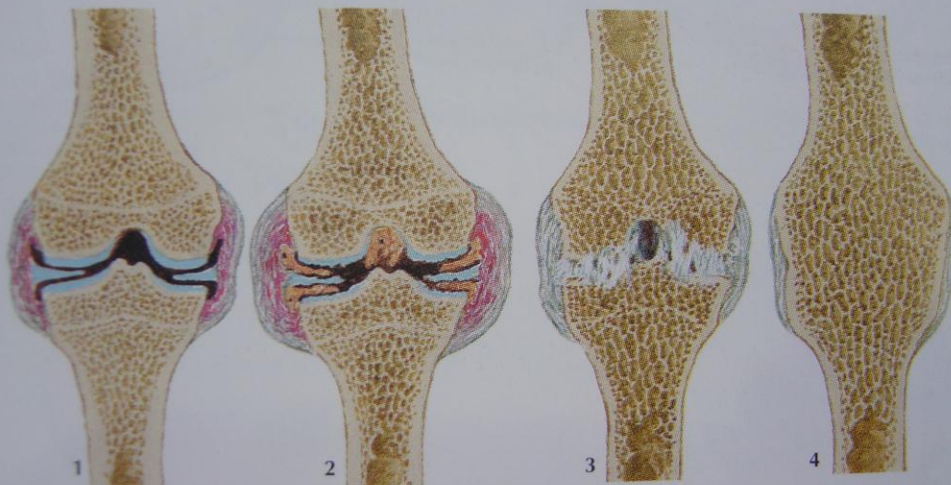
Cartilages almost completely destroyed and joint space narrowed. Subchondral bone irregular and eburnated; spur formation at margins. Fibrosis



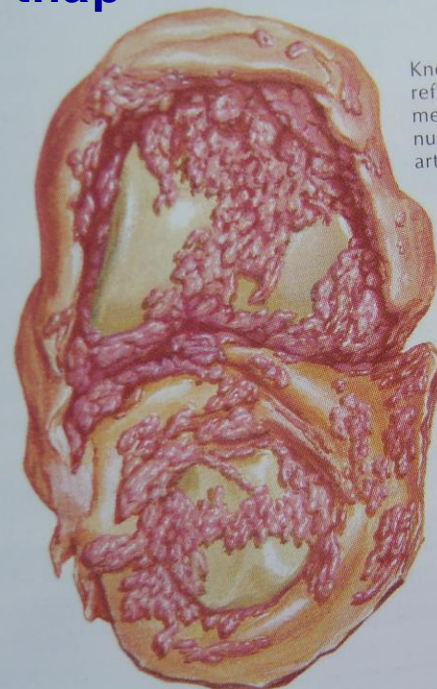
Knee joint opened anteriorly reveals large erosion of articular cartilages of femur and patella with cartilaginous excrescences at intercondylar notch

Viêm khớp dạng thấp

Joint Pathology in Rheumatoid Arthritis



Progressive stages in joint pathology. 1. Acute inflammation of synovial membrane (synovitis) and beginning proliferative changes. 2. Progression of inflammation with pannus formation; beginning destruction of cartilage and mild osteoporosis. 3. Subsidence of inflammation; fibrous ankylosis. 4. Bony ankylosis; advanced osteoporosis



Knee joint opened anteriorly, patella reflected downward. Thickened synovial membrane inflamed; polypoid outgrowths and numerous villi (pannus) extend over rough articular cartilages of femur and patella

Osteoarthritis



Section through distal interphalangeal joint shows irregular, hyperplastic bony nodules (Heberden's nodes) at articular margins of distal phalanx. Cartilage eroded and joint space narrowed



Radiograph of distal interphalangeal joint reveals late-stage degenerative changes. Cartilage destruction and marginal osteophytes (Heberden's nodes)



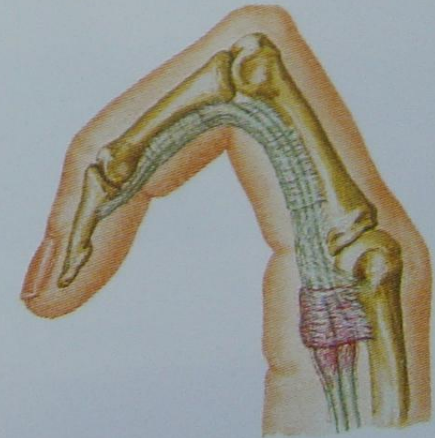
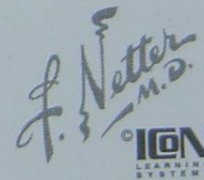
Late-stage degenerative changes

Rheumatoid Arthritis

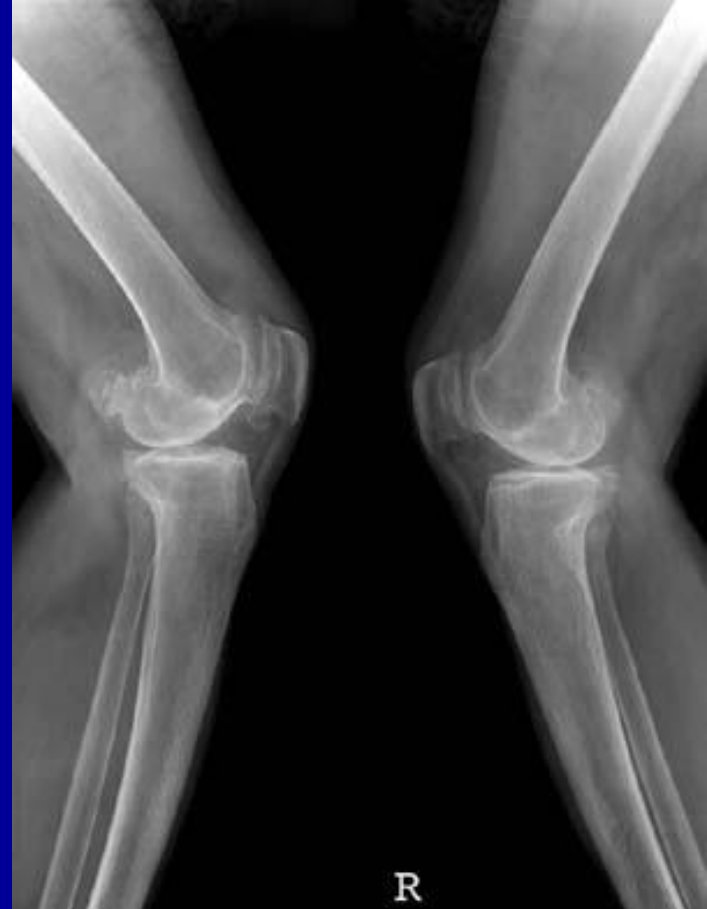


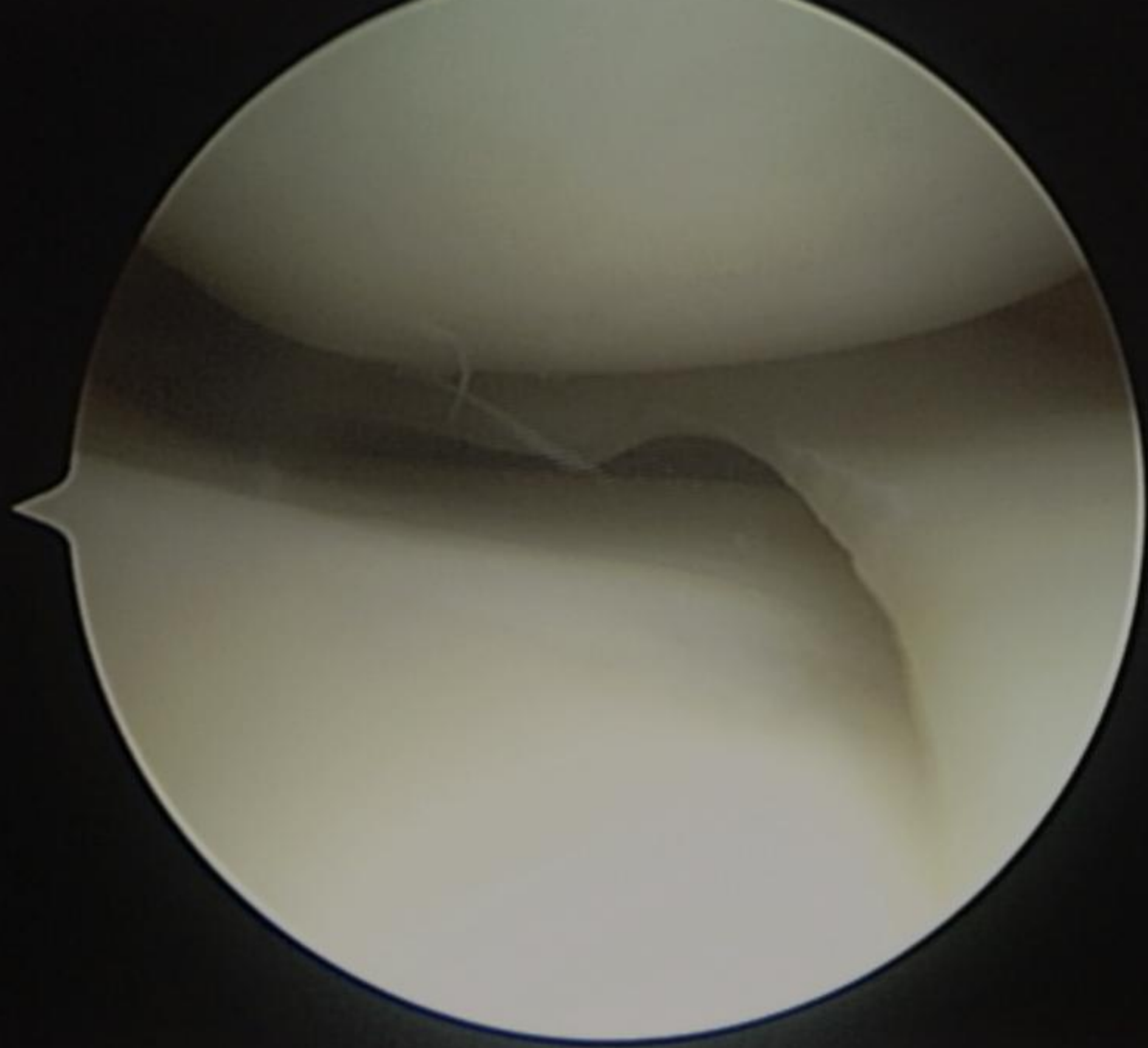
Radiograph shows cartilage thinning at proximal interphalangeal joints, erosion of carpus and wrist joint, osteoporosis, and finger deformities

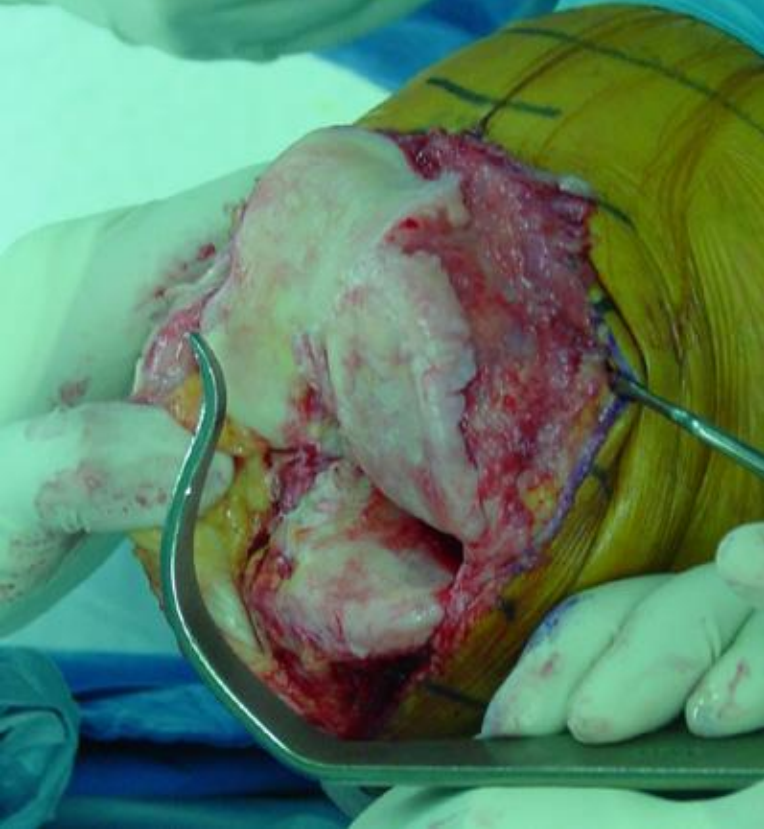
Stenosing Tenosynovitis (Trigger Finger)

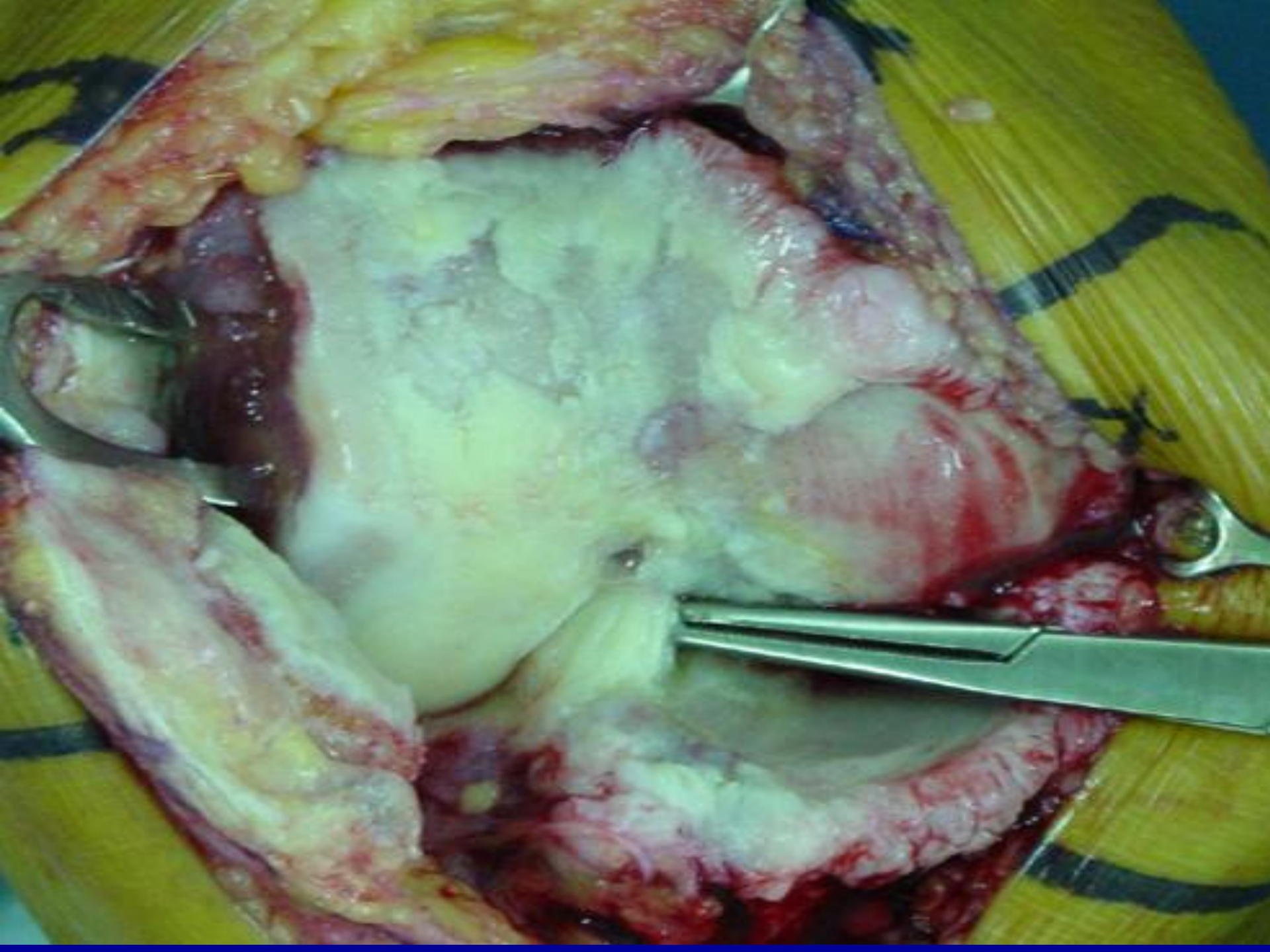


Inflammatory thickening of fibrous sheath (pulley) of flexor tendons with fusiform nodular enlargement of both tendons. Broken line indicates line for incision lateral aspect of pulley









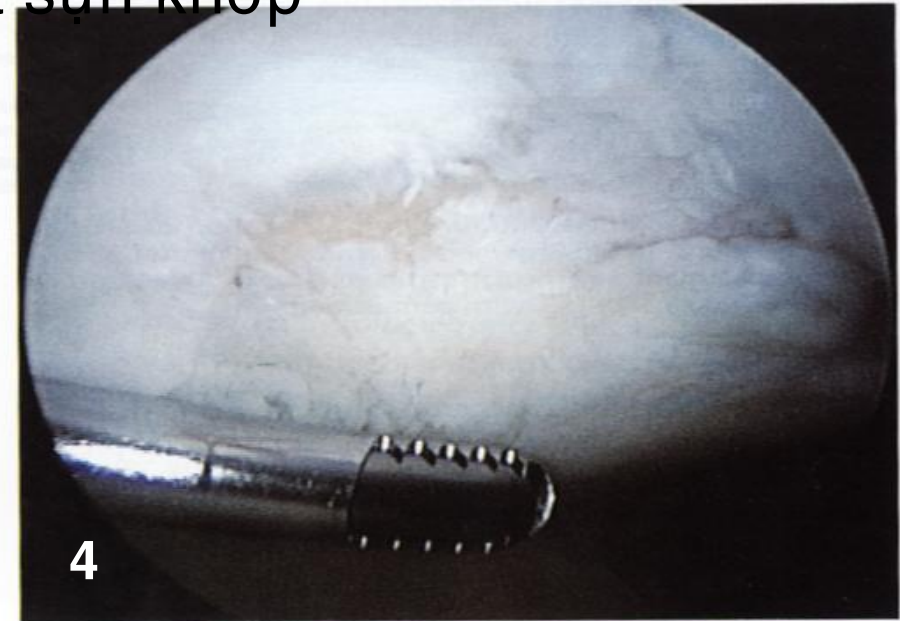
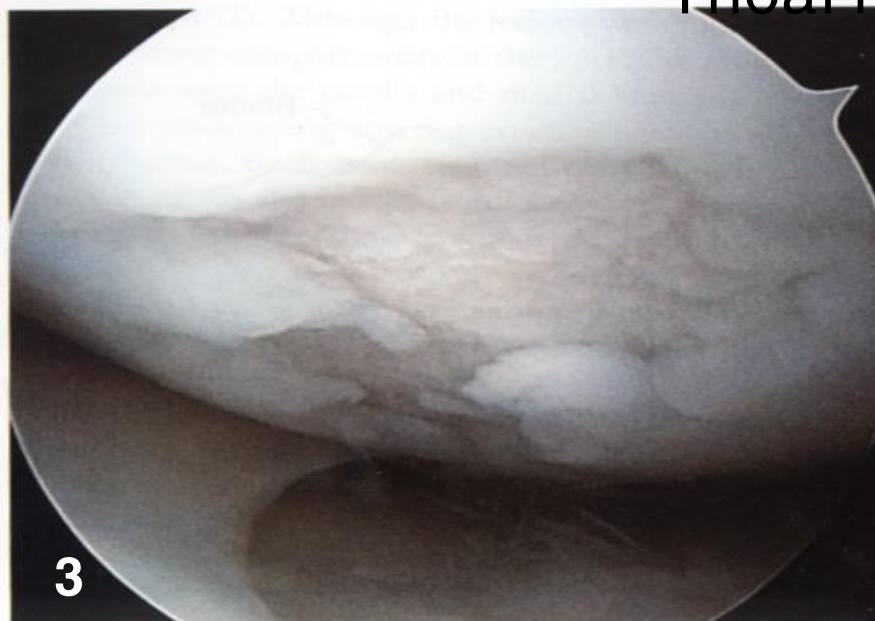
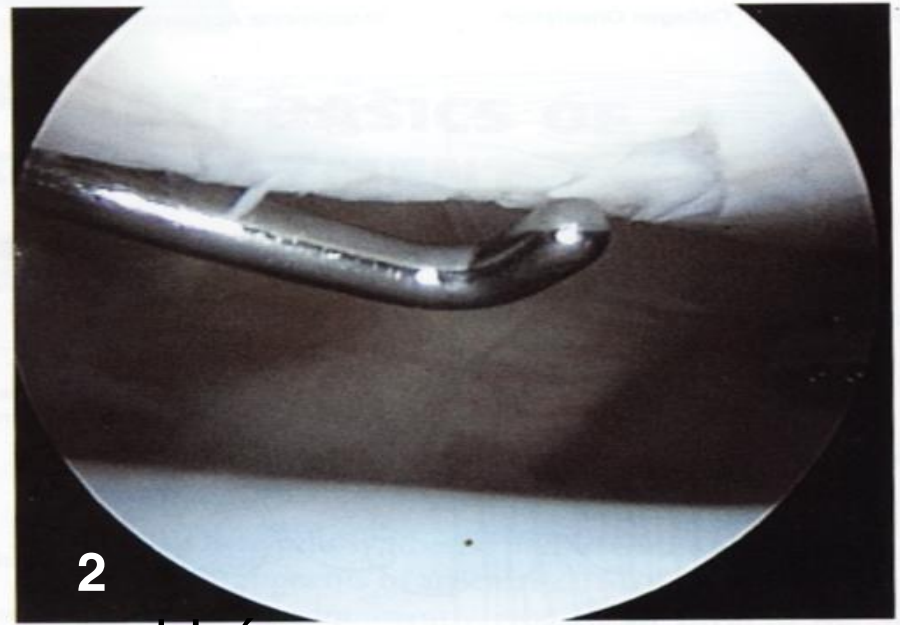
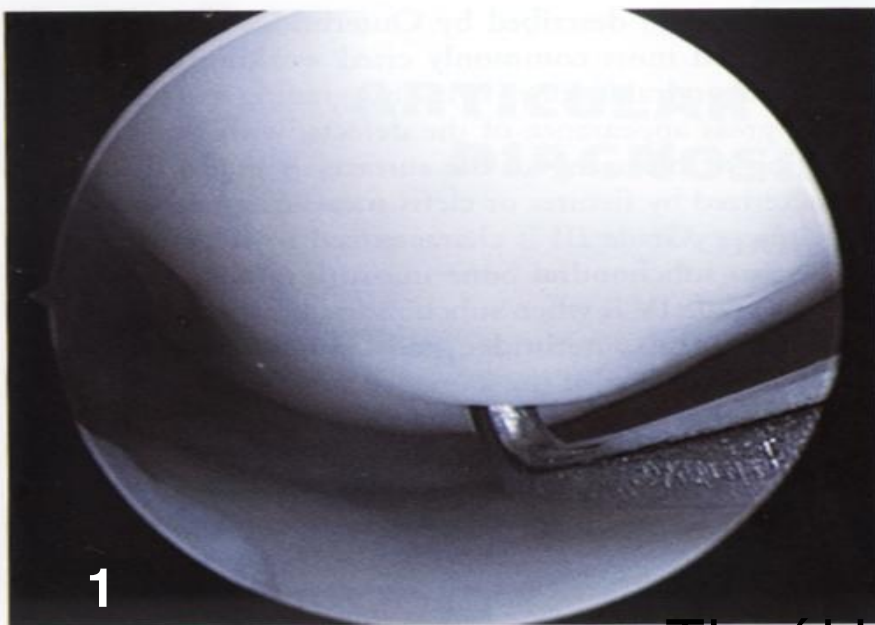


Phân loại tổn thương sụn khớp, (Outerbridge cải tiến)

Table 54-1 Modified Outerbridge Classification
of Cartilage Lesions

Grade	Description
I	Softening of articular cartilage
II	Fibrillation or superficial fissures of cartilage
III	Deep fissuring of cartilage without exposed bone
IV	Exposed subchondral bone

From Outerbridge R: The etiology of chondromalacia patellae. J Bone Joint Surg Br 43:752-757, 1961.



Thoái hóa sụn khớp

FIGURE 18.3 Arthroscopic photographs of articular cartilage lesions using modified Outerbridge classification. **A:** Grade I softening. **B:** Grade II partial-thickness fissuring. **C:** Grade III full-thickness fissuring and fibrillation. **D:** Grade IV articular changes with exposed bone centrally surrounded by diffuse grade III articular cartilage.

DEBRIDEMENT OF ARTICULAR CARTILAGE IN THE KNEE IN A NUTSHELL

History:

Knee pain when ambulating stairs, rising from a low chair, and squatting or kneeling

Physical Examination:

Crepitus with full active range of motion of the knee; palpable effusion with compression of the suprapatellar pouch; tenderness with palpation of the patellar facets

Imaging:

Standard and weight-bearing radiographs

Indications:

Continued pain that affects activities of daily living after failed conservative treatment

Surgical Technique:

Initial diagnostic arthroscopy to inspect the entire articular surface of the knee, probing and looking for damaged articular cartilage; the extent of chondral damage and whether it involves the weight-bearing surface should be noted

Arthrotome blade and basket forceps allow a controlled debridement without putting normal cartilage at risk

An accessory portal can be established to help reach difficult areas of damaged cartilage

After debridement, the lesion's size is measured with a calibrated probe, and the location is noted

Postoperative Management:

Range-of-motion exercises are begun immediately after surgery; a noncrepitant strengthening program is started, followed by a progressive return to activities

Results:

Encouraging; surgery had a beneficial effect in 32 of 36 patients after a 59-month follow-up

Patients with traumatic chondrosis had a higher percentage of good or excellent results after surgery compared with atraumatic cases

No significant correlation between the grade of chondral damage and improvement with surgery

Arthroscopic debridement of the knee may improve function and decrease pain but is not a curative procedure

Thoái hoá khớp

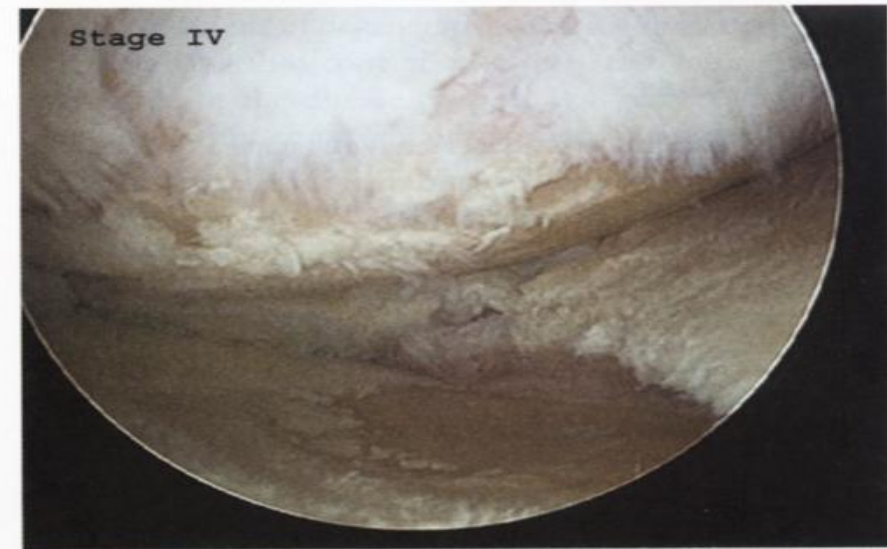
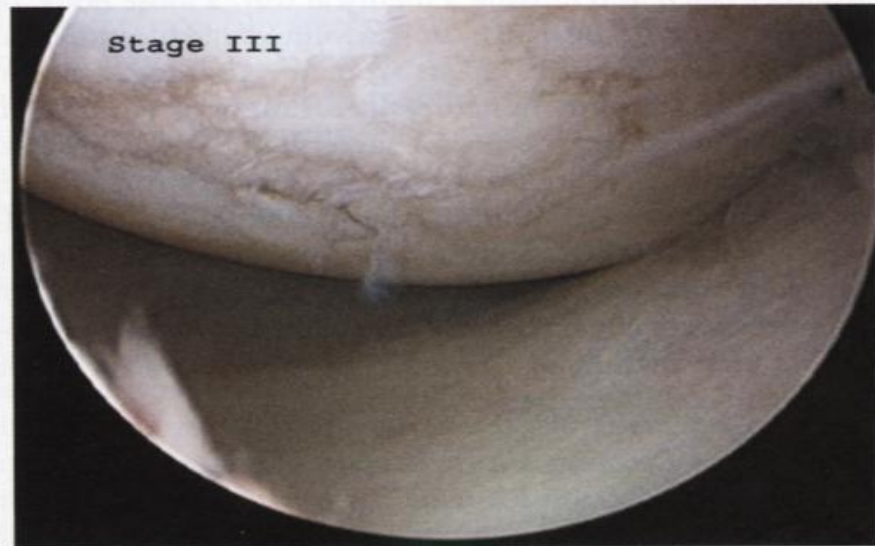


FIGURE 20.4 Arthroscopic pictures of different cases representing progressively severe degeneration of articular cartilage, sometimes in association with meniscal disease. **A**, Stage I; **B**, Stage II; **C**, Stage III; **D**, Stage IV.

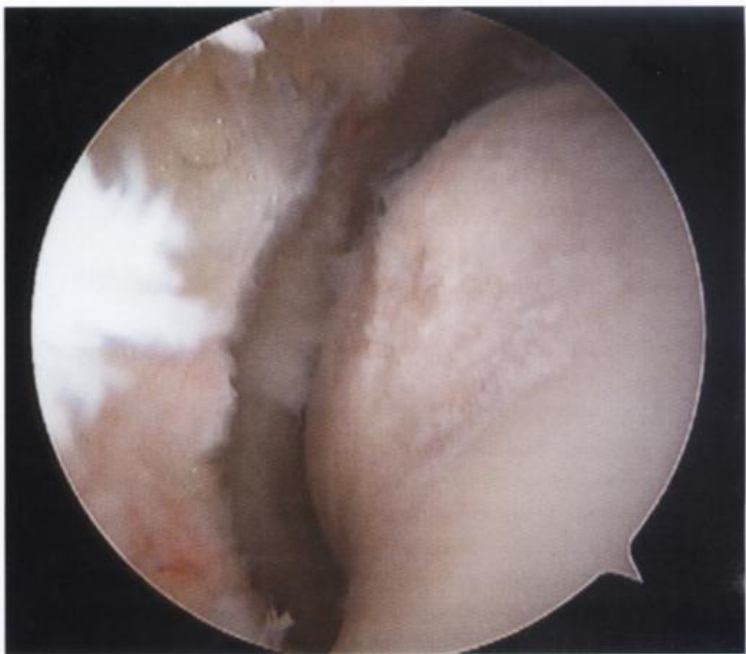


Figure 55-6 Grade III chondral changes to the femoral trochlea.

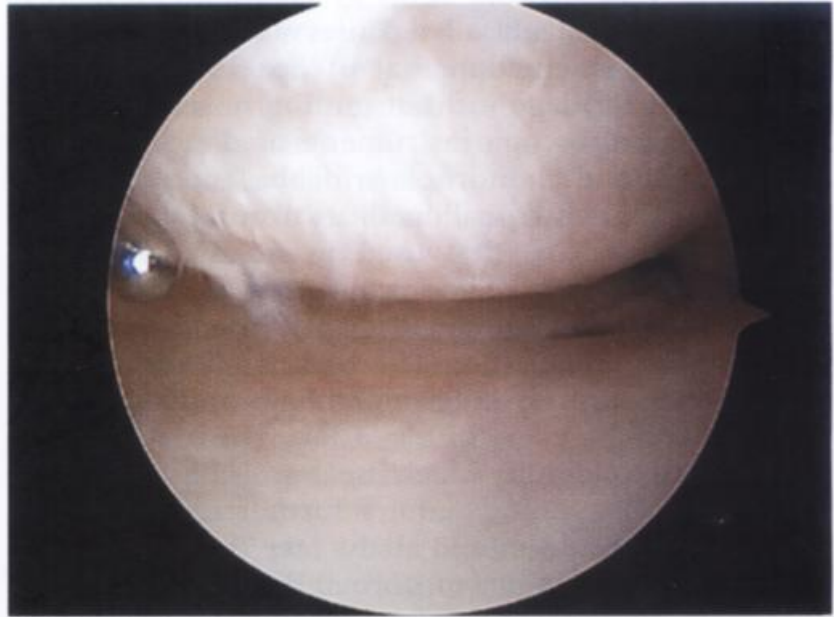


Figure 55-7 Grade III chondral changes to the medial femoral condyle.

Hõm khớp lồi cầu đùi đùi

Thay đổi sụn khớp độ 3

Lồi cầu trong



Figure 55-5 Femoral trochlea viewed from the superolateral portal.

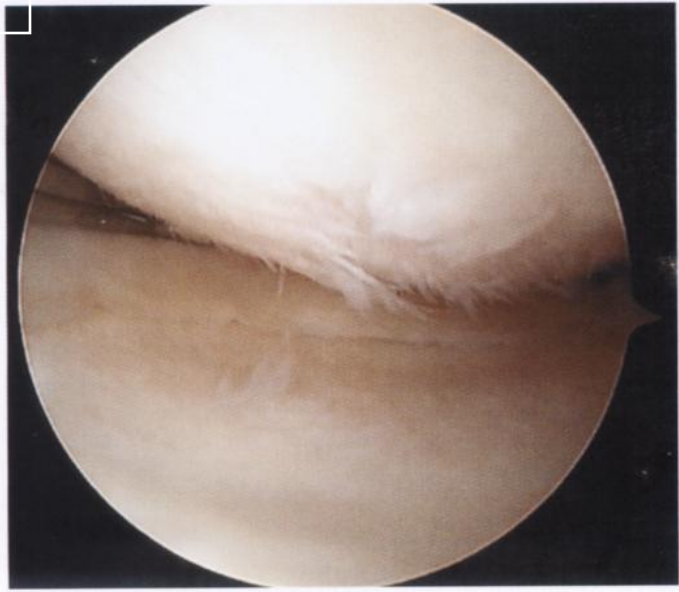


Figure 55-8 Medial femoral condyle with knee in full extension.

Nhìn từ lỗ vào trên ngoài

Gối duỗi thẳng

Phác đồ điều trị tổn thương sụn khớp

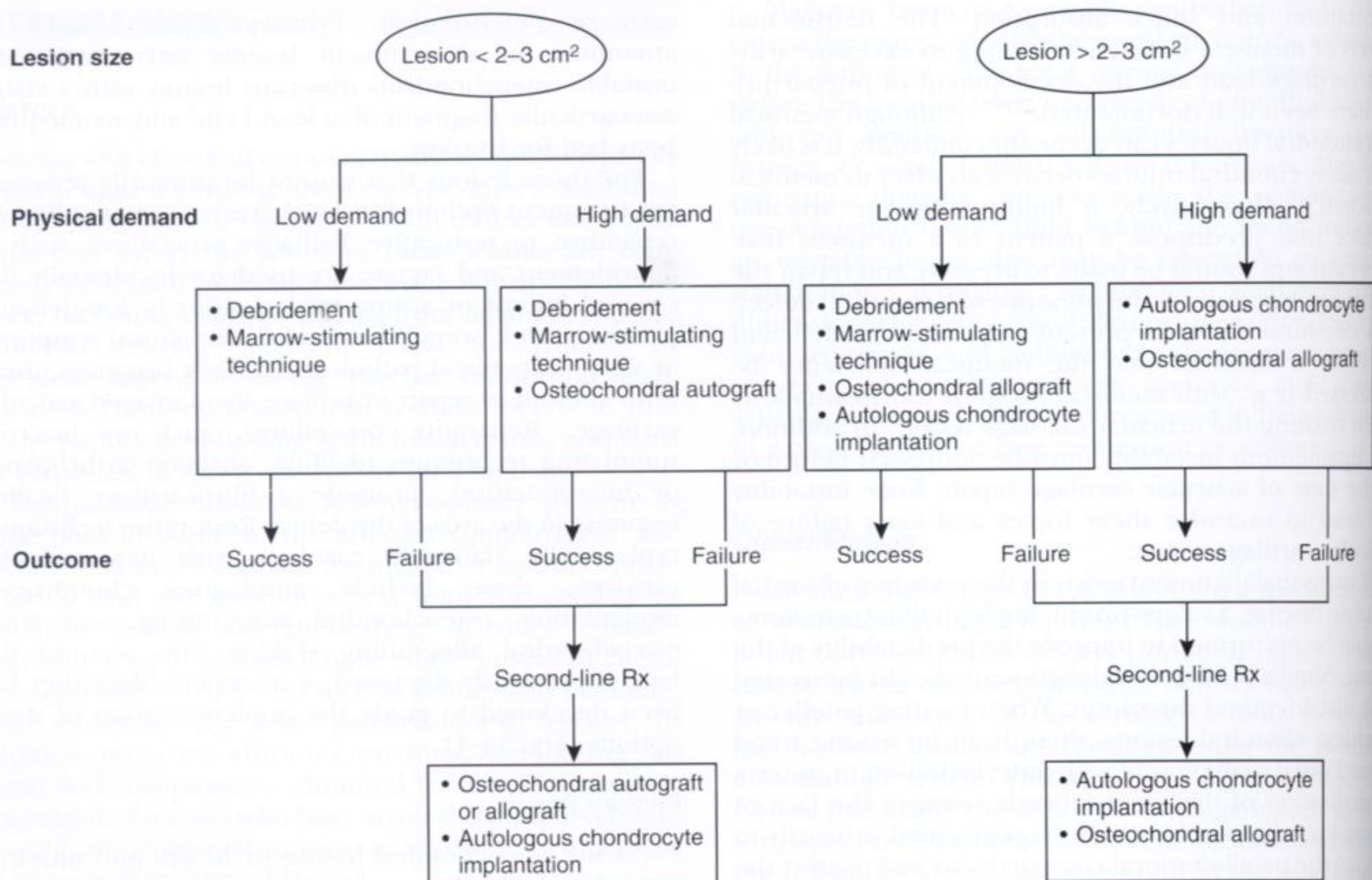


Figure 54-1 Treatment algorithm for articular cartilage lesions.

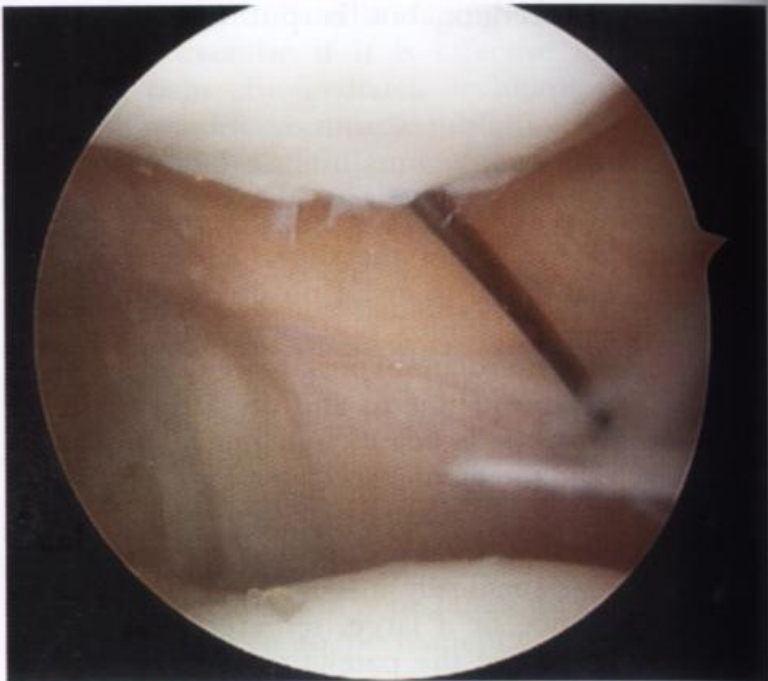


Figure 55-9 Establishing a superomedial accessory portal with an 18-gauge needle.

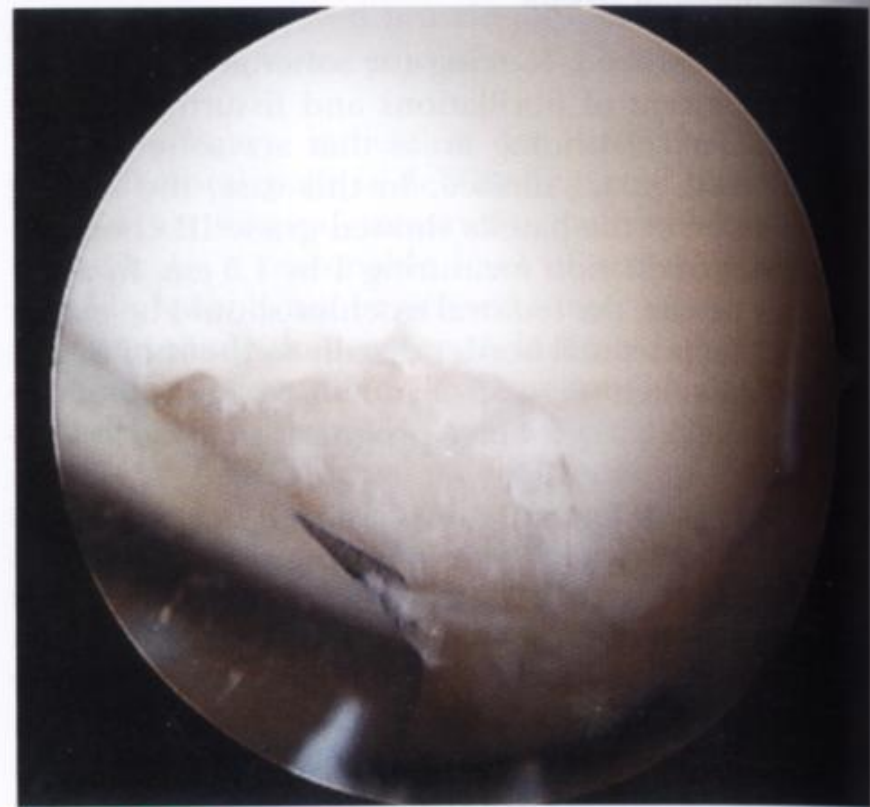


Figure 55-10 Arthrotome blade debridement of sessile fragments.

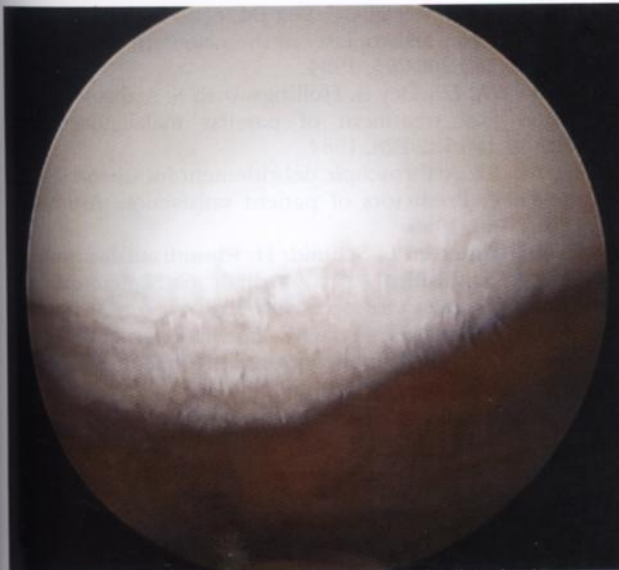
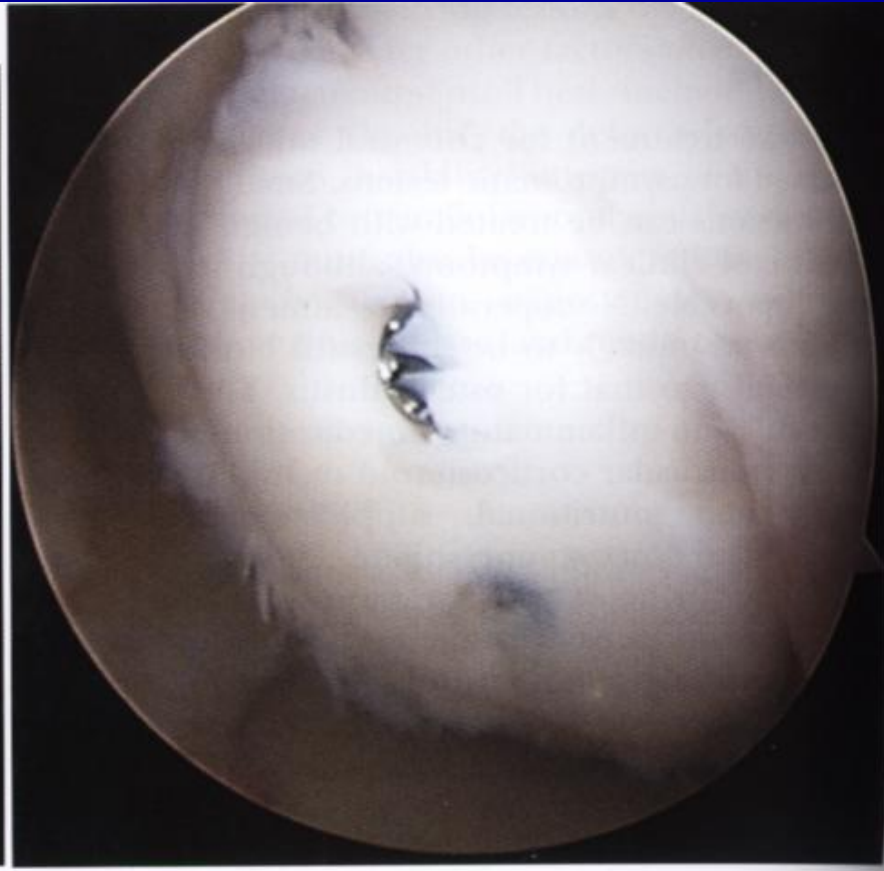


Figure 55-11 Patella after debridement with stable borders.

Cắt lọc



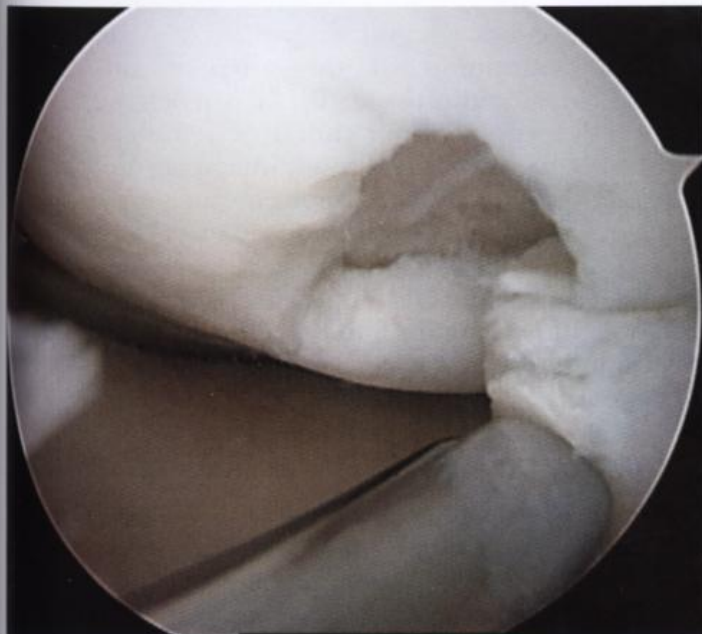
A



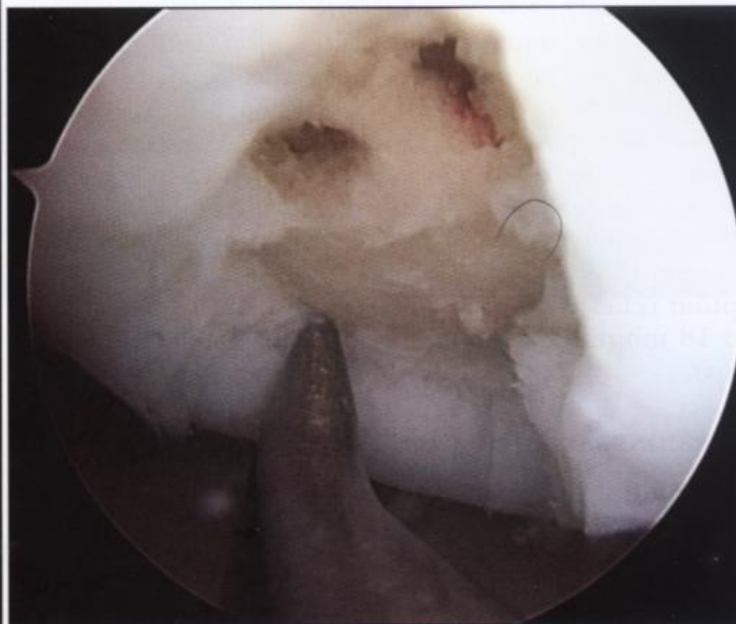
B

Figure 54-2 A, Arthroscopic example of an unstable osteochondritis dissecans lesion of the medial femoral condyle considered amenable to repair. B, Arthroscopic picture of the lesion repaired with two variably pitched headless screws.

Cố định bằng ốc không đầu



A



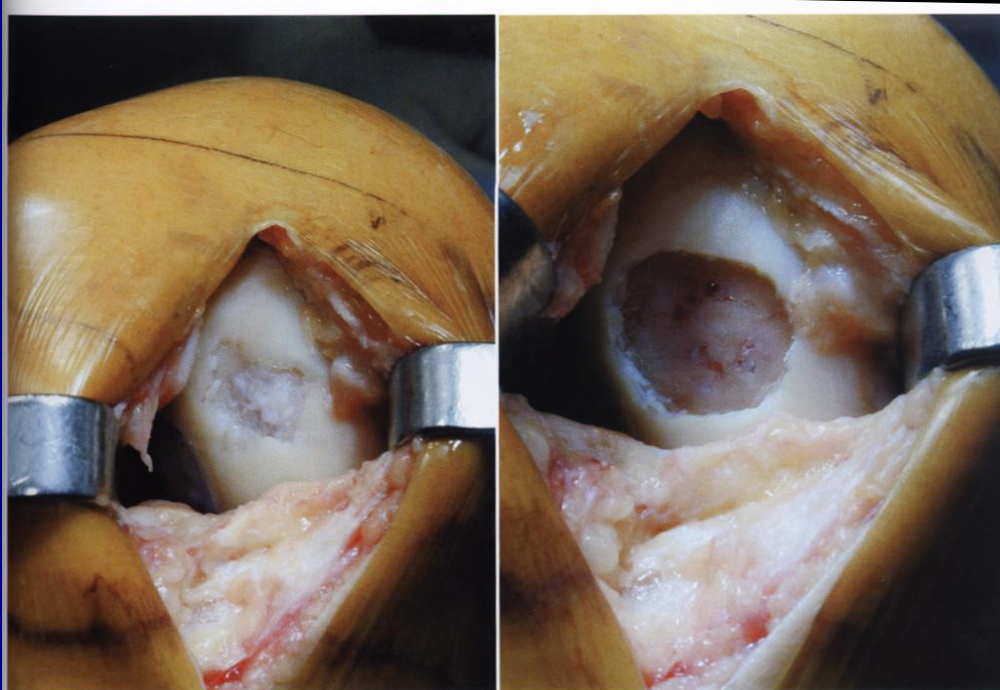
B



C

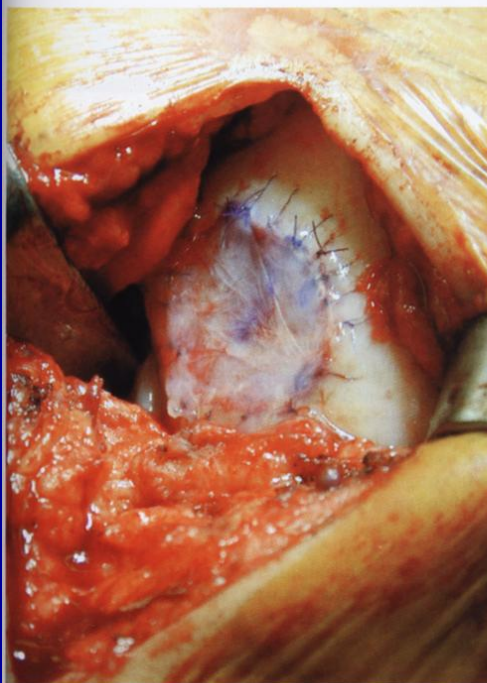
Kỹ thuật tạo ổ gãy nhỏ ở xương dưới sụn để kích thích tủy xương tạo xơ sụn

Figure 54-3 Microfracture technique. A, An 8- by 10-mm grade IV chondral lesion of the lateral femoral condyle seen arthroscopically. B, Microfracture awls are used to penetrate the subchondral bone to allow the marrow elements to enter the lesion. C, The final prepared lesion.



A

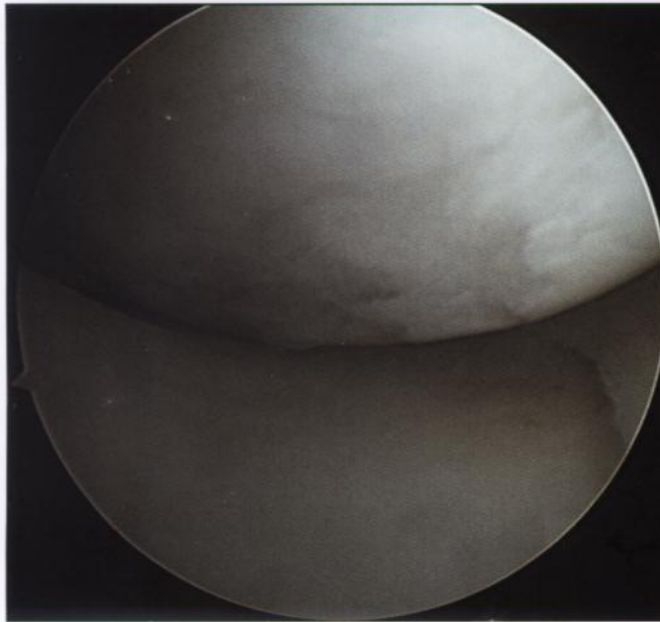
B



C

Ghép sụn tự thân qua đường mổ nhỏ

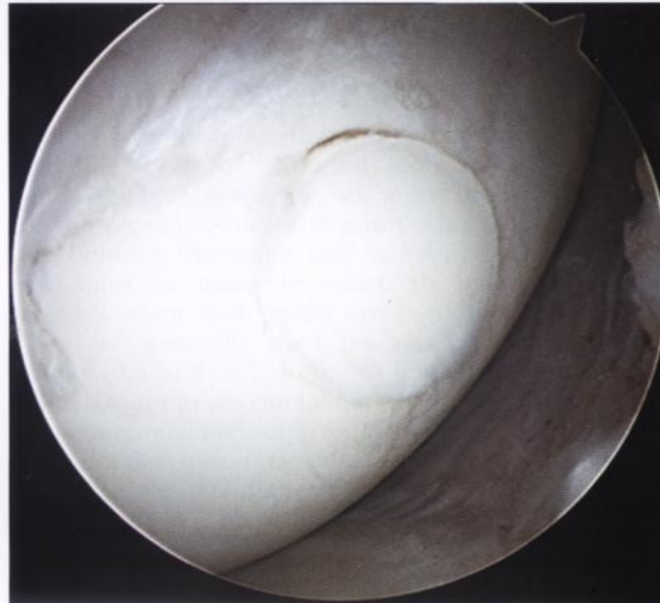
Figure 54-4 Autologous chondrocyte implantation. A, A 20- by 15-mm grade IV chondral lesion of the medial femoral condyle seen via a mini-arthrotomy before preparation for transplantation. B, The lesion is prepared for transplantation. C, The periosteal patch is sewn in place and sealed with fibrin glue, and the cells are injected.



A



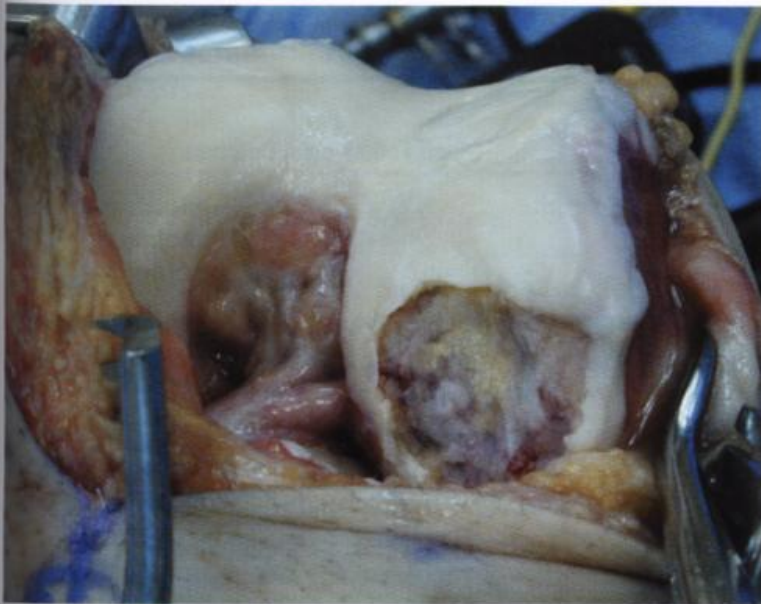
B



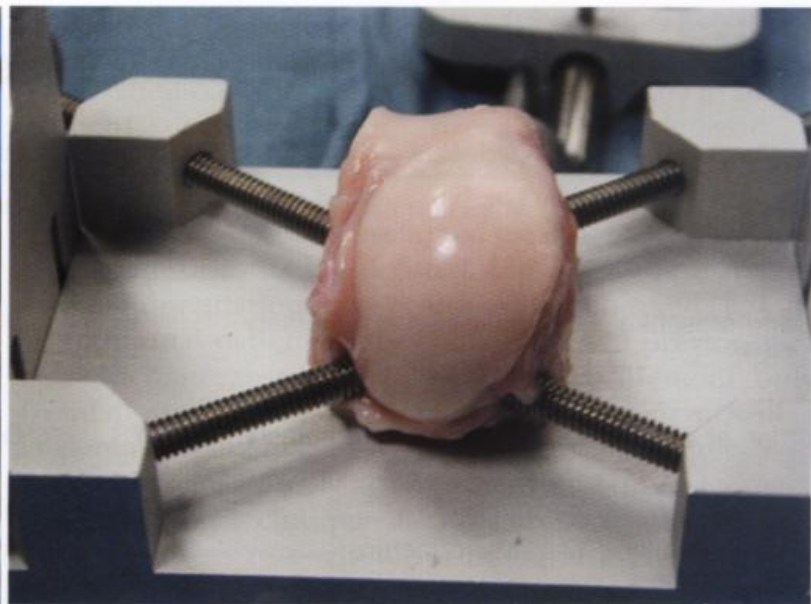
C

Chuyển ghép sụn tự thân

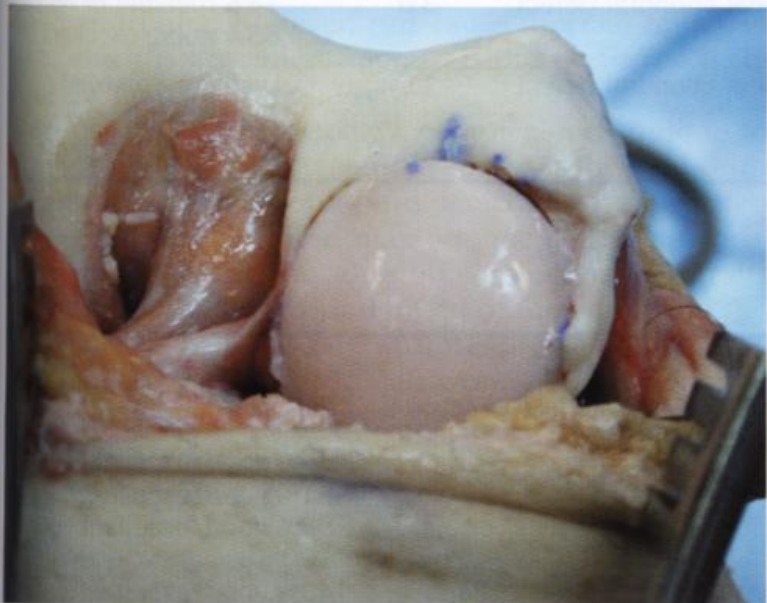
Figure 54-5 Osteochondral autograft transplantation. A, An 8-mm cylindric grade III-IV chondral lesion of the medial femoral condyle. B, The recipient site is prepared for a single osteochondral autograft plug. C, The final repaired lesion with the osteochondral autograft plug in place.



A



B



C

Chuyển ghép sụn đồng loại

Figure 54-6 Osteochondral allograft transplantation. A, A 24- by 28-mm irregular grade IV lesion of the lateral femoral condyle. B, The allograft hemicondyle is placed in the cutting jig for preparation of the donor allograft plug. C, The osteochondral allograft plug fills the large chondral defect.

Kết quả lâm sàng của pp kích thích tủy xương

Table 54-2

Clinical Results of Marrow-Stimulation Techniques

Author (Date)	Technique	No. of Patients	Indications	Mean Follow-up	Outcome
Rand (1991) ³²	Abrasion arthroplasty	28	Degenerative arthritis	3.8 yr	39% good/excellent 29% unchanged/fair 32% worse/poor
Bert and Maschka (1989) ²	Abrasion arthroplasty	59	Degenerative arthritis	60 mo	51% good/excellent 16% unchanged/fair 33% worse/poor
Friedman et al. (1984) ⁹	Abrasion arthroplasty	73	Degenerative arthritis	>6 mo	60% good/excellent 34% unchanged/fair 6% worse/poor
Gill and MacGillivray (2001) ¹²	Microfracture	100	Focal chondral defect	6 yr	Significant reduction in pain and swelling and improved function
Gill and MacGillivray (2001) ¹²	Microfracture	19	Focal chondral defect	3 yr	74% minimal or no pain 63% good/excellent
Steadman et al. (2002) ³⁵	Microfracture	71	Focal chondral defect	11 yr	Lysholm improved Tegner improved (3.1–5.8, mean)

Table 54-3

Kết quả LS của pp phục hồi sụn khớp

Clinical Results of Cartilage Restoration Techniques

Author (Date)	Technique	Type/Location	No. of Patients	Mean Follow-up	Outcome
Hangody et al. (2001) ¹⁵	OC autograft	Femur Patella, trochlea Tibia	461 93 24	>1 yr	92% good/excellent 81% good/excellent 88% good/excellent
Kish et al. (1999) ²⁰	OC autograft	Femur	52	>12 mo	100% good/excellent
Bradley (1999) ³	OC autograft	—	145	18 mo	43% good/excellent 43% satisfactory 12% poor
Hangody et al. (1998) ¹⁶	OC autograft	Femur, patella	57	48 mo	91% good/excellent
Aubin et al. (2001) ¹	OC allograft	Femur	60	10 yr	66% good/excellent 20% failure
Bugbee et al. (2000) ⁵	OC allograft	Femur	122	5 yr	91% successful 5% failure
Chu et al. (1999) ⁶	OC allograft	Femur, tibia, patella	55	6.3 yr	76% good/excellent 16% failure
Gross (1997) ¹⁴	OC allograft	Femur, tibia, patella	123	7.5 yr	85% successful
Garrett (1994) ¹⁰	OC allograft	Femur	17	3.5 yr	94% successful
Meyers et al. (1989) ²³	OC allograft	Femur, tibia, patella	39	3.6 yr	78% successful 22% failure
Peterson et al. (2002) ²⁹	ACI	Femur	18	>5 yr	89% good/excellent
		OCD	14	>5 yr	86% good/excellent
		Patella	17	>5 yr	65% good/excellent
		Femur, ACL	11	>5 yr	91% good/excellent
Minas (2001) ²⁵	ACI	Femur, tibia, patella, trochlea	169	>1 yr	85% significant improvement
Micheli et al. (2001) ²⁴	ACI	Femur, patella, trochlea	50	>3 yr	84% significant improvement
Peterson et al. (2000) ³⁰	ACI	Femur	25	>2 yr	92% good/excellent
		Patella	19	>2 yr	65% good/excellent
		Femur, ACL	16	>2 yr	75% good/excellent
		Multiple	16	>2 yr	67% good/excellent
Gillogly et al. (1998) ¹³	ACI	Femur, patella, tibia	25	>1 yr	88% good/excellent
Brittberg et al. (1994) ⁴	ACI	Femur, patella	16	39 m	88% good/excellent
		Patella	7	36 m	29% good/excellent

ACI, autologous chondrocyte implantation; ACL, anterior cruciate ligament; OC, osteochondral; OCD, osteochondritis dissecans.

Tóm tắt quyết định pp chọn lựa cho tổn thương sụn khớp

Table 54-4

Summary of Decision Making in Articular Cartilage Injuries

Clinical Evaluation	
History	Pain in ipsilateral compartment; recurrent effusions
Physical examination	Pain in ipsilateral compartment; rule out coexisting pathology
Imaging	Standing radiographs, including 45-degree posteroanterior, and mechanical axis views; magnetic resonance imaging commonly shows articular cartilage lesions
Classification	Outerbridge classification (see Table 54-1)
Associated injuries	Evaluate for knee instability, meniscal deficiency, malalignment
Treatment Options	
Nonoperative	Low-demand patients, small lesions ($<1\text{ cm}^2$)
Operative	
Primary repair	Osteochondral lesions
Debridement and lavage	Low-demand patients Small to medium lesions ($0.5\text{--}3\text{ cm}^2$)
Marrow stimulation (microfracture)	Moderate-sized lesions ($1\text{--}3\text{ cm}^2$) Low- or high-demand patients Fibrocartilage repair tissue
Osteochondral autograft	Small to medium lesions ($1\text{--}3\text{ cm}^2$) Autogenous tissue with normal hyaline architecture Consider donor site morbidity and availability
Autologous chondrocyte implantation	Medium to large lesions ($2\text{--}10\text{ cm}^2$) Hyaline-like tissue Durable
Osteochondral allograft	Medium to large lesions (up to hemicondyle) Allograft tissue Good for lesions with bony defects
Postoperative rehabilitation	
	Protect repair tissue from weight bearing for 6 wk Immediate range of motion Gradual return to weight bearing and activities based on technique

Biện pháp điều trị thoái hoá khớp

1. Điều chỉnh thể trọng
2. Vận động điều độ
3. Điều trị bằng thuốc
4. Điều trị phẫu thuật

Bệnh nhân đau xương khớp cần chú ý

Bệnh nhân cần tránh

Không ngồi xổm,ngồi bệt xuống đất

Không đi bộ quá xa,đi một đoạn ngắn nghỉ

Không leo cầu thang

Không làm việc quá sức,ráng quá sức

Không mang,vác nặng

Không cúi khi khiêng hay lấy đồ vật bị rơi

Không bắt buộc phải tập thể dục thẩm mỹ hay xài máy móc để tập

Không đứng hay ngồi quá 1 giờ 30 phút

Bệnh nhân nên làm

Nên thay đổi tư thế

Nên tập thể dục nhẹ trên giường khi đã bớt đau lưng

Nên tập thể dục dưỡng sinh

Phải tập thể dục thường xuyên đều đặn mỗi ngày

Số lần tập mỗi động tác tùy theo sức khỏe của mỗi bệnh nhân

Bệnh lý bao hoạt dịch

Table 48-1

Synovial Disorders

Rheumatoid arthritis
Pigmented villonodular synovitis
Plicae
Synovial hemangioma
Synovial osteochondromatosis
Intra-articular adhesions
Fibrotic fat pad
Fibrotic ligamentum mucosum
Post-traumatic synovitis
Hemophilic synovitis



Figure 48-1 Magnetic resonance imaging scan of a 15-year-old boy with diffuse pigmented villonodular synovitis. Note the synovial thickening in the suprapatellar pouch (arrow).

Viêm hoạt dịch vi nhung mao sắc tố lan tỏa

Tư thế cắt bao hoạt mạc qua nội soi

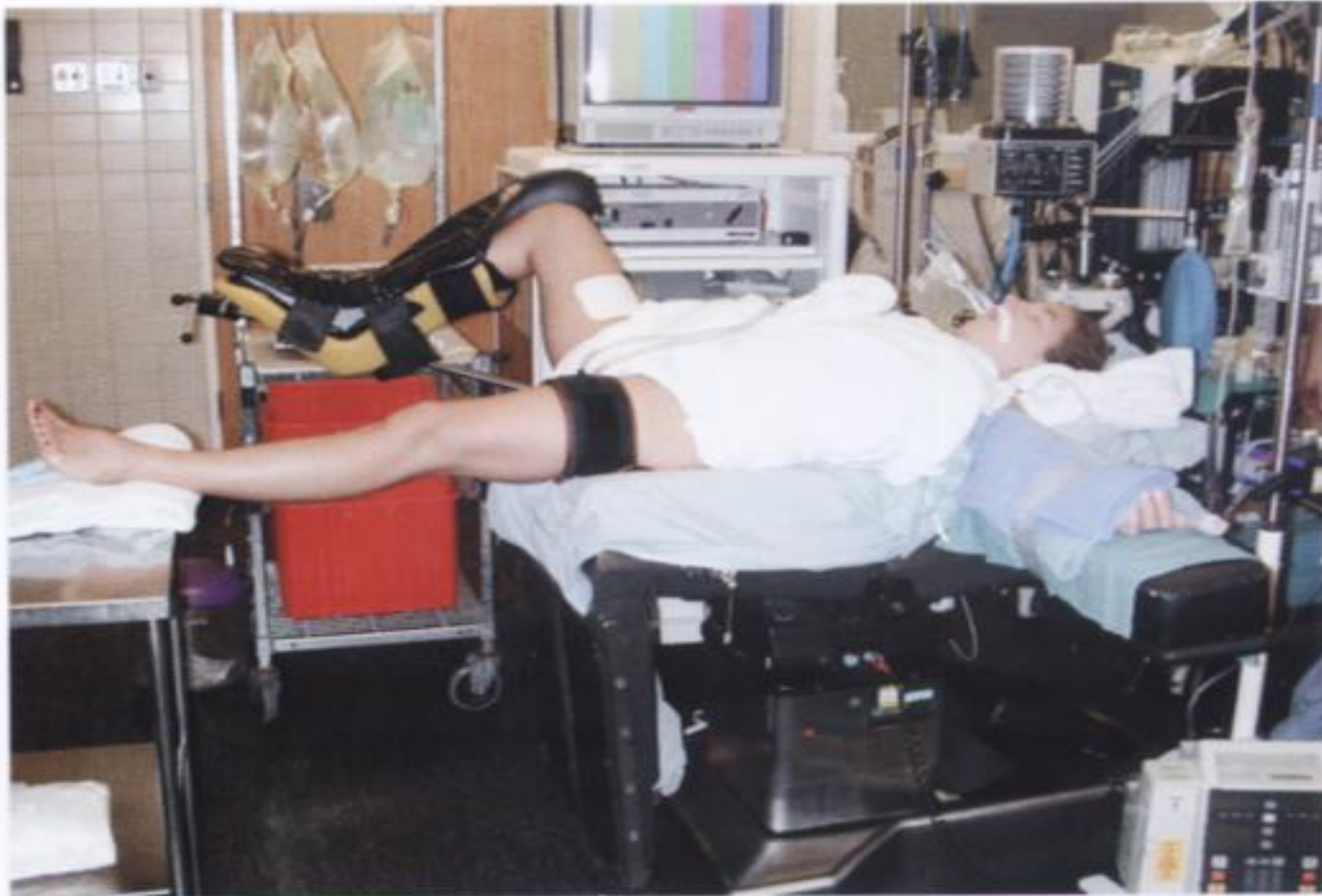


Figure 48-2 Arthroscopic setup and patient positioning.

Đường vào kinh điển (trước ngoài và trước trong) cắt bao hoạt mạc



Figure 48-3 Typical arthroscopic portals used for synovectomy.

Viêm hoạt mạc/ Viêm khớp dạng thấp

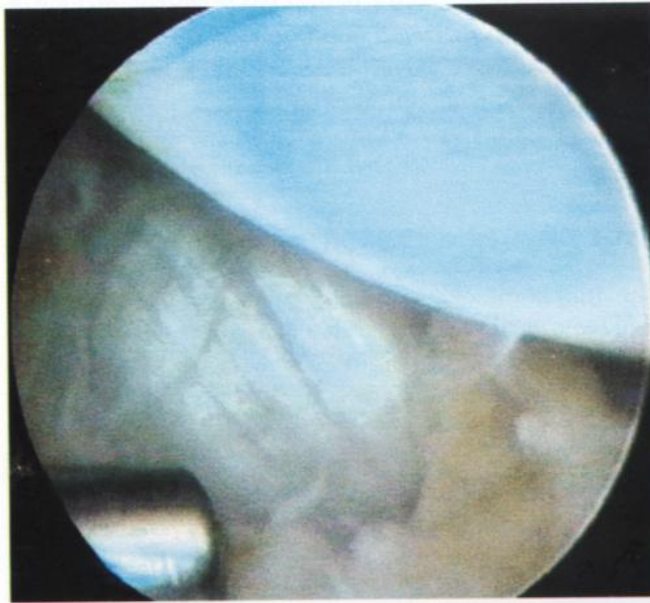


FIGURE 21.13 Rheumatoid synovium being resected. The area of synovial hypertrophy is progressively resected to expose more of the normal underlying tissues.

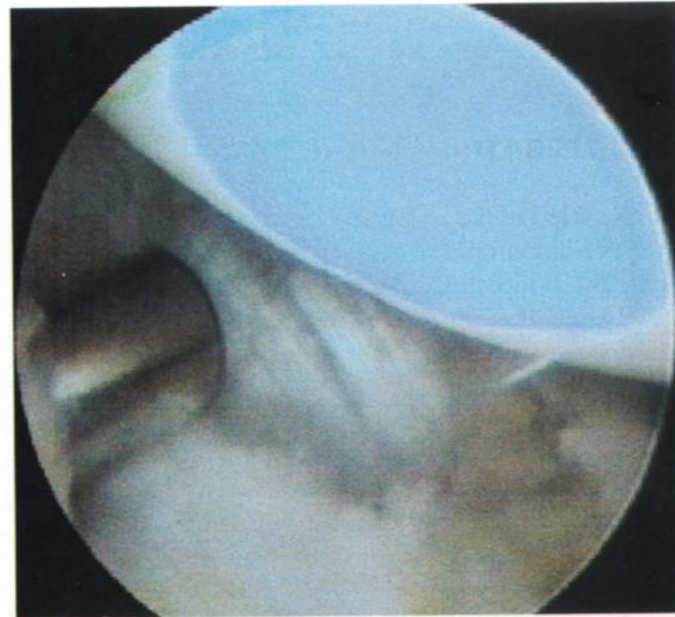


FIGURE 21.12 Rheumatoid synovium being resected. The small area of shiny normal tissue is seen below the margins of the synovium.

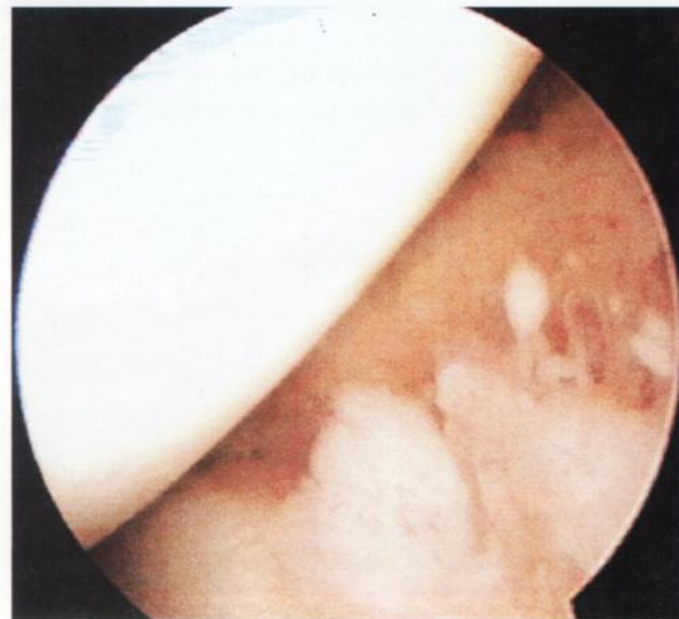


FIGURE 21.14 Villous hyperplasia in rheumatoid synovitis.



FIGURE 21.17 Diffuse pigmented villonodular synovitis. A complete anterior and posterior synovectomy is warranted.

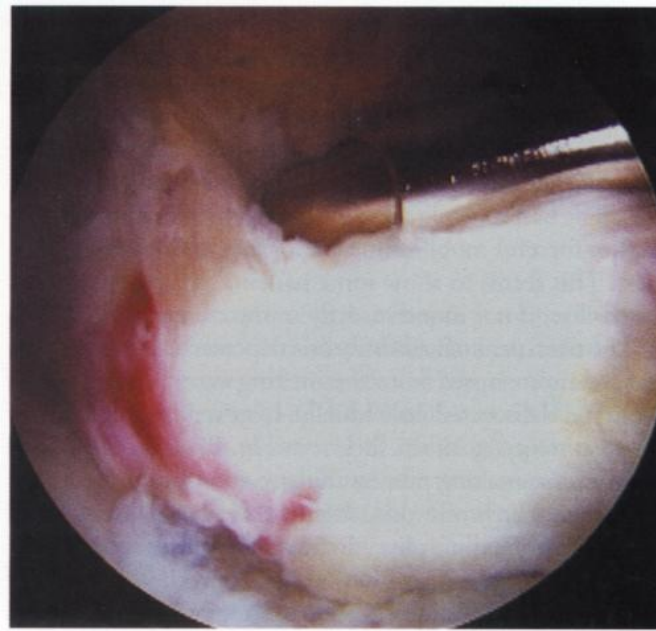


FIGURE 22.5 Arthroscopic view of a nodule of scar located anterior in the notch (cyclops lesion) after anterior cruciate ligament reconstruction.

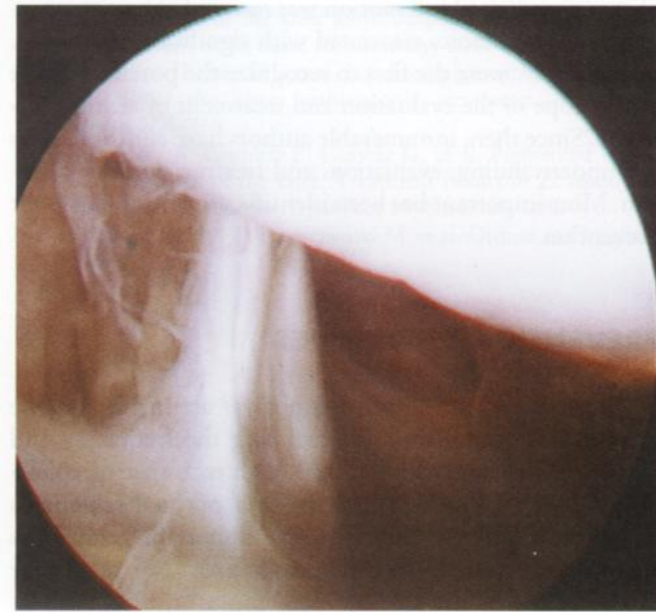


FIGURE 22.1 Isolated suprapatella adhesion, representing localized scarring, not arthrofibrosis.



Xơ hoá

FIGURE 22.8 Significant chondromalacia of the patella and femoral trochlea groove resulting from arthrofibrosis with patella baja.

Xơ hóa khoang trên bánh chè

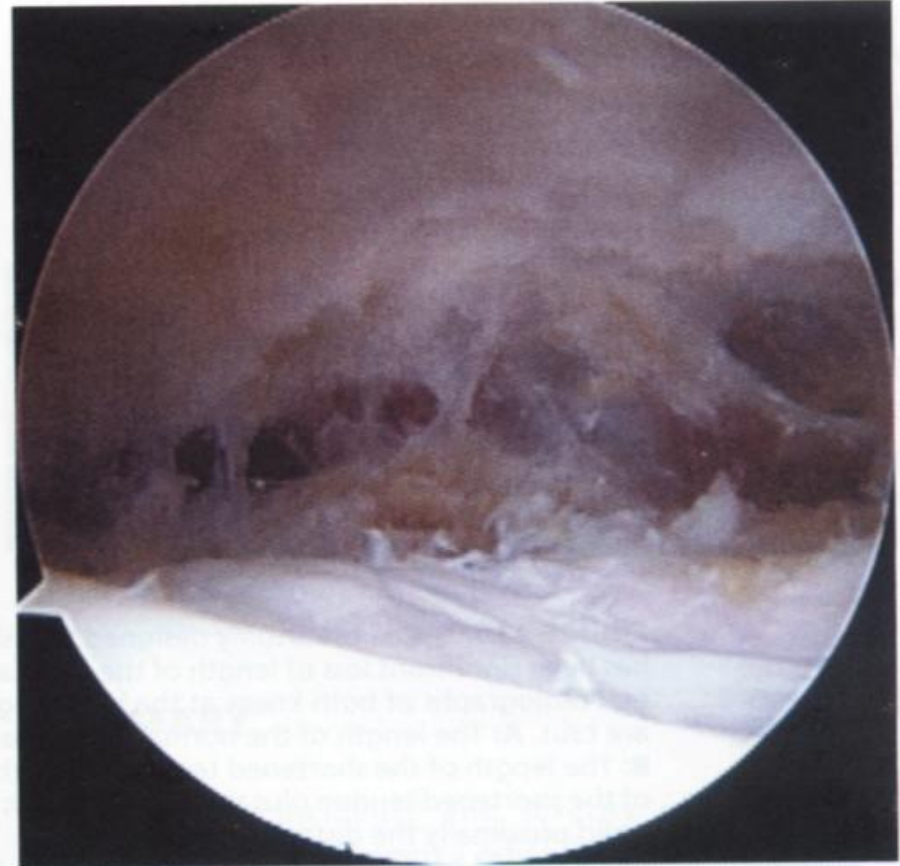


FIGURE 22.6 A: Marked obliteration of the suprapatella pouch by scar. **B:** Restoration of the suprapatella pouch by resection of the thick adhesive bands.

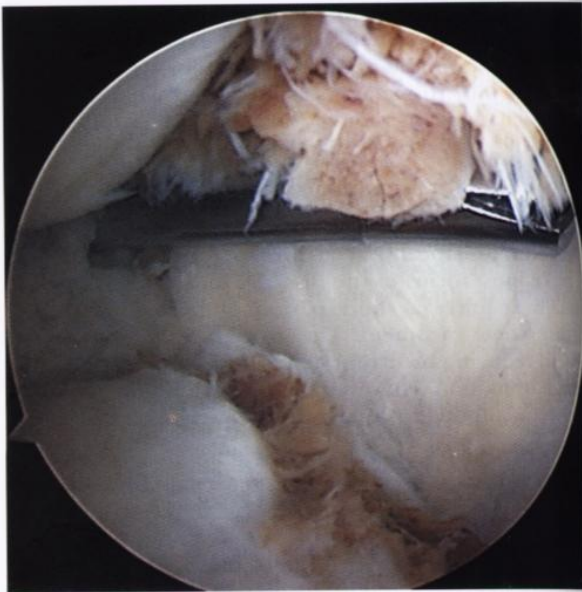


Figure 48-5 Arthroscopic view from the superolateral portal with the shaver inferomedial.

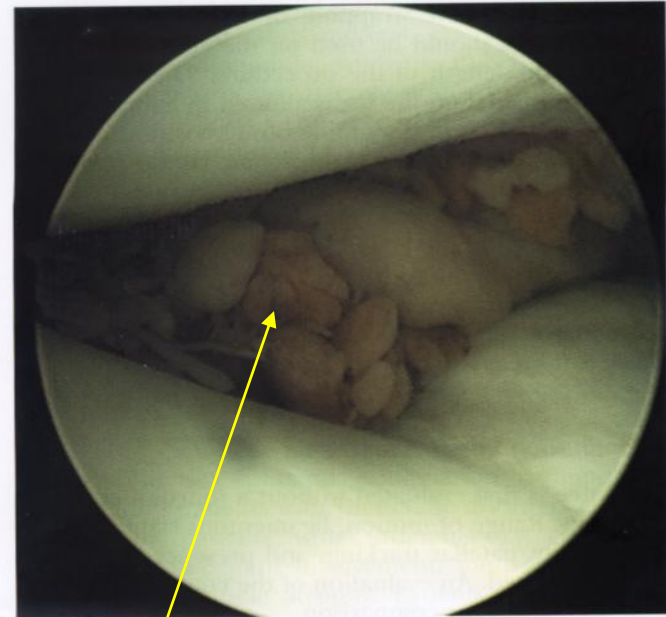


Figure 48-4 Initial scope appearance, with brownish synovium.

Hình nhìn từ phía trên ngoài với shaver ở phía dưới trong

Hoạt dịch có màu hơi nâu

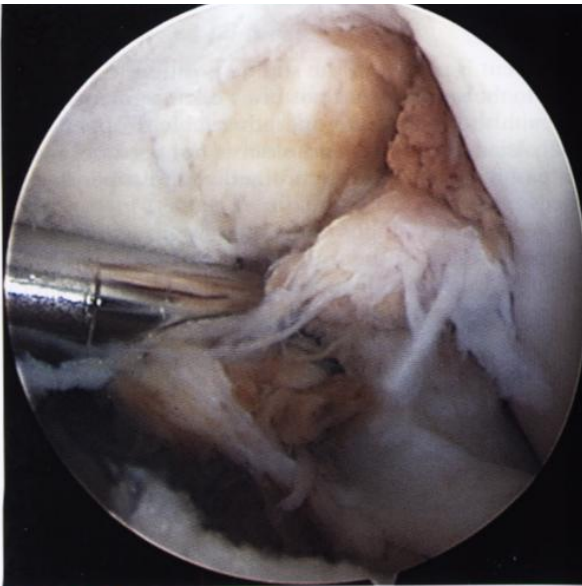


Figure 48-6 Arthroscopic view from the inferolateral portal with the shaver in the intercondylar notch.

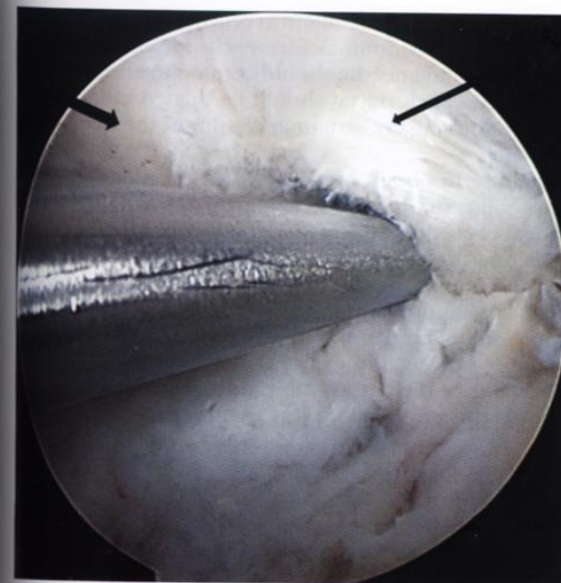
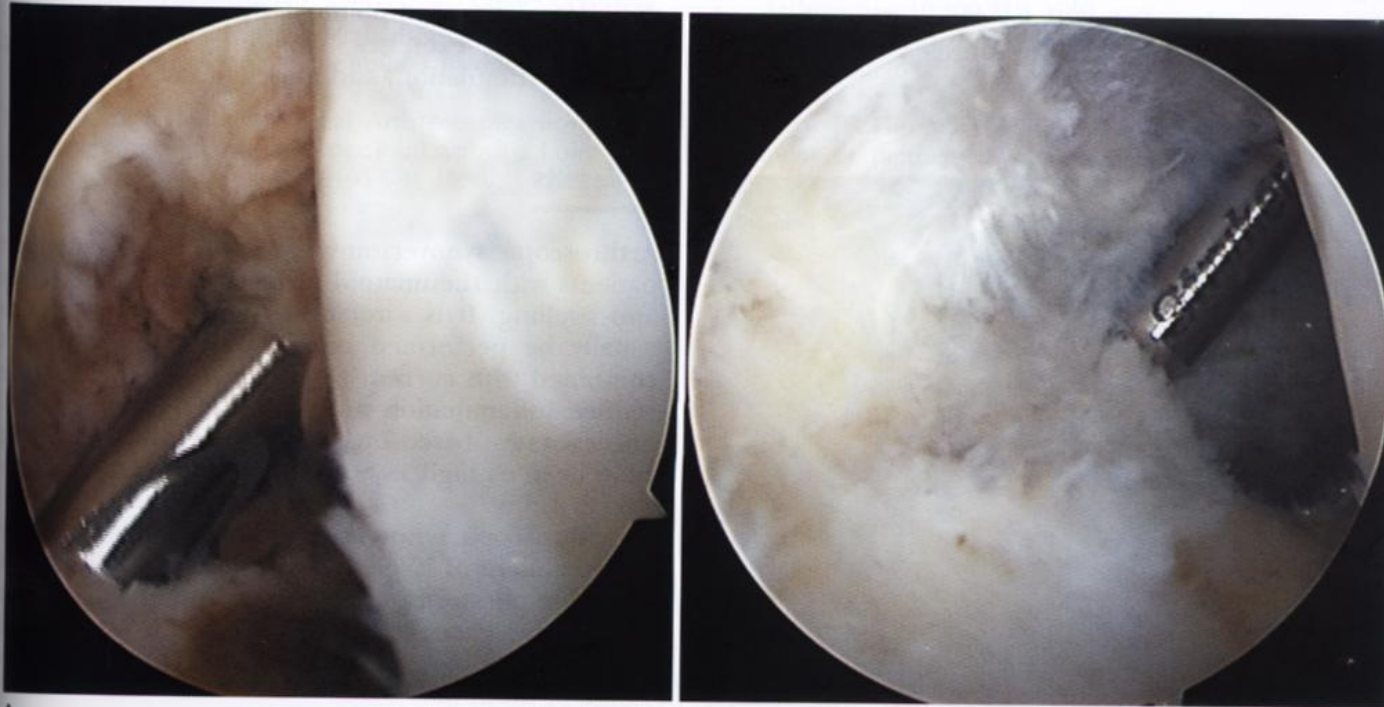


Figure 48-7 Blunt-tipped trocar used to enter the posterior compartment. The thin arrow indicates the posterior cruciate ligament, and the thick arrow depicts the medial femoral condyle.

Hình nhìn từ phía dưới ngoài với shaver ở khuyết gian lồi cầu



A **B**
Figure 48-8 Arthroscopic view of the posteromedial compartment before (A) and after (B) synovial resection.

Khoang sau trong trước (A) và sau (B) cắt hoạt mạc



Figure 48-9 Typical volume of synovium collected with total synovectomy.

Thể tích điển hình hoạt mạc thu thập khi cắt toàn bộ hoạt m

Nội soi khớp vai có thể hỗ trợ :

- Trật khớp vai tái hồi : khâu tăng cường bao khớp trước và sau
- Các tổn thương sụn viền ổ chảo (SLAP) : khâu lại sụn viền
- Rách chóp xoay : khâu lại chóp xoay
- Hội chứng chèn ép dưới mỏm cùng vai : giải áp và tạo hình mỏm cùng vai
- Viêm dính khớp vai : cắt lọc giải phóng khớp
- Xơ hoá khớp vai bằng nhiệt

Ngoài ra PTNS các khớp còn lại chủ yếu : gx đơn giản, các dị vật như trong viêm xương sụn bóc tách, sinh thiết bóc tách,...

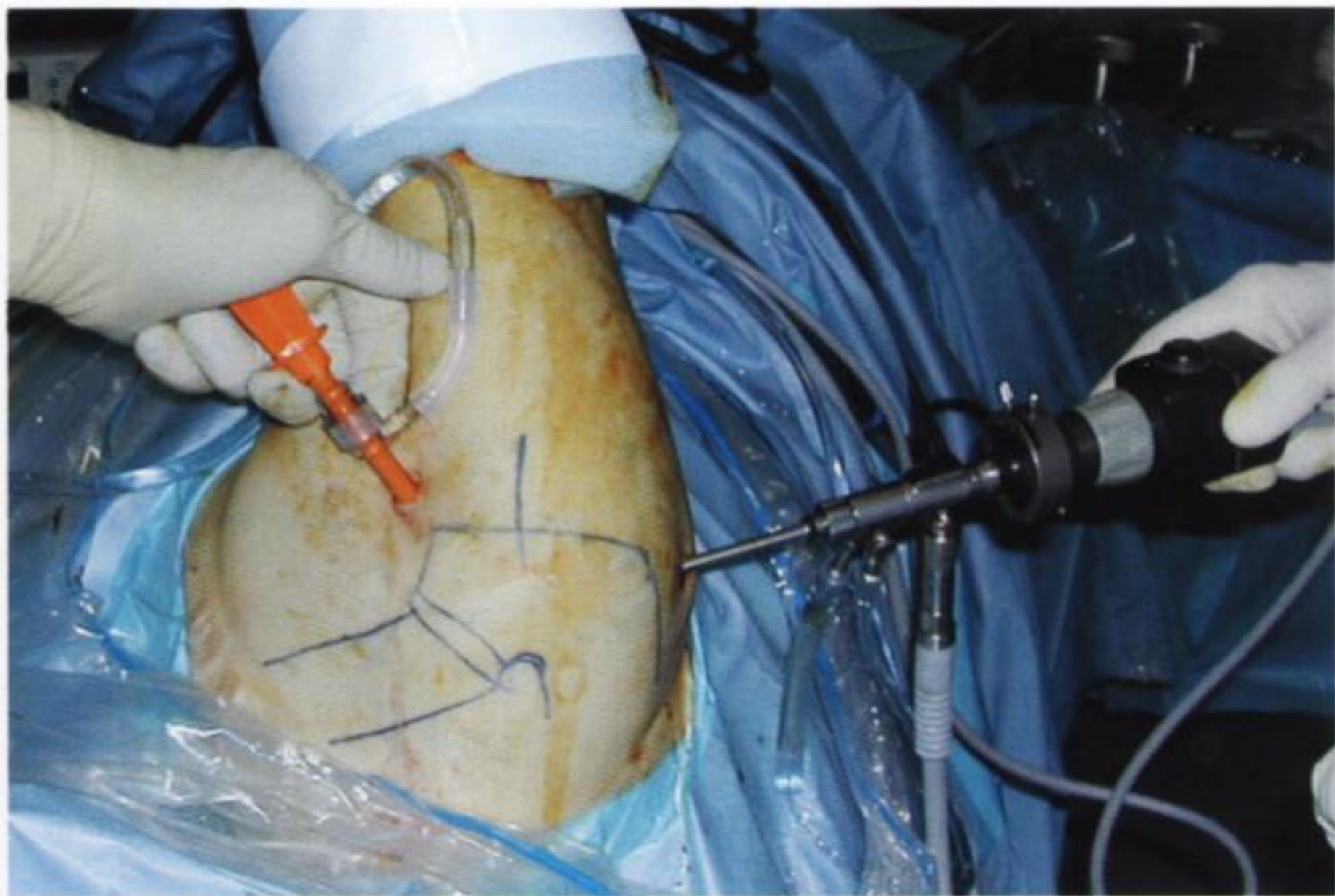


FIGURE 3-4. Insert the anterior-superior Crystal cannula (Arthrex, Inc., Naples, FL) fitted with an obturator along the path of the spinal needle.

SHOULDER: GLENOHUMERAL LIGAMENTS, LATERAL VIEW

Dây chằng ổ chảo cánh tay, nhìn bên ngoài

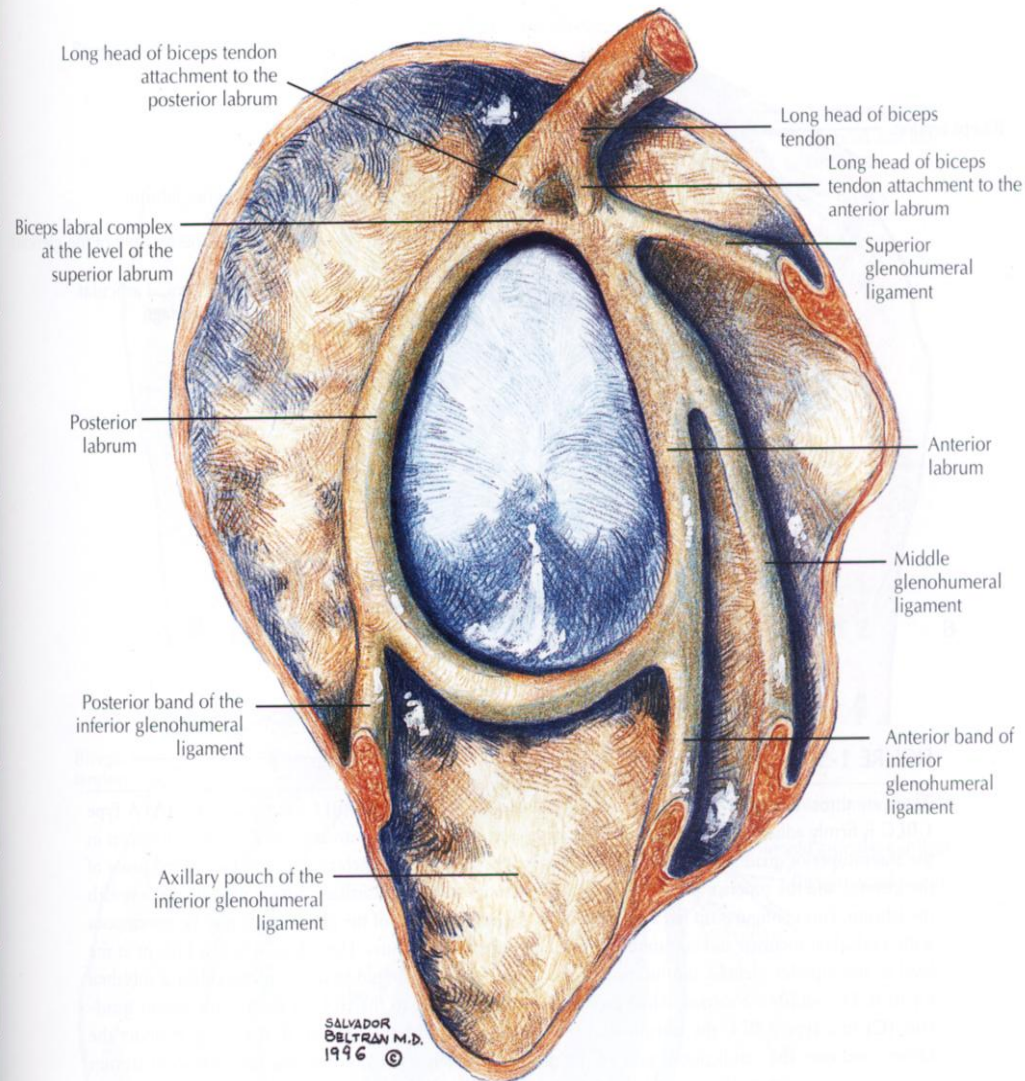


FIGURE 1-49B CONTINUED

For related MR, arthroscopy, and surgical anatomy images see Figures 1-72 through 1-77.

Nội soi khớp vai

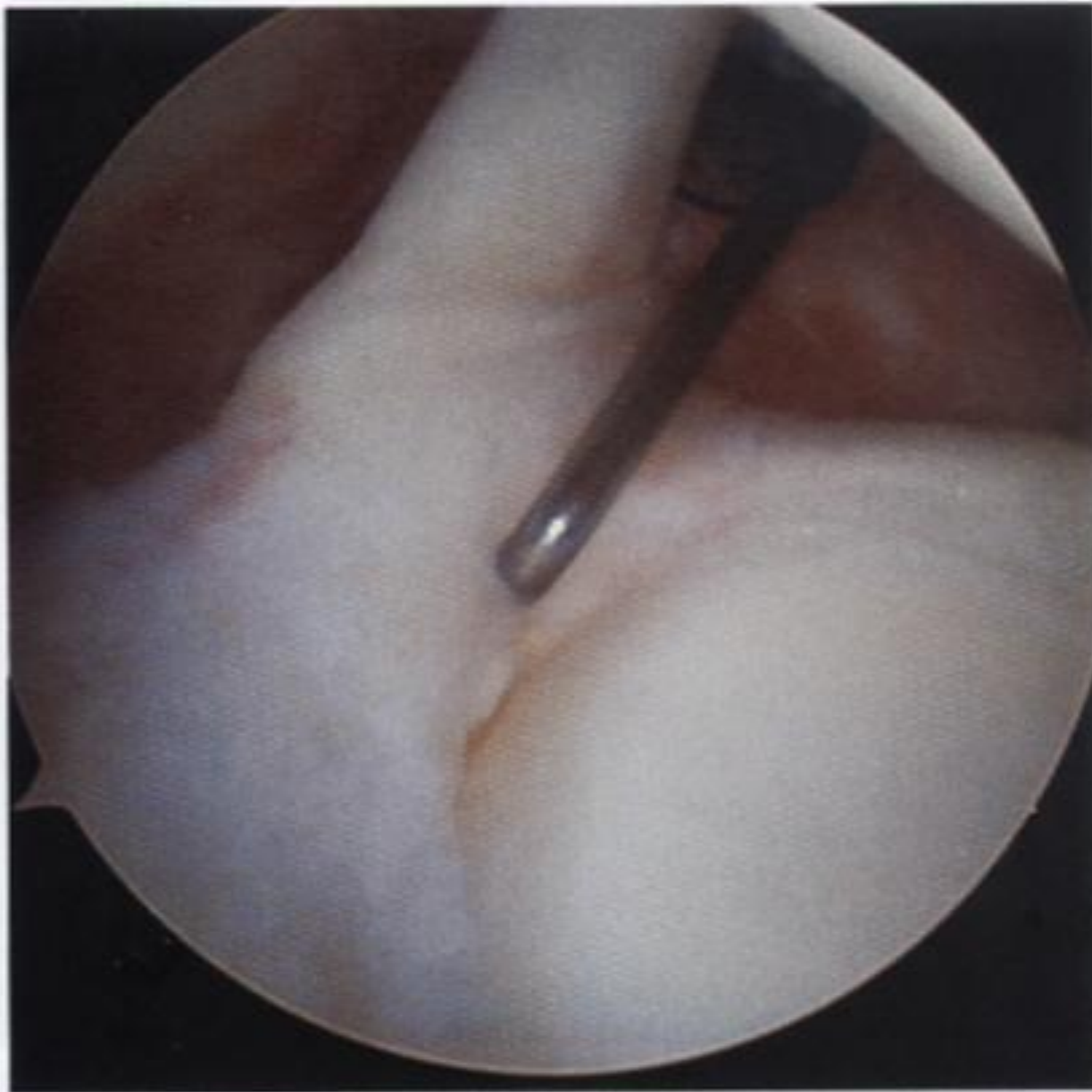
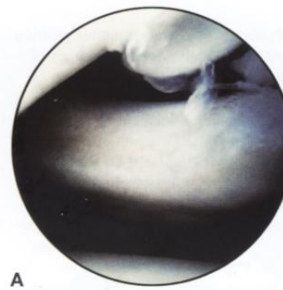


FIGURE 3-8. Use the probe to palpate the attachment of the superior labrum to the glenoid.

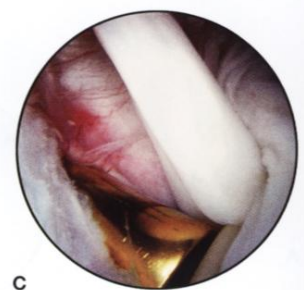
Tổn thương sụn viền, SLAP,...ở khớp vai



A



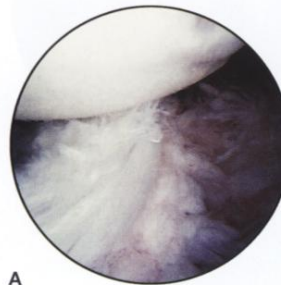
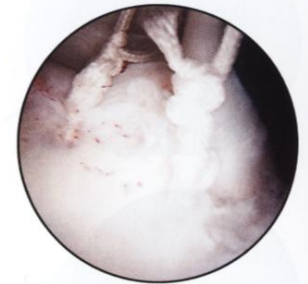
B



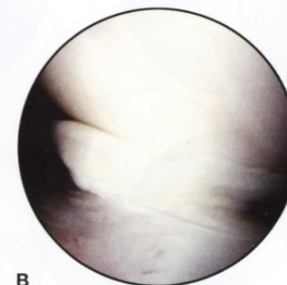
C

Color Plate 49-2 Labral tears. A, Type III. B, Type IV. C, Repair of type IV.

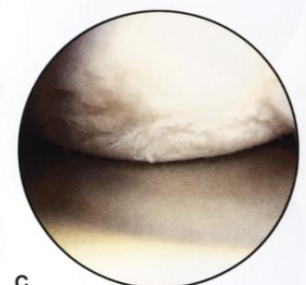
Color Plate 49-3 Completed SLAP repair using suture anchors placed at base of biceps and at posterior extension of lesion.



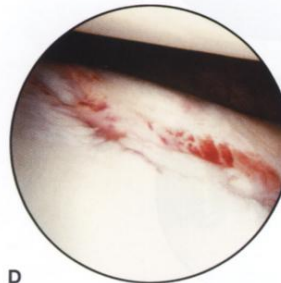
A



B



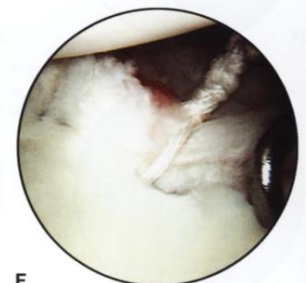
C



D



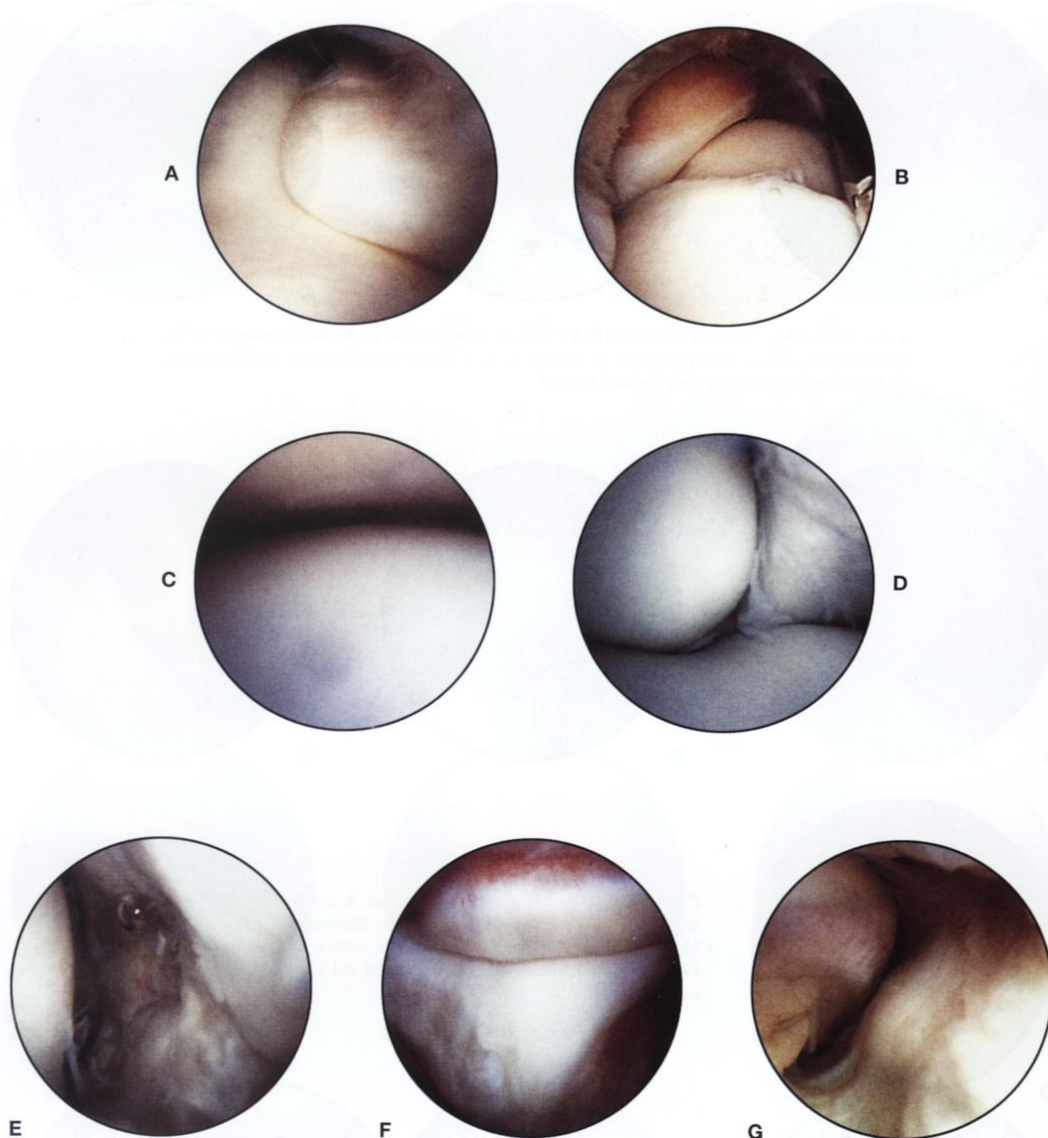
E



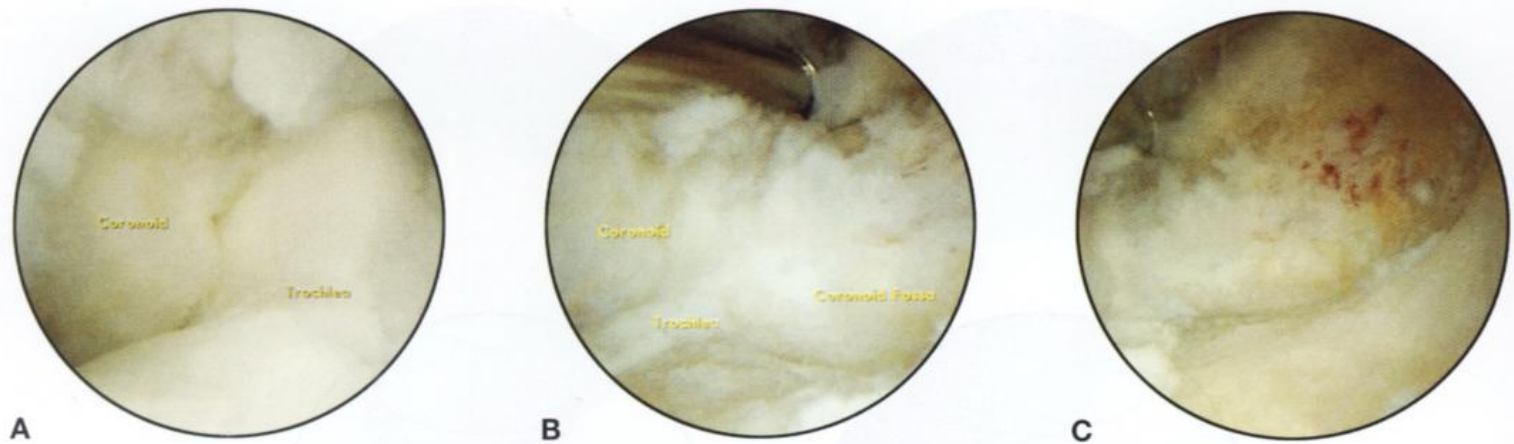
F

Color Plate 49-4 A, Fraying of labrum. B, Bucket-handle type labral tear. C, Chondromalacia of humeral head associated with chronic instability. D, Bankart disruption of capsuloligamentous complex. E, Glenoid rim fracture with disruption of capsuloligamentous complex. F, Arthroscopic stabilization.

Nội soi khớp khuỷu



Color Plate 49-8 A, View of medial side of elbow with coronoid process on right and trochlea on left. B, Anterior aspect of elbow viewed from medial portal with coronoid and trochlea in foreground and radiocapitellar joint in background with shaver just proximal to radiocapitellar joint. Annular ligament is clearly seen. C, Radiocapitellar joint with varus stress applied to expose undersurface of radial head. D, With elbow flexed 90 degrees, patient supine, and 2.7 arthroscope in direct lateral portal, articulation of three bones is seen. Radial head is superior left, ulna superior right, and capitellum inferior. E, Bare area of olecranon is right inside with trochlea on left. Scope in direct lateral portal. F, Posterior compartment viewed through posterolateral portal. Tip of olecranon is superior, trochlea is inferior, and olecranon fossa is in foreground. G, Medial gutter viewed through posterolateral portal with posterior aspect of ulnar collateral ligament on right and distal humerus on left.



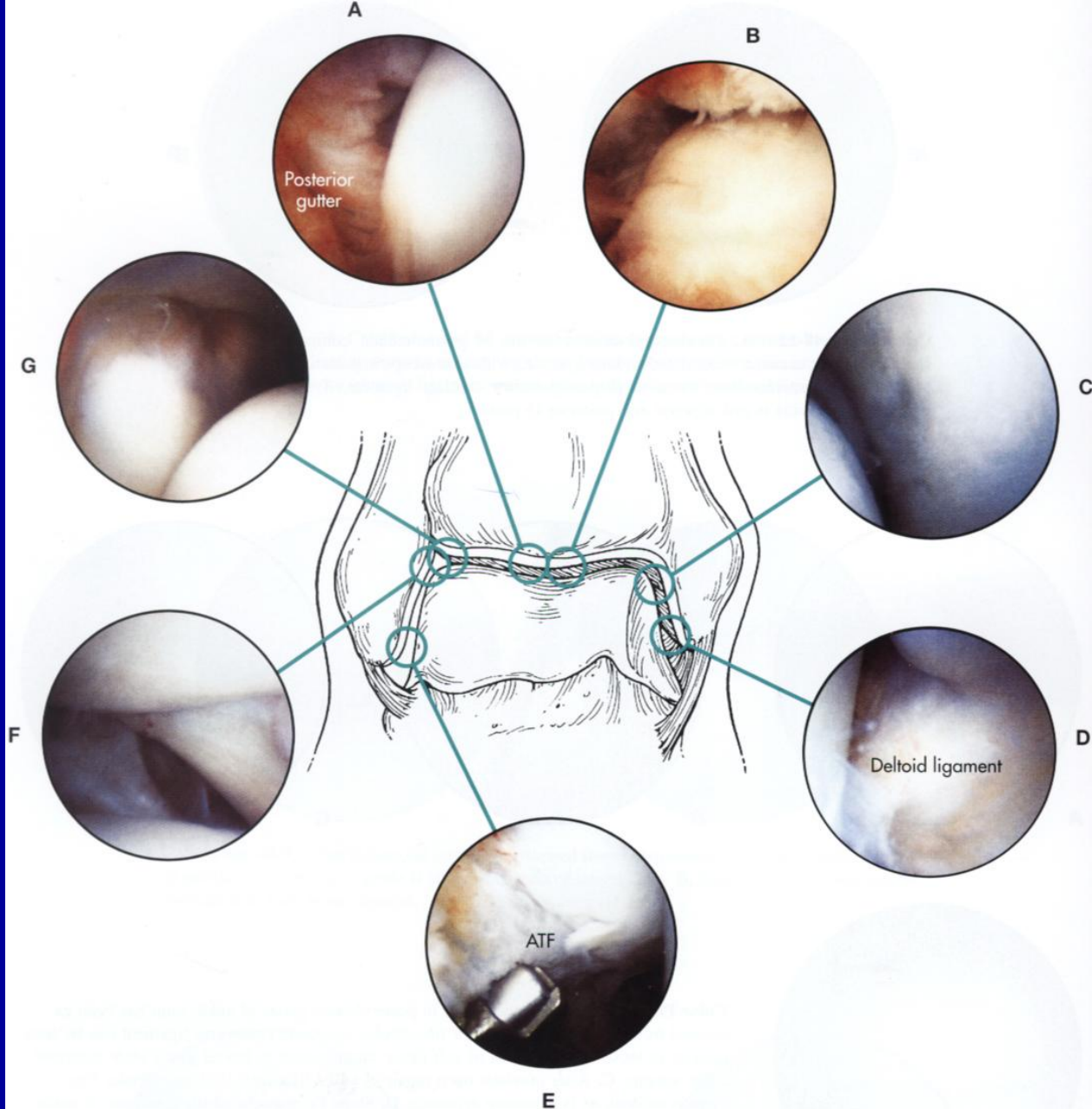
Color Plate 49-11 A, Arthrofibrotic joint with coronoid on left and trochlea on right and extensive fibrosis superiorly. B, After resection of fibrotic tissue and release of distal capsular insertion onto humerus. Note that coronoid fossa is filled by large osteophyte. C, Coronoid fossa after resection of osteophyte and recreation of fossa to allow elbow flexion.

Tổn thương xơ hóa ở khớp khuỷu



Color Plate 49-12 Extensive synovitis of anterior compartment in retired Major League pitcher with persistent pain, popping, and swelling of elbow. Partial synovectomy and removal of loose bodies were performed.

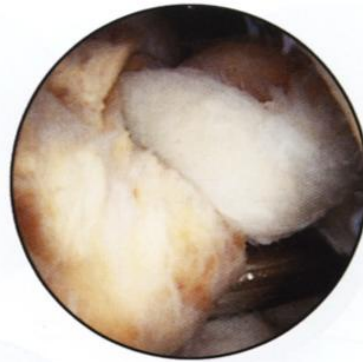
Nội soi khớp cổ chân



Color Plate 48-14 A, Posterior gutter viewed from posterior portal. B, Central talus. C, Medial tibiotalar articulation. D, Deltoid ligament and medial gutter. E, Lateral gutter. F, Tibiofibular articulation showing posteroinferior tibiofibular ligament and more inferior and laterally transverse ligament. G, Lateral talomalleolar articulation.

Tổn thương khớp cổ chân

A

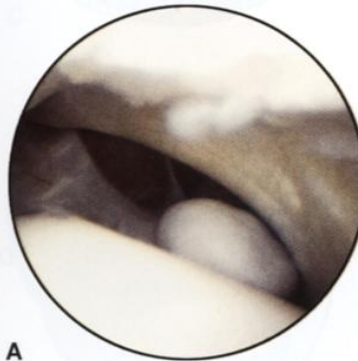


B

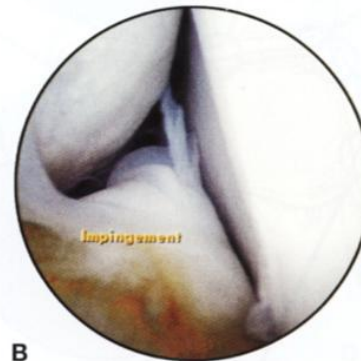


Color Plate 48-12 A, Localized nodular synovitis of posteromedial compartment of knee. B, Arthroscopic excision of localized nodular synovitis with arthroscope in posteromedial portal and probe through intercondylar notch to palpate posterior cruciate ligament. Synovial attachment of nodular synovitis is just superior and posterior to probe.

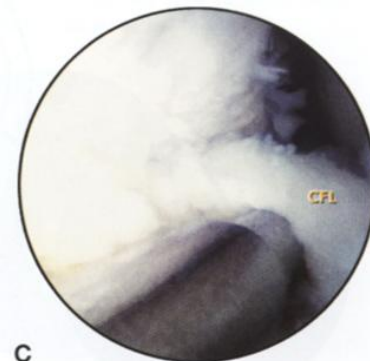
A



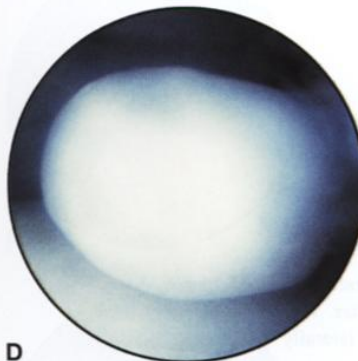
B



C



D



Color Plate 48-13 A, Loose body in posterolateral gutter of ankle joint has been expressed from behind posteroinferior tibiofibular ligament. Transverse ligament can be seen inferior to loose body. B, Area of soft tissue impingement in lateral gutter after recurrent ankle sprains. C, After previous open repair of ankle ligaments. Calcaneofibular ligament is evident, as is extensive synovitis. D, Stage IV osteochondritis dissecans of ankle with loose osteochondral fragment.

N.cứu Bắc Mỹ : 0,56-2,4% / khâu sụn chêm ; 1,8% tái tạo dc ; 5,3%/ khâu bao khớp trước khớp vai

- **B/c trước mổ :**

- bc gây mê

- bc tại chỗ :

- **TK** : khớp gối (nhánh dưới bánh chè Tk hiển trong, ga rô lâu,...), vai (đám rối,...), khuỷu (Tk quay, trụ...), cổ chân (Tk hiển ngoài), háng (Tk tọa)

- **cơ học** : do co kéo, dạng khép gối,... : tổn thương dc, sụn chêm, sụn khớp,...

- gãy dụng cụ

Biến chứng trong phẫu thuật nội soi

- Bc sau mổ :

- Thuyên tắc mạch
- bc tại chỗ : nhiễm trùng khớp,viêm khớp không nhiễm trùng, tràn máu trong khớp,dò hoạt mạc, hội chứng chèn ép khoang
- bc vùng : hc RLDD (mổ lâu,kiểu pt,khớp bị pt,nhiều đường vào,ga rô hơi & yếu tố tâm lý)

Chăm sóc bệnh nhân phẫu thuật nội soi

Cũng có nguy cơ pt nên chuẩn bị kỹ, nhất là mổ trong ngày

- Chẩn đoán chính xác & xác định pp điều trị
- Giải thích bn : tình trạng, bệnh tật, cách mổ, nguy cơ và bc pt
- XNTP và khám tiền mê như mổ hở
- Soạn mổ chi như mổ hở
- Sau mổ cần theo dõi bc sau mổ
- thay băng dễ dàng hơn
- giảm đau tuy ít nhưng vẫn có
- VLTL theo từng loại pt
- Tái khám và đánh giá kết quả cho bn

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