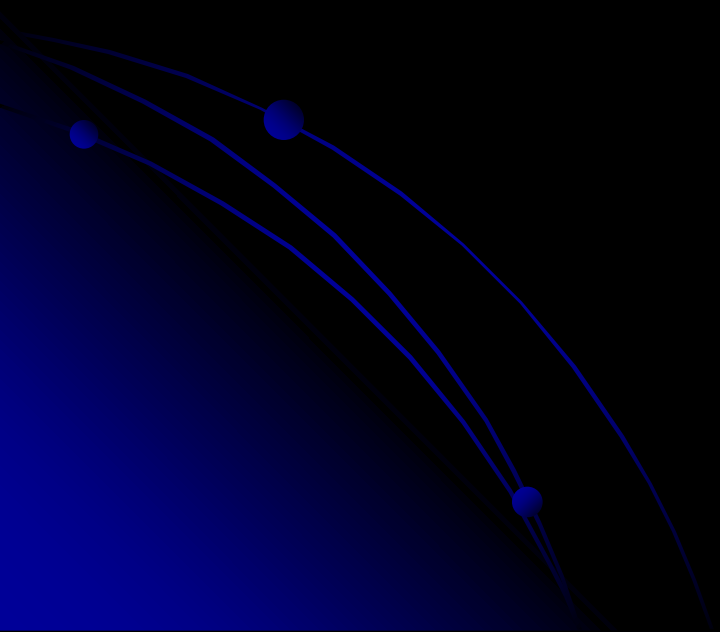


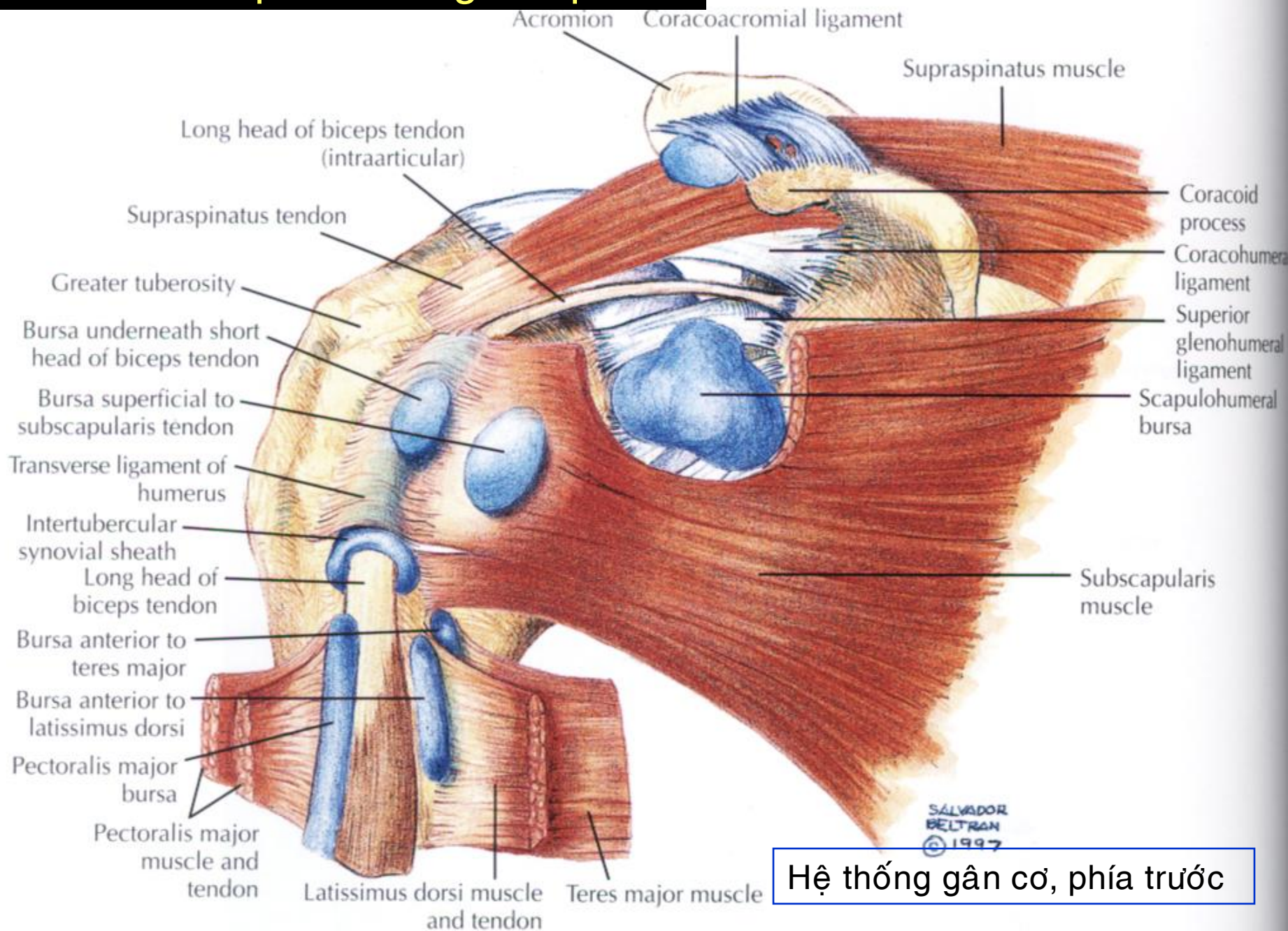
NỘI SOI KHỚP VAI

BS TĂNG HÀ NAM ANH
BỘ MÔN CHẨN THƯƠNG CHỈNH HÌNH
ĐẠI HỌC Y DƯỢC TP HỒ CHÍ MINH

CÁC MỐC GIẢI PHẪU



Phần 1. Giải phẫu vùng khớp vai



Hệ thống gân cơ, phía trước

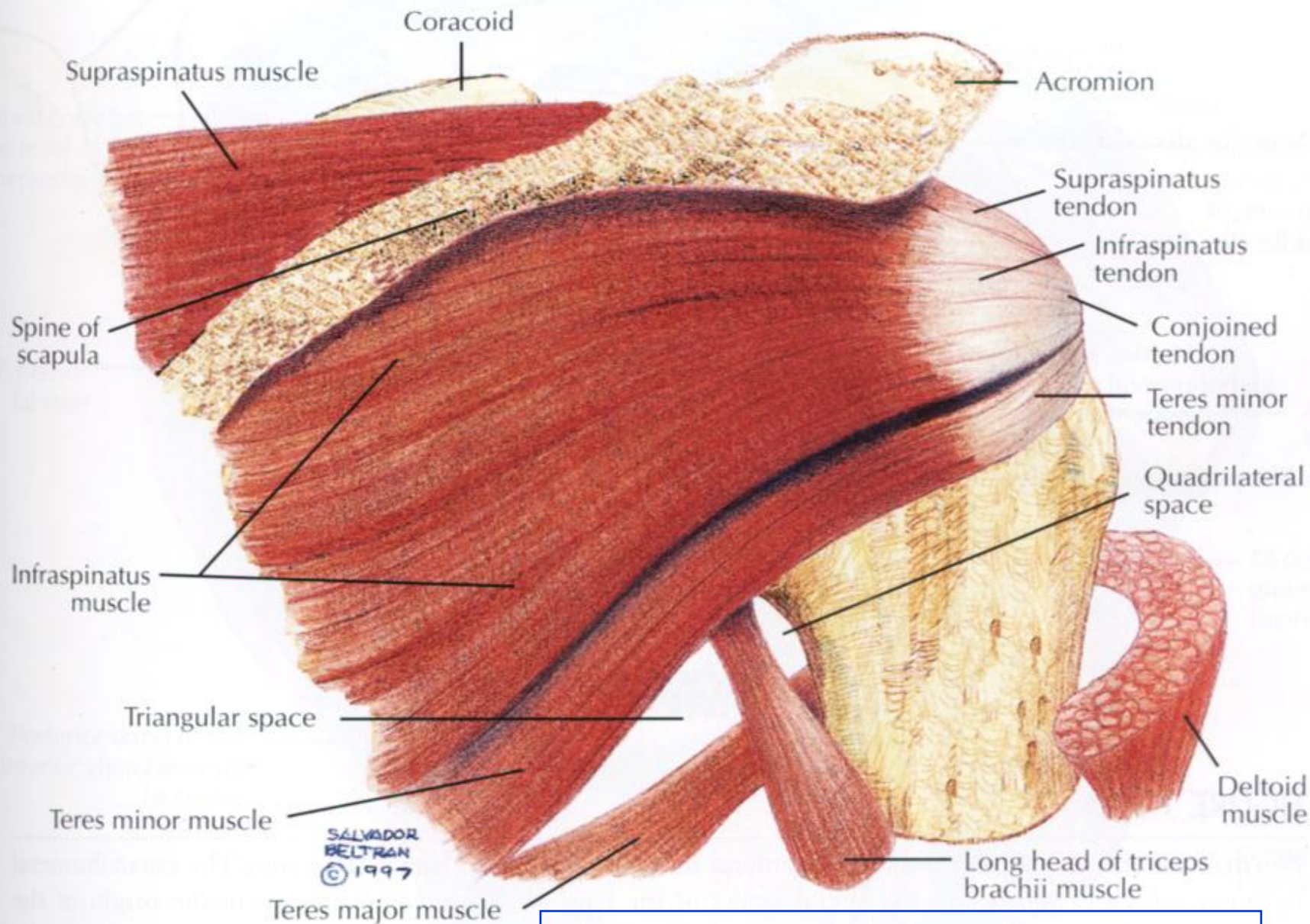


FIGURE 1-48B CONTINUED

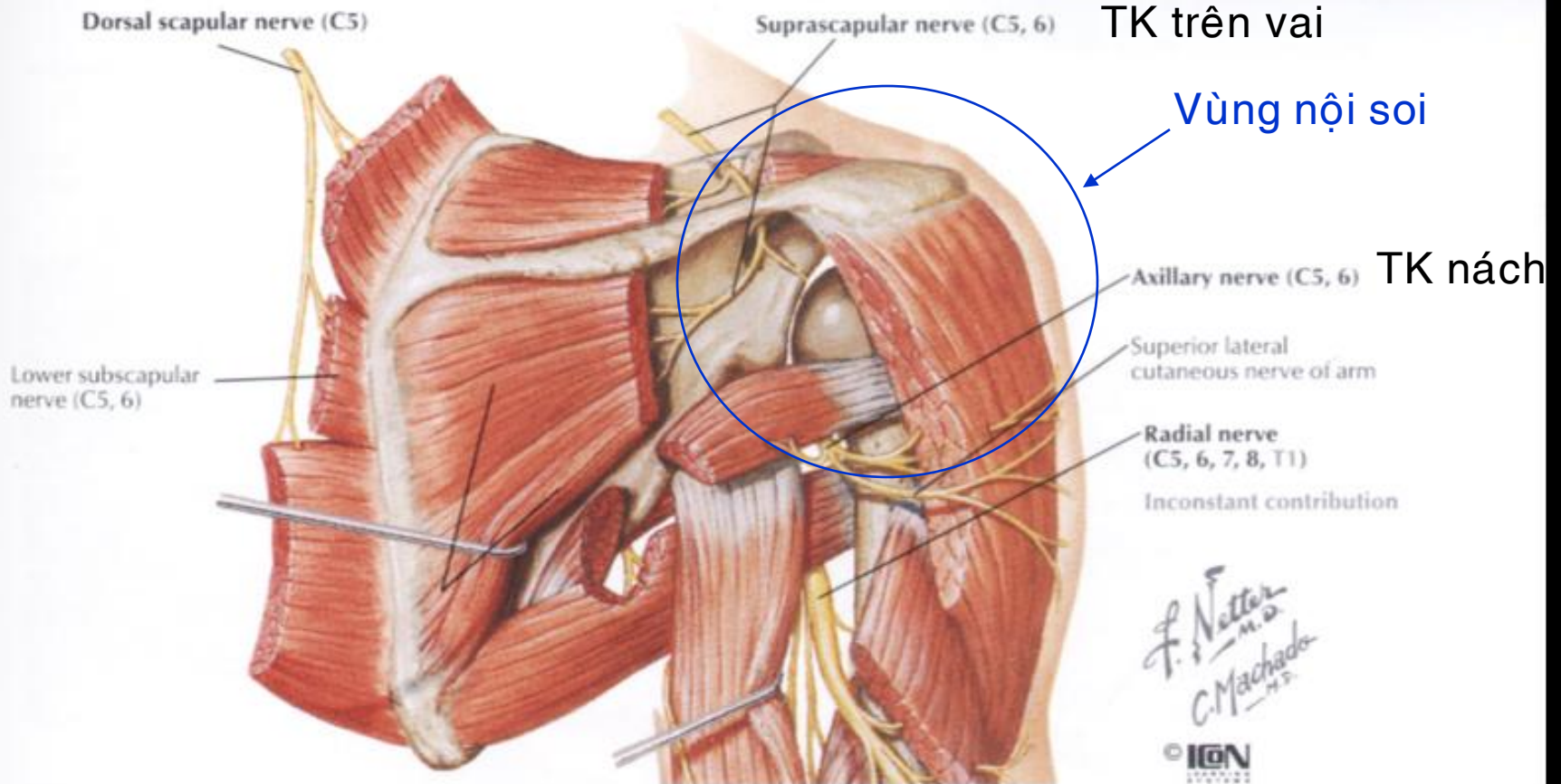
For related MR, arthroscopy, and surgical anatomy images see Figures 1-64 through 1-68.

Hệ thống gân cơ vùng vai, phía sau

Thần kinh vùng khớp vai

NERVES

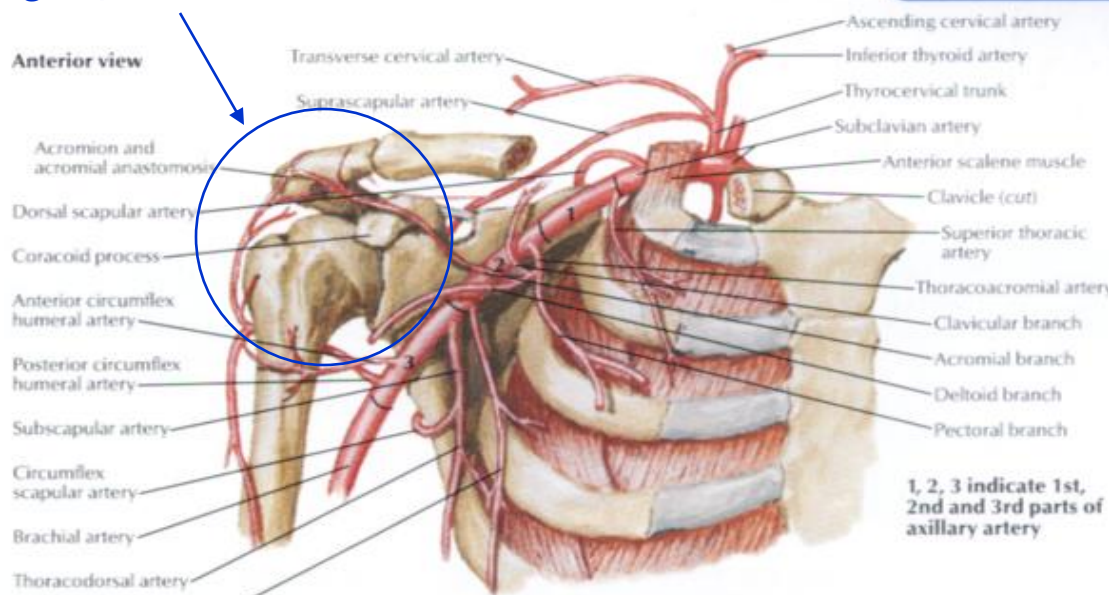
SHOULDER



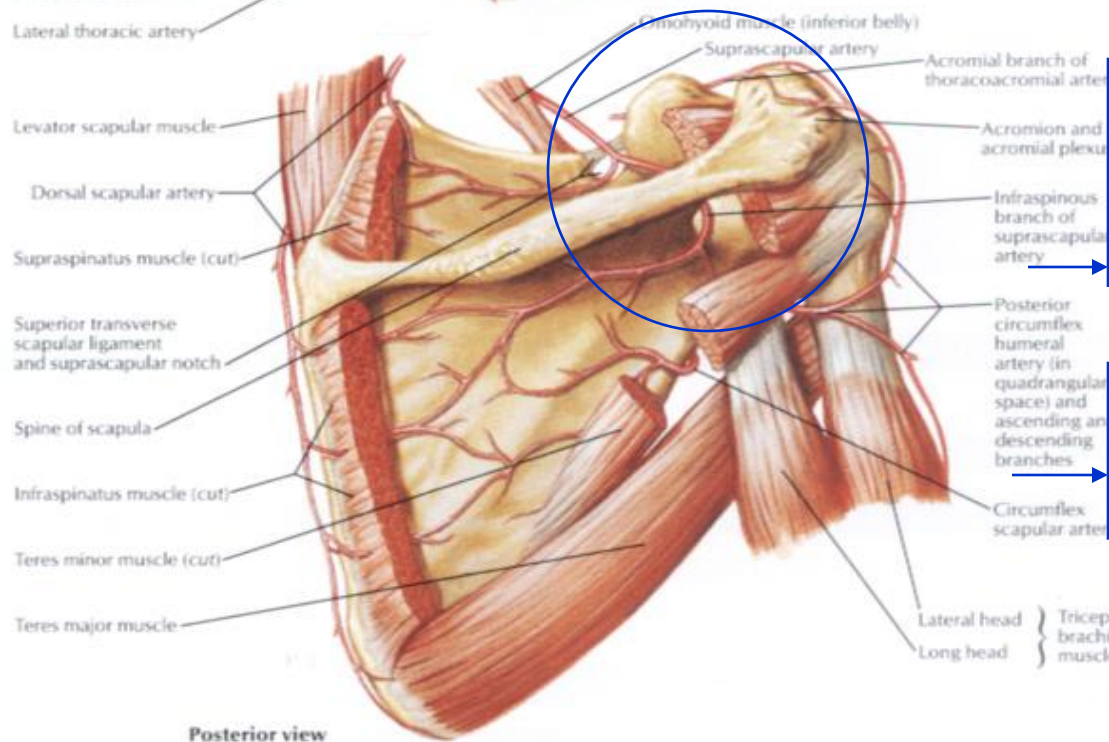
Vùng nội soi

ARTERIES

SHOULDER



Nhánh ngực mồm
Nhánh đòn
Nhánh mồm
Nhánh deta



Nhánh
dưới gai
của ĐM
vai trên

ĐM mũ
cánh tay
trước, sau

F. Netter
M.D.
C. Machado
M.D.
© IGM
ILLUSTRATIONS

Thông nối mồm vai và
đòn

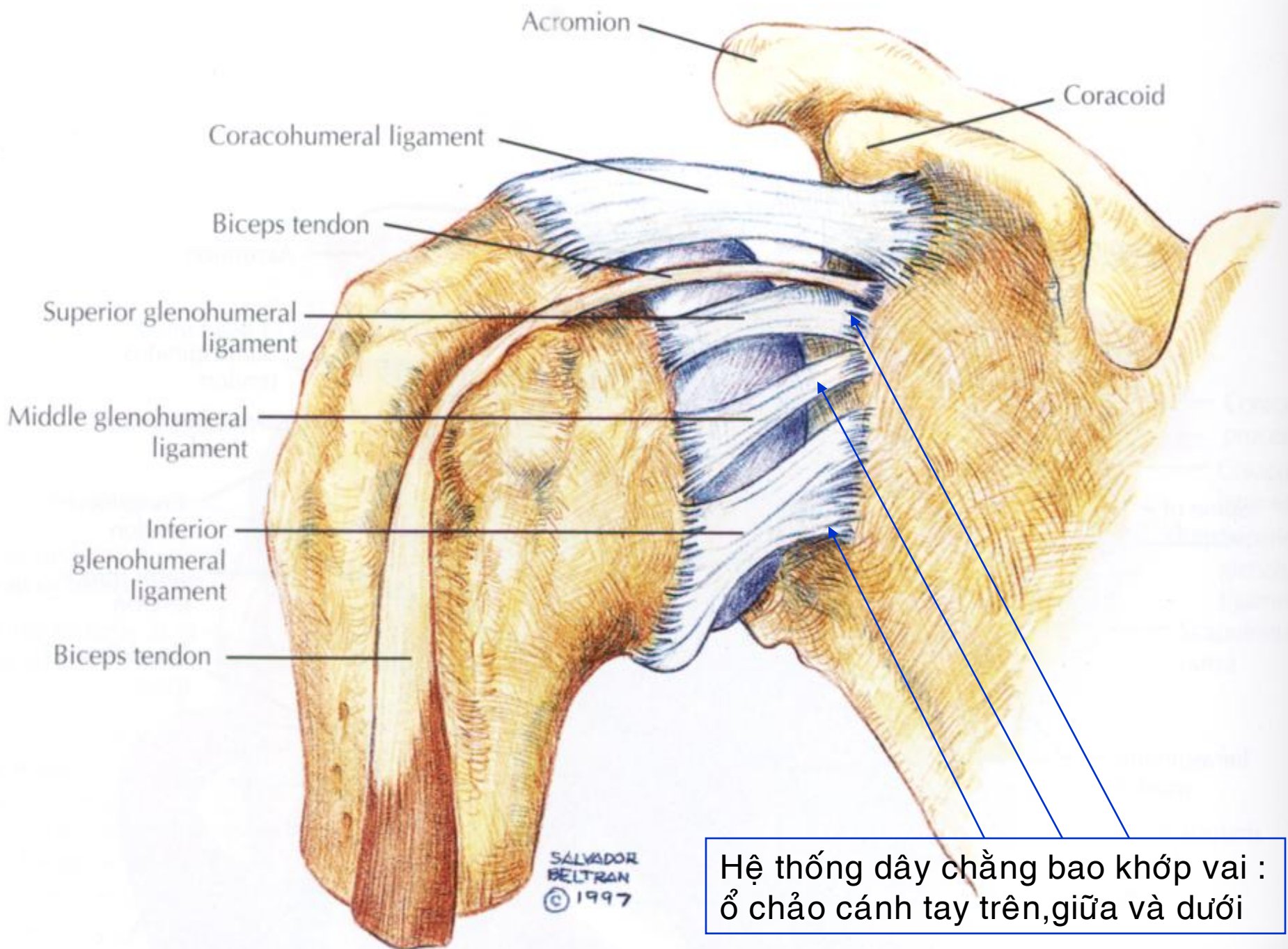
ĐM vai sau

ĐM mũ cánh tay trước

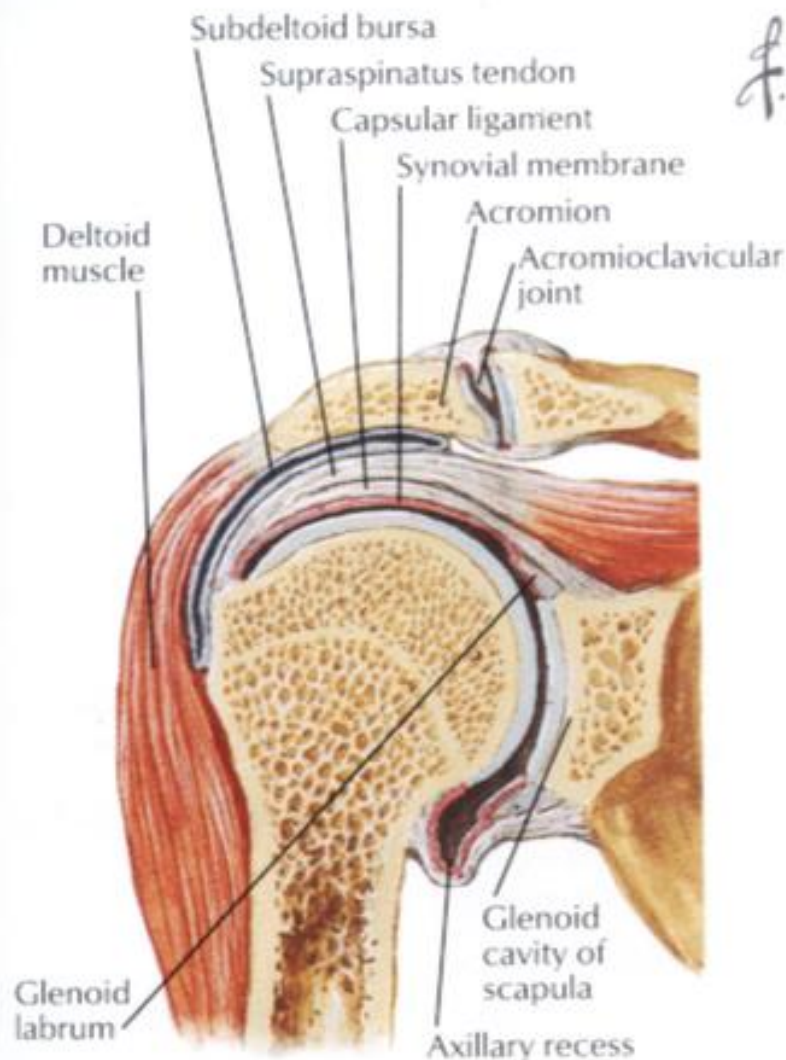
Đm mũ cánh tay sau

ĐM dưới vai

ĐM mũ vai



Hệ thống dây chằng bao khớp vai :
ổ chảo cánh tay trên, giữa và dưới



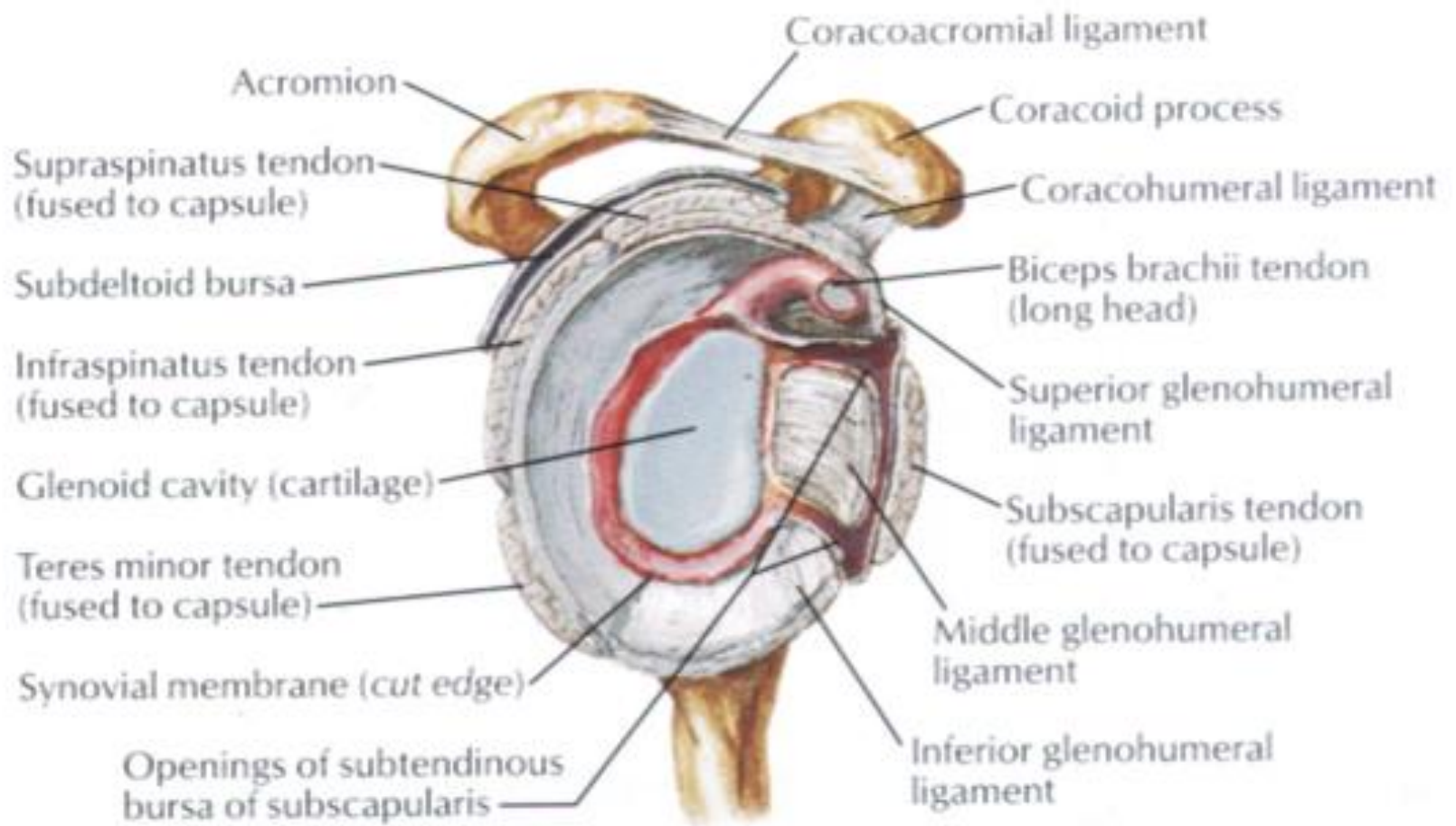
Coronal section through joint

Hệ thống gân cơ và dây chằng (mặt cắt trán)

* cơ chóp xoay (dưới vai, trên gai, dưới gai và tròn bé)

* dây chằng : bao khớp, ổ chảo cánh tay, quạ cánh tay và sụn viền

STRUCTURE	FUNCTION
MUSCLES	
ROTATOR CUFF	Holds humeral head in glenoid
Supraspinatus	Most commonly torn tendon
Infraspinatus	
Teres Minor	
Subscapularis	Anterior support
LIGAMENTS	
Capsule	Rotator cuff tendons fused to it
Glenohumeral	Superior: resists inferior translation
	Middle: resists anterior translation
	Inferior: resists ant/inf translation
Coracohumeral	Resists post/inferior translation
Labrum	Deepens glenoid



Joint opened: lateral view Hình bên khớp vai mở

SHOULDER: GLENOHUMERAL LIGAMENTS, LATERAL VIEW

Dây chằng ổ chảo cánh tay, nhìn bên ngoài

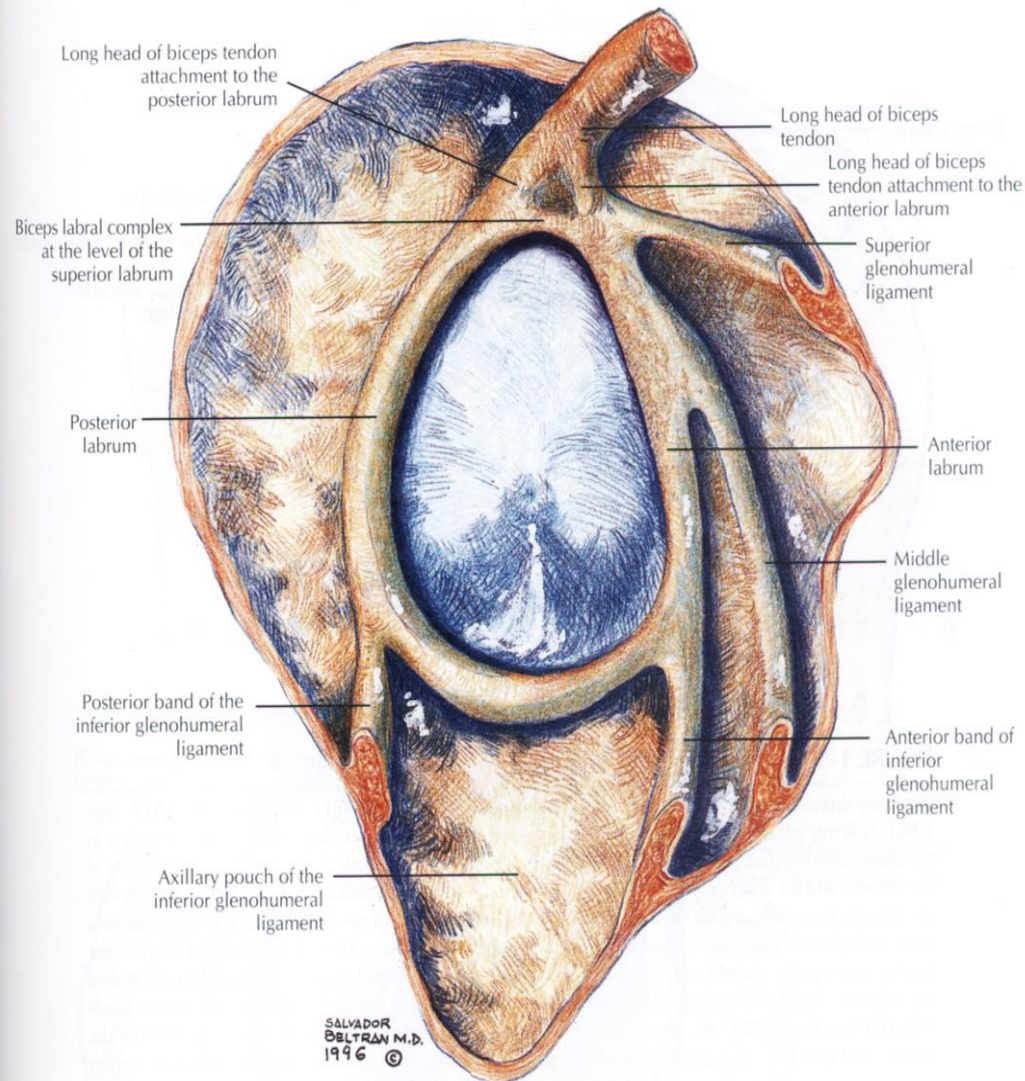
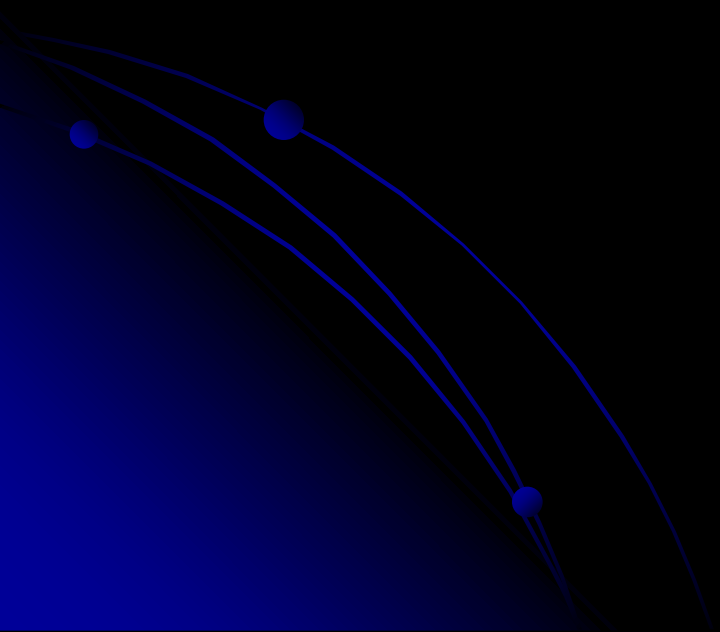


FIGURE 1-49B CONTINUED

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

ĐƯỜNG VÀO NỘI SOI KHỚP VAI



Phần 1(tt). Các lỗ vào dùng trong nội soi khớp vai

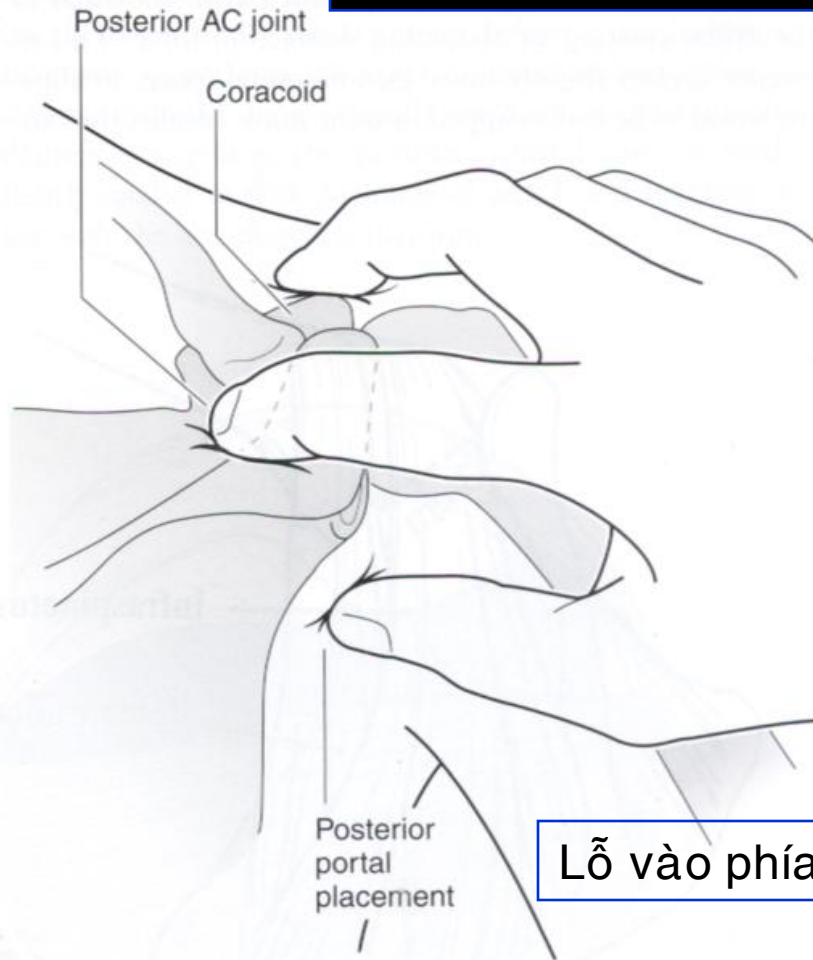


FIGURE 27.6 The Romeo Three-Finger Shuck. A method for ensuring correct placement of the posterior portal involves palpation of the bony landmarks with the same hand as the shoulder being operated on. The middle finger is placed on the coracoid process, the index finger is placed into the notch directly posterior to the acromioclavicular joint and anterior to the scapular spine, and the thumb then feels for the "soft spot," which is the muscular interval between the infraspinatus and teres minor muscle groups.

Lỗ vào phía sau

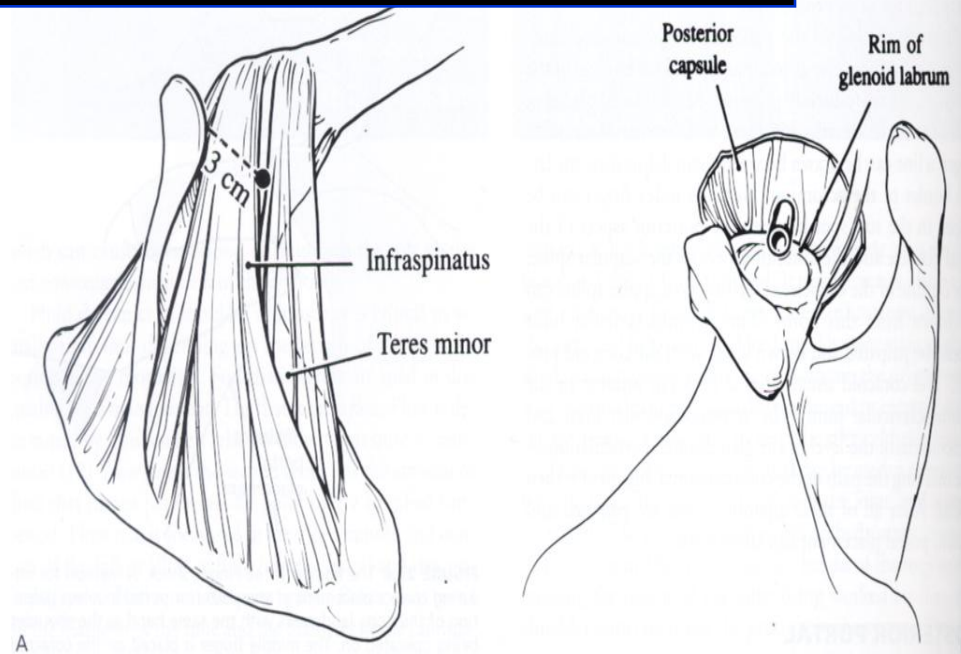


FIGURE 27.7 **A:** Posterior portal placement through the infraspinatus and teres minor interval in the lateral decubitus position. **B:** Intraarticular view of posterior portal in the lateral decubitus position.

PP '3 ngón tay Romeo' xác định lỗ vào phía sau : ngón giữa nơi móm quạ, ngón trỏ ngay khuyết sau khớp móm cùng đòn và ngón cái ở 'điểm mềm' là khoảng gian cơ dưới gai và tròn bé

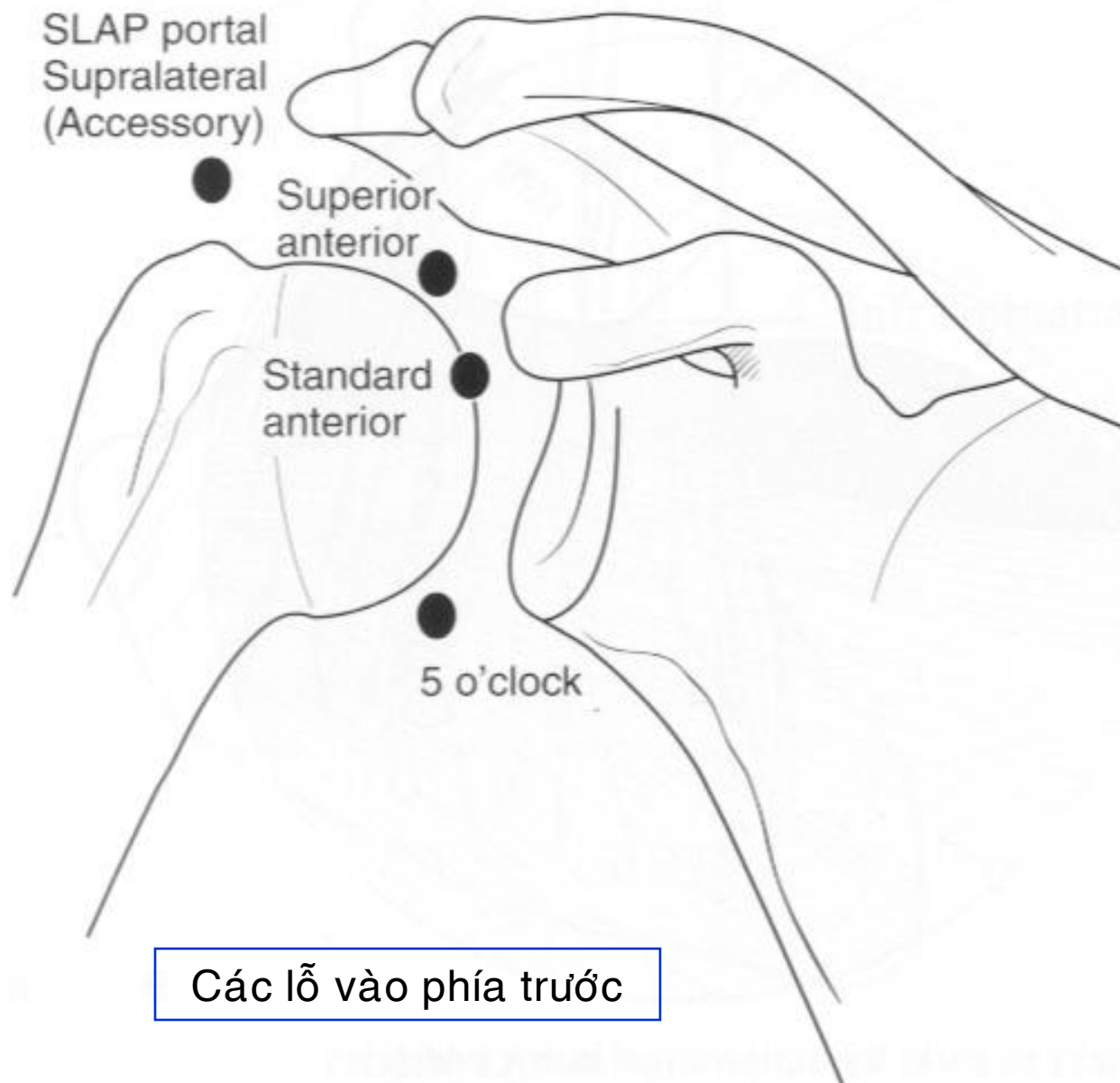


FIGURE 27.10 Anterior portals.

Cách xác định lỗ vào phía trước

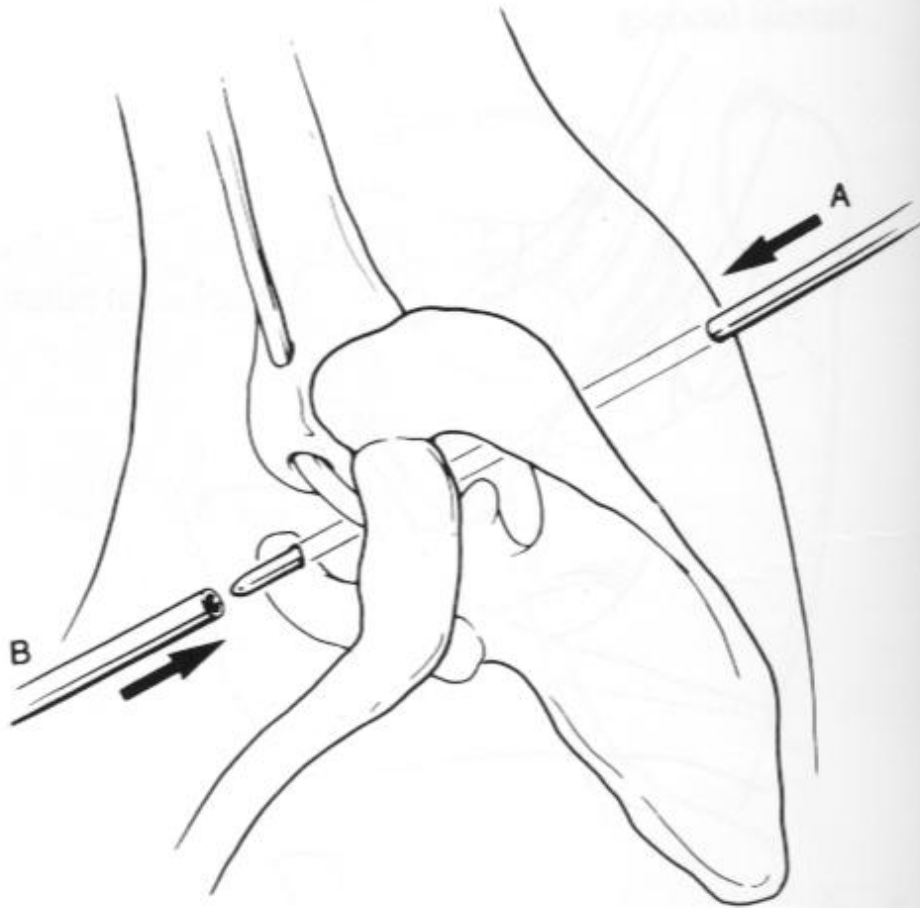


FIGURE 27.12 **A:** Rod being directed anteriorly through the skin. **B:** Retrograde placement of an arthroscopic cannula into the joint over a Wissinger rod.

Biceps tendon

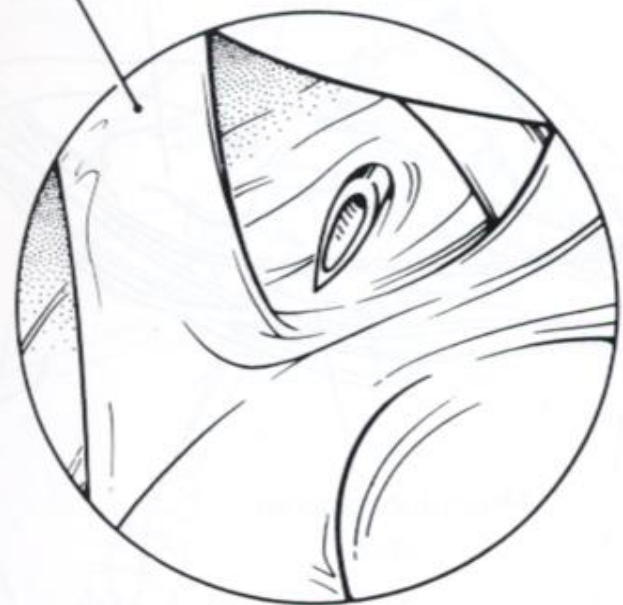


FIGURE 27.13 Intraarticular view of a spinal needle entering the anterior capsule at the proper site for the anterior portal.

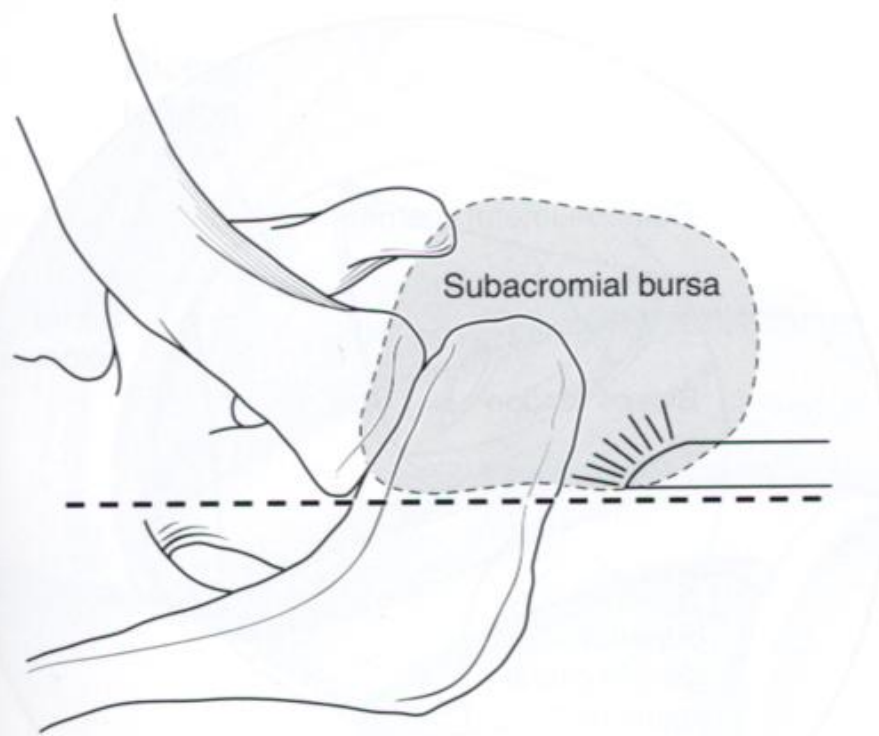


FIGURE 27.8 The subacromial bursa is an anterior structure.

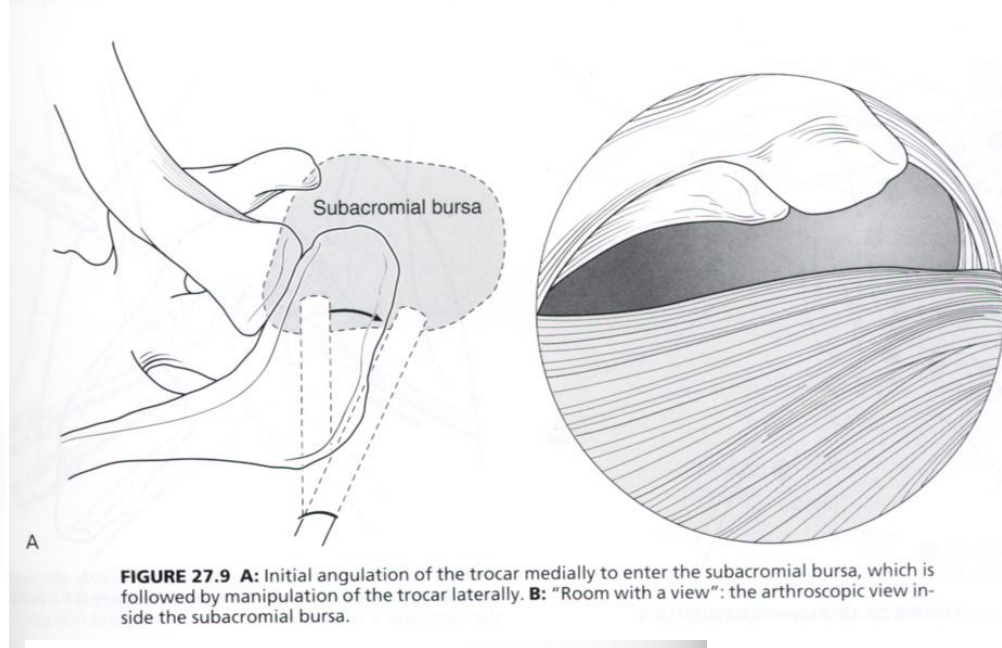


FIGURE 27.9 A: Initial angulation of the trocar medially to enter the subacromial bursa, which is followed by manipulation of the trocar laterally. **B:** "Room with a view": the arthroscopic view inside the subacromial bursa.

• Khoảng bursa dưới mỏm cùng là 1 cấu trúc phía trước

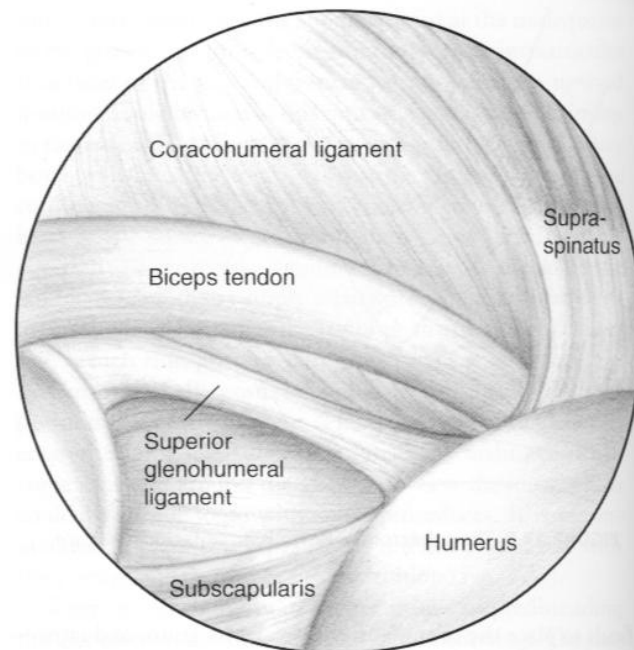
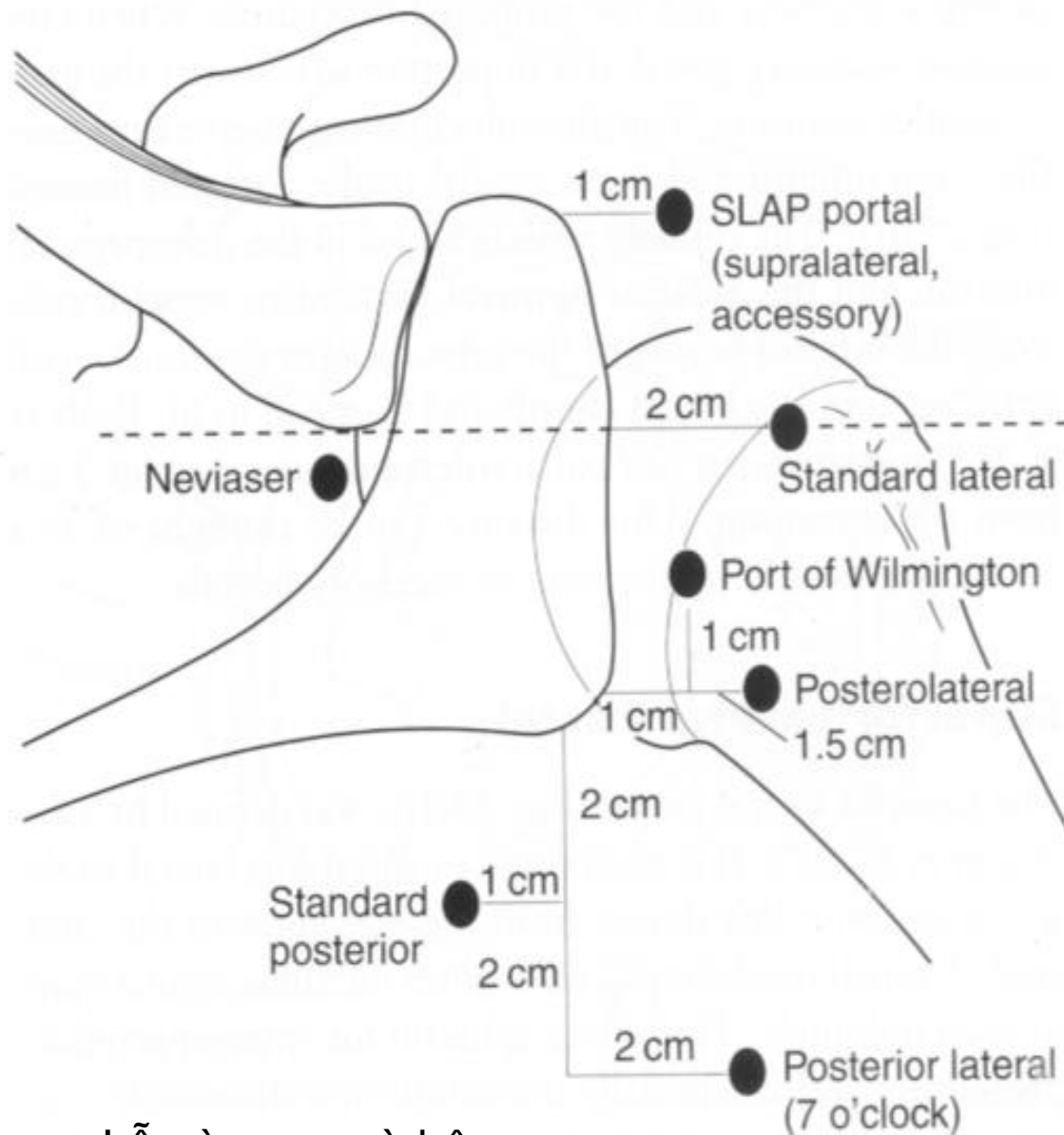
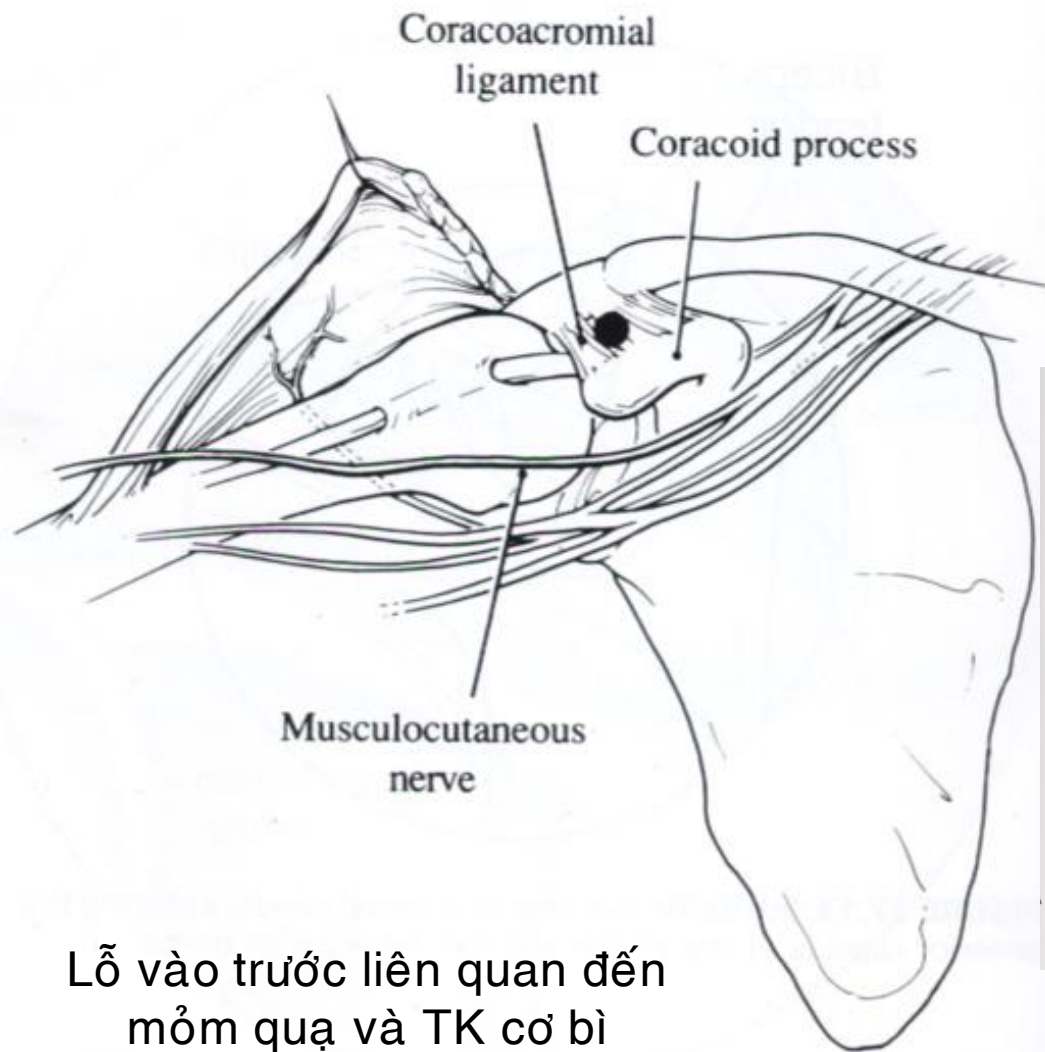


FIGURE 27.11 Biceps sling anatomy. This is a right shoulder with the arthroscope in the posterior portal, illustrating the arthroscopic view of the anterior shoulder anatomy and biceps sling.



Lỗ vào sau và bên

FIGURE 27.15 Posterior and lateral portals.



Lỗ vào trước liên quan đến
mỏm quạ và TK cơ bì

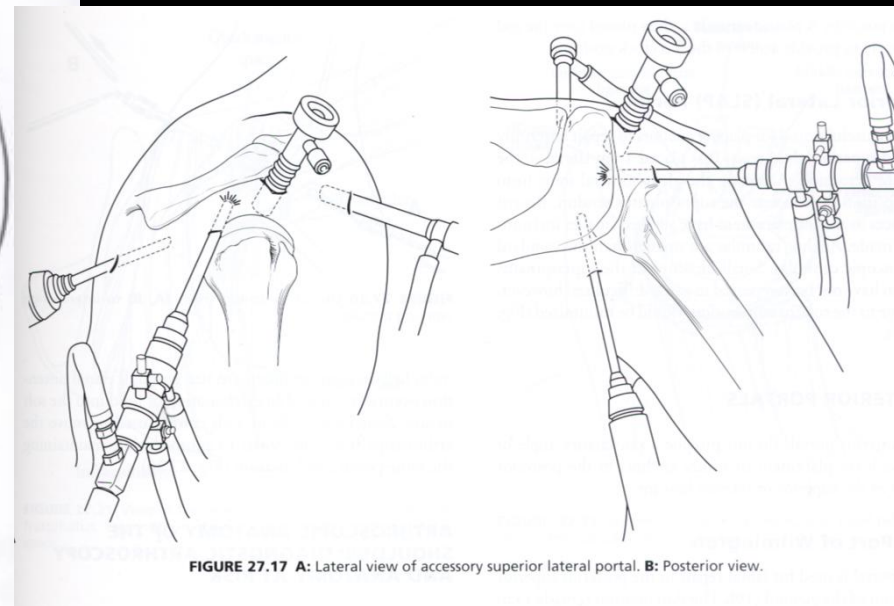


FIGURE 27.17 A: Lateral view of accessory superior lateral portal. B: Posterior view.

FIGURE 27.16 Anterior portal placement in relation to the coracoid process and the musculocutaneous nerve.

Superior view

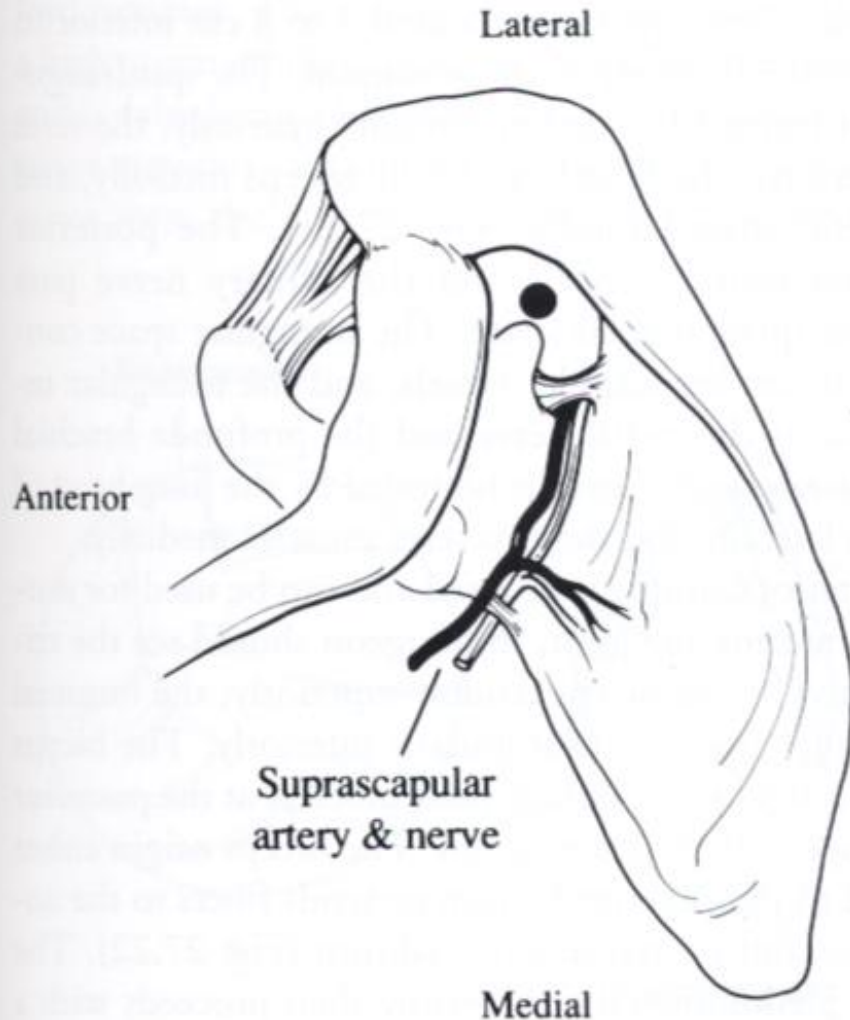


FIGURE 27.18 Neviaser portal in relation to the suprascapular nerve and artery, the acromion, the clavicle, and the spine of the scapula.

Lỗ Neviaser liên quan đến ĐM, TK vai trên, mỏm cùng, xương đòn và gai vai

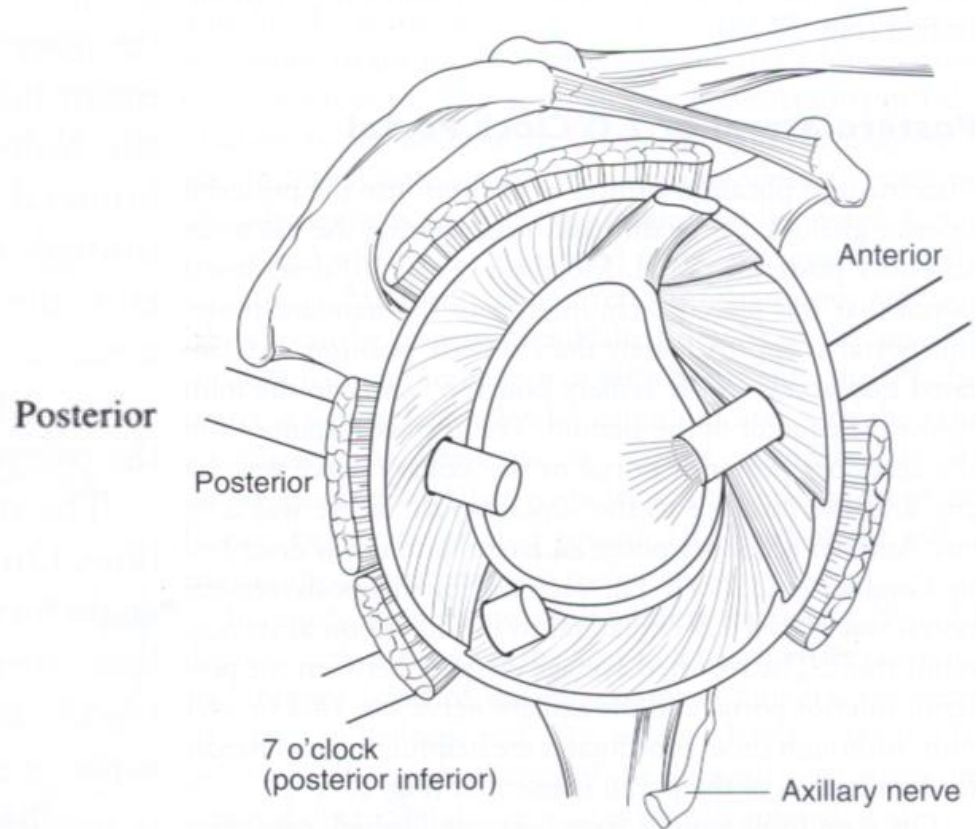


FIGURE 27.19 Posterolateral portal (7 o'clock portal).

Lỗ sau ngoài (lỗ 7 giờ)
liên quan TK nách

Lỗ tứ giác có TK nách

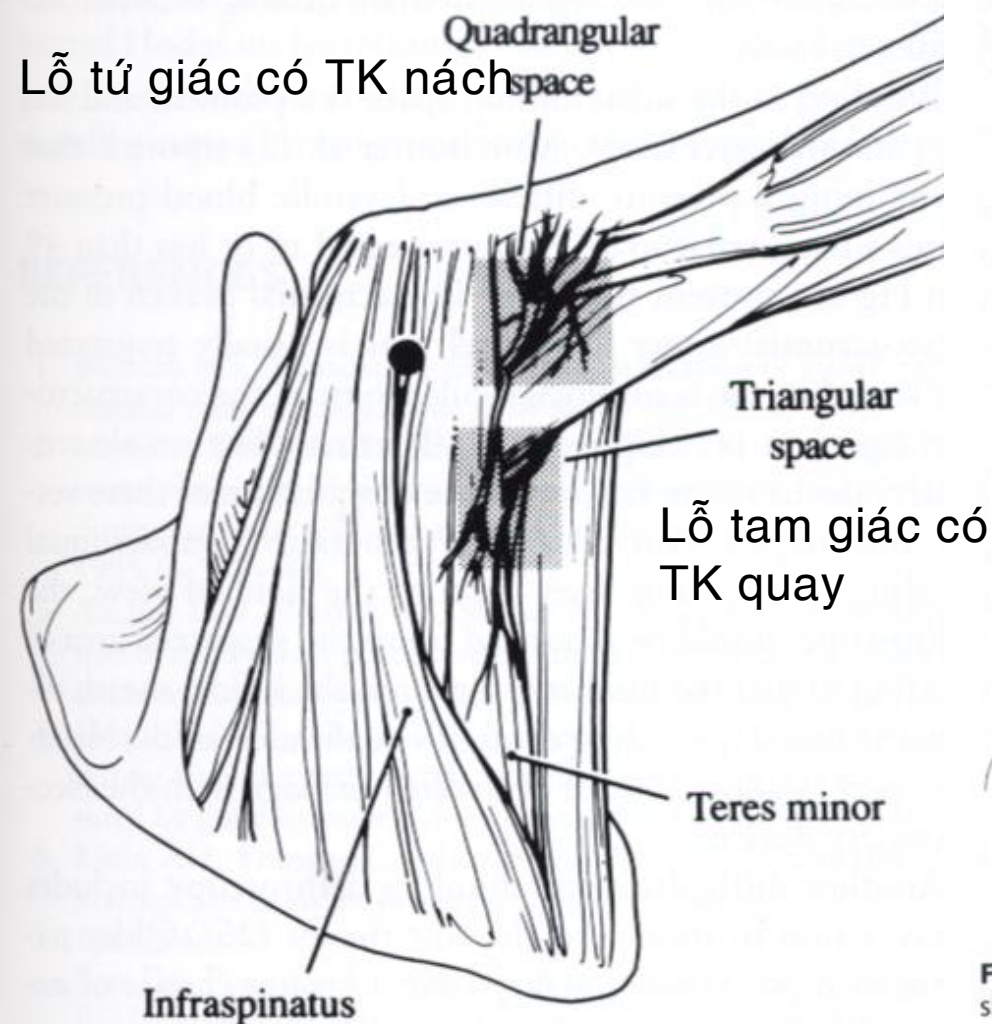


FIGURE 27.21 View of the posterior portal in relation to the infraspinatus, teres minor, quadrangular space, and triangular space.

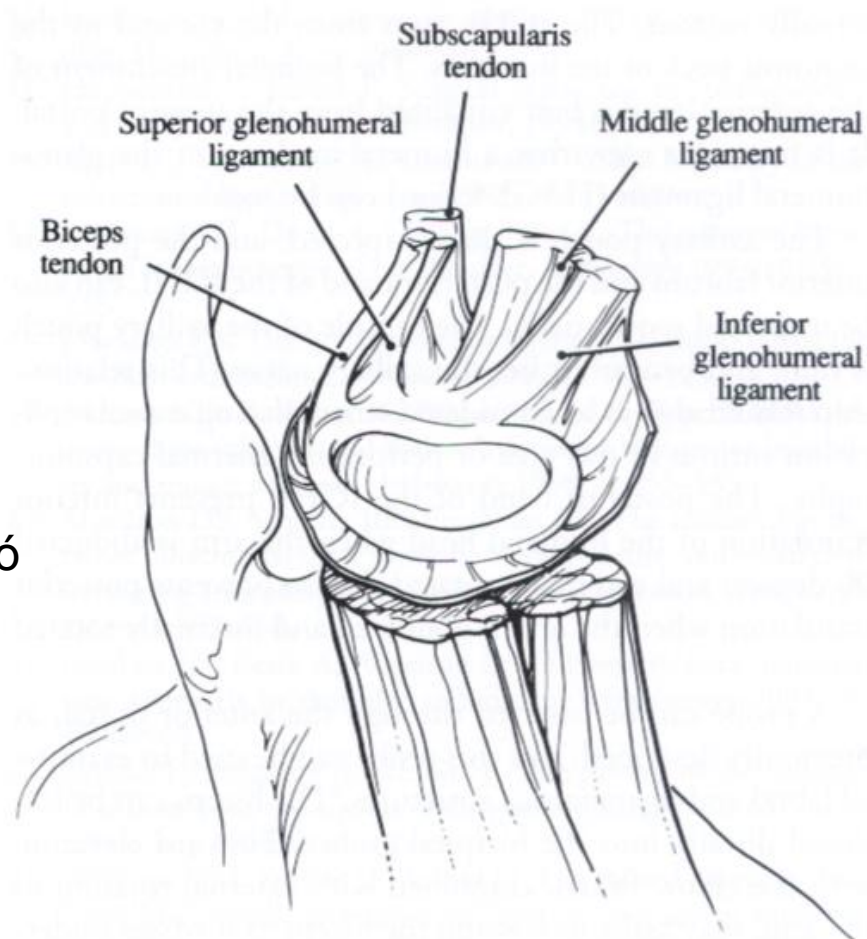
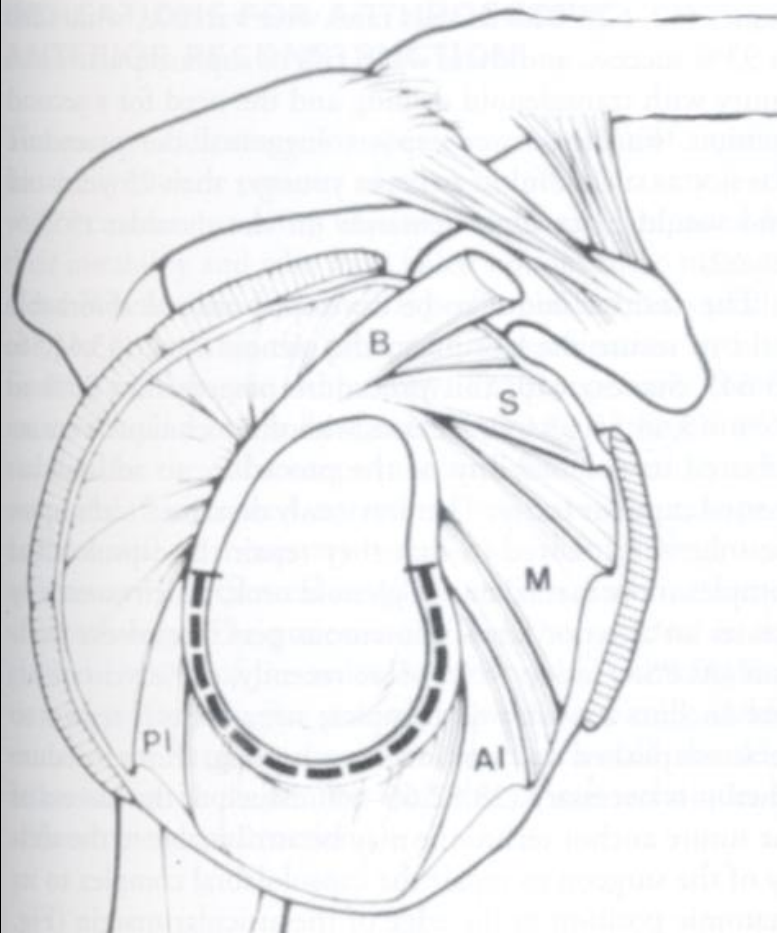


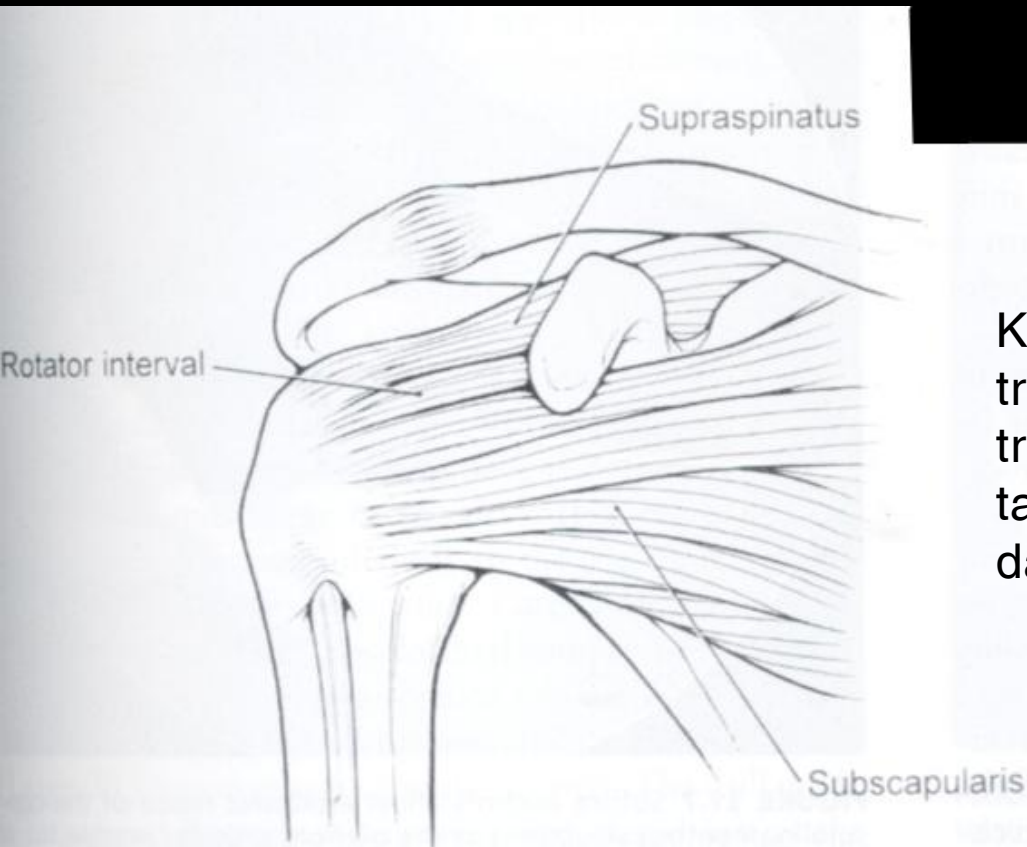
FIGURE 27.23 Anterior capsular ligaments and their relationship to the subscapularis and biceps.

Lỗ sau liên quan đến cơ dưới vai, tròn bé, lỗ tứ giác và tam giác



Rách toàn bộ phức hợp
dây chằng ổ chảo cánh tay dưới
dẫn đến mất vững đa hướng

FIGURE 31.4 Disruption of entire inferior glenohumeral ligament complex results in multidirectional instability.



Khoảng chóp xoay với bờ trên là gân trên gai và dưới là gân dưới vai, bờ trong là mỏm quạ và đỉnh của khoảng tam giác này tận mỏm ở phía ngoài dây chằng ngang cánh tay

FIGURE 31.5 The rotator interval is bordered above by the supraspinatus tendon and below by the subscapularis tendon. Its medial margin is the coracoid process and the apex of this triangular-shaped interval ends laterally at the transverse humeral ligament.

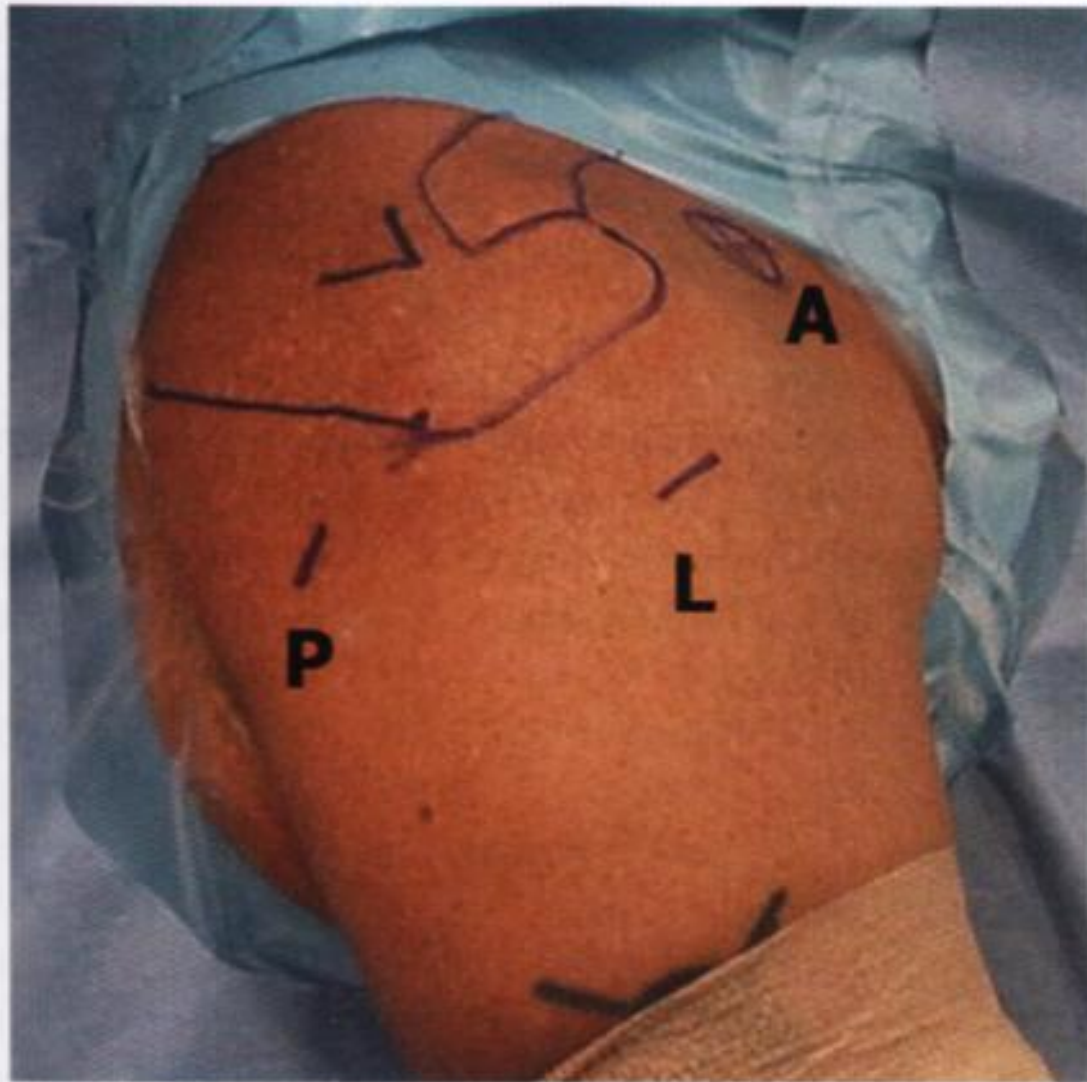


Figure 9-1 Intraoperative photograph of standard shoulder portals drawn before the incision. A, anterior portal; L, lateral subacromial working portal; P, posterior portal.

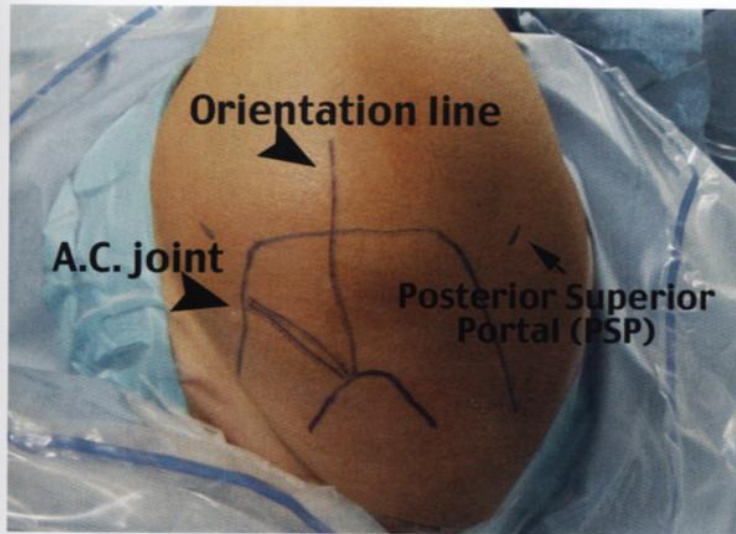


FIGURE 3-1. The bony surface anatomy is outlined before making portals.

Các bước
vào khớp vai
qua lỗ trước
và sau



FIGURE 3-2. Insert the arthroscopic cannula into the posterior-superior portal using the tapered tip of the obturator to palpate the articular surface of the humeral head.

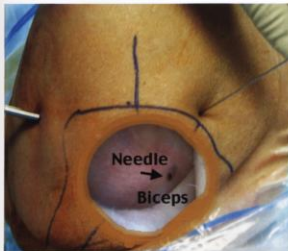


FIGURE 3-3. A spinal needle is inserted 1 cm away from the anterior lateral corner of the acromion and enters the joint just anterior to the biceps tendon to locate the anterior-superior portal.

to puncture the anterior capsule and tent the skin. Make a small stab wound adjacent to the tip of the guide rod, which should be located approximately 2 cm inferior and 1 cm medial to the anterior edge of the acromion. Pass the guide rod through the skin incision, and insert a Crystal cannula fitted with a cannulated obturator over the tip of the rod and work it into the joint (Fig. 3-5). Connect the out-flow drainage tubing to the AMGE. Insert the arthroscope into the posterior-superior portal, activate the video tape recorder, and begin the first 10 steps of the 15-point glenohumeral anatomy review.

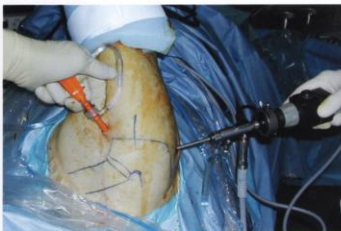
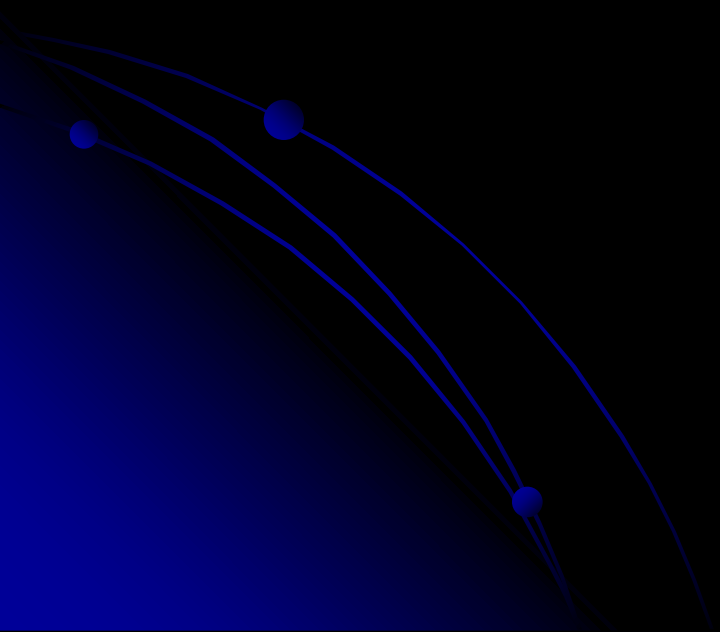


FIGURE 3-4. Insert the anterior-superior Crystal cannula (Arthrex, Inc., Naples, FL) fitted with an obturator along the path of the spinal needle.



FIGURE 3-5. Insert the anterior cannula over a guide rod and into the joint using a cannulated obturator to create the anterior mid-glenoid portal.

GIẢI PHẪU BÌNH THƯỜNG TRONG KHỚP VAI



Phần 1(tt). Hình ảnh nội soi bình thường của khớp vai

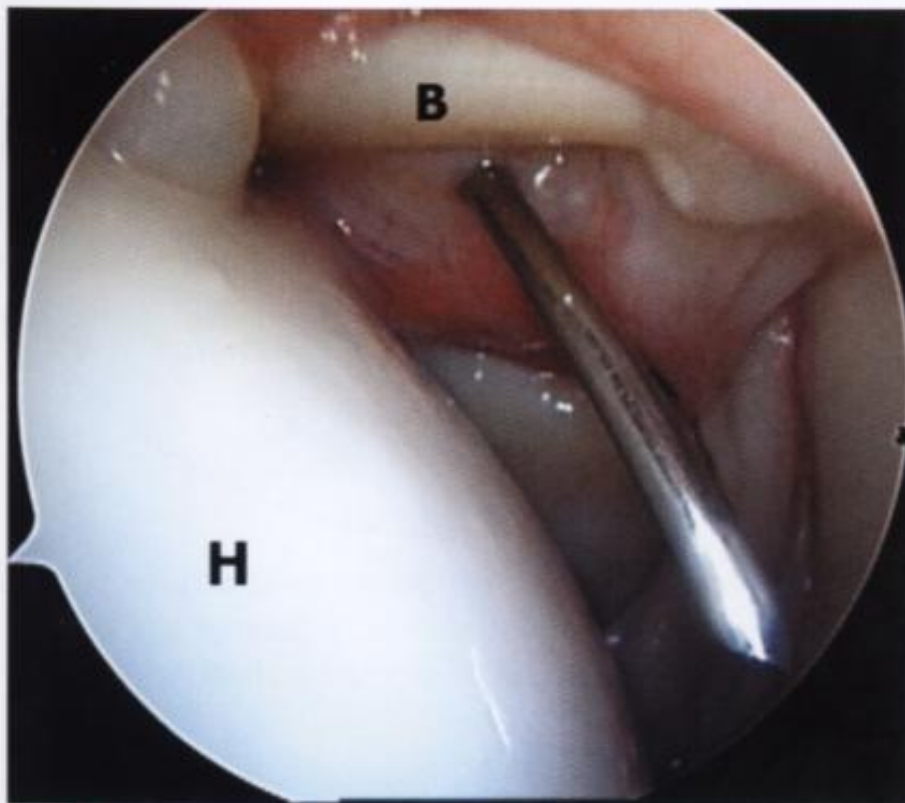


Figure 9-2 Arthroscopic image from a posterior viewing portal. The spinal needle marks the position of the anterior rotator interval portal. B, biceps tendon; H, humeral head.

Qua nội soi nhìn từ lỗ vào sau: kim tủy sống đánh dấu vị trí của lỗ vào trước ở khoảng gian cơ chóp xoay . B.gân nhị đầu; H. chỏm cánh tay

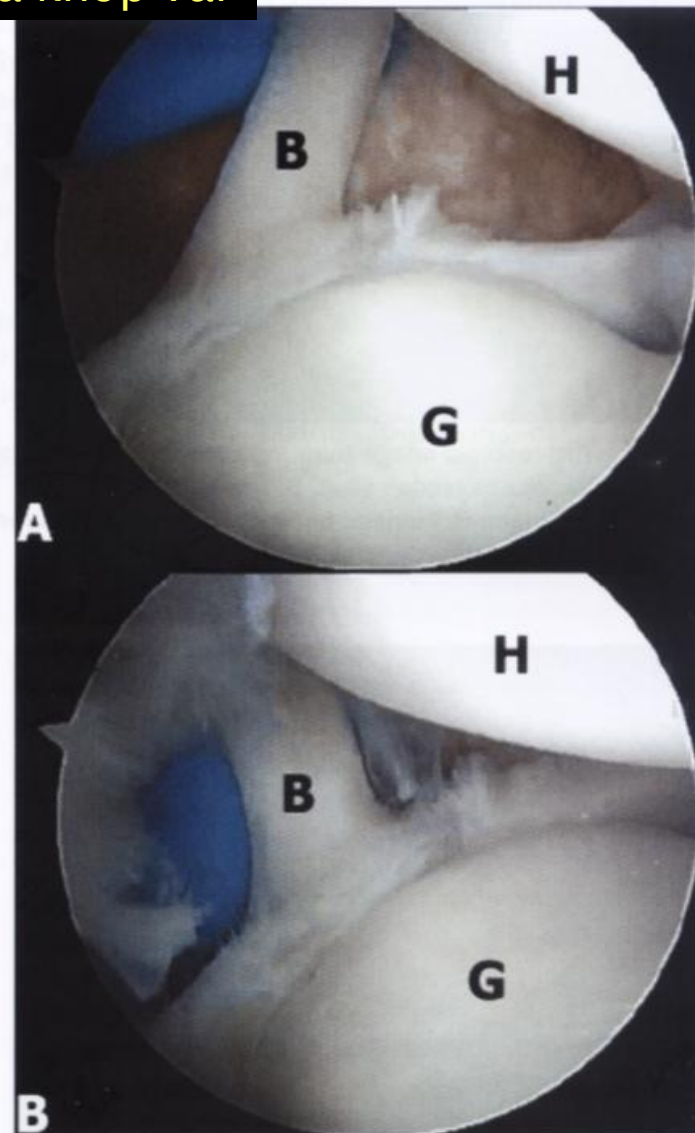


Figure 9-4 In abduction and external rotation, the superior labrum can rotate posterior and medially from the superior glenoid (peel-back phenomenon). A, Superior labrum with the arm in neutral position. B, Superior labrum with the arm in abduction and external rotation, demonstrating peel back. Note the change in the orientation of the biceps tendon (B). G, glenoid; H, humeral head.

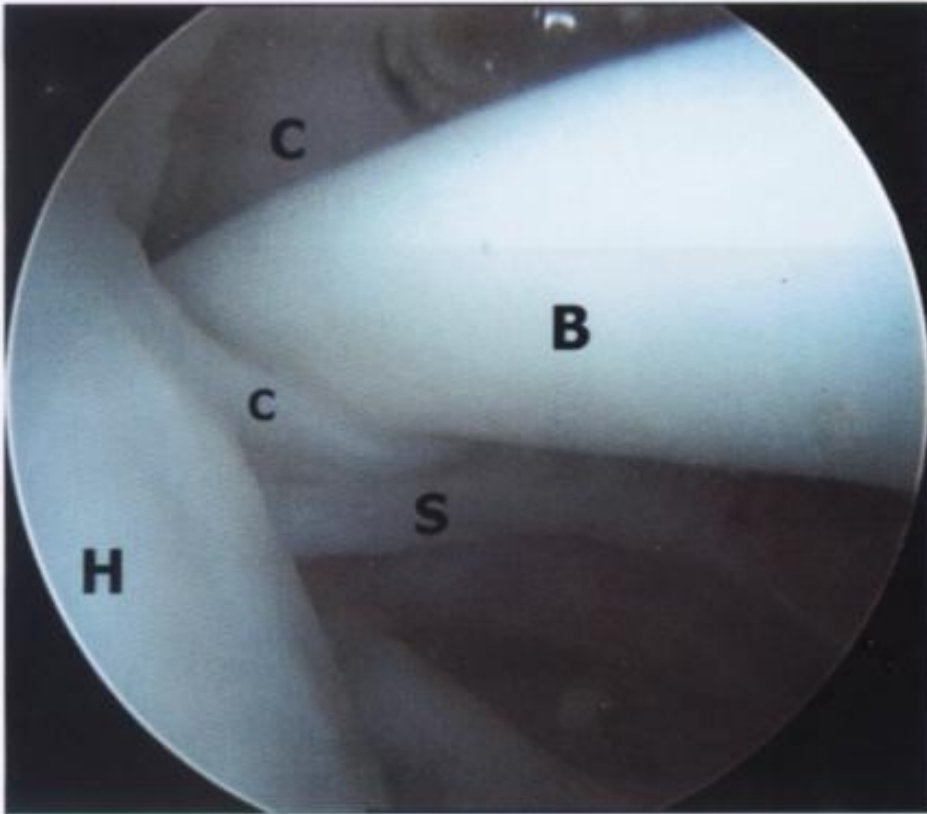


Figure 9-5 Arthroscopic image from a posterior viewing portal demonstrating the biceps tendon sling. B, biceps tendon; C, coracohumeral ligament; H, humeral head; S, superior glenohumeral ligament.

Gân nhị đầu tư thế treo giữa dc quạ cánh tay

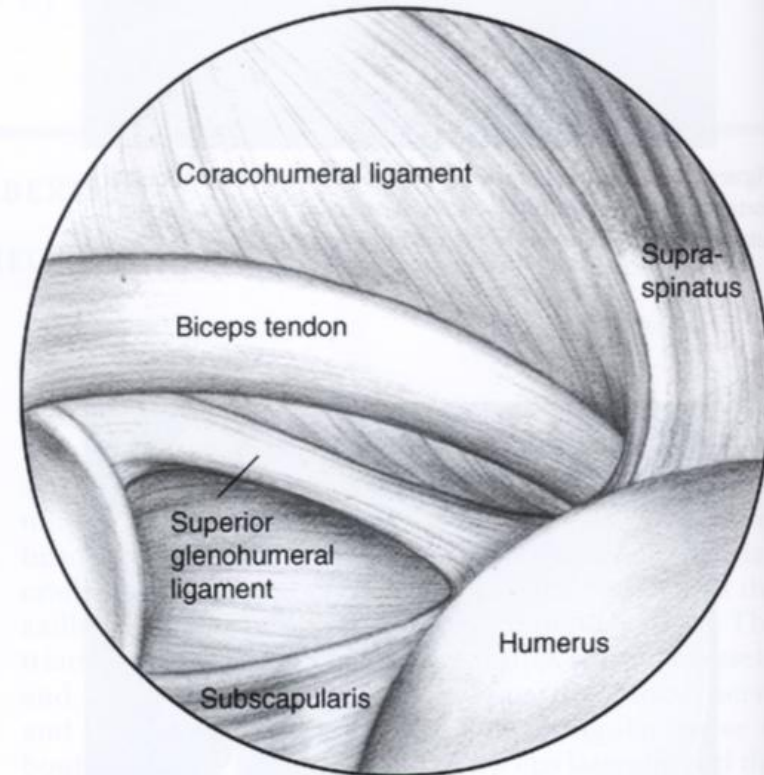


Figure 9-7 Relationship of anterosuperior structures to the biceps tendon and its groove. The subscapularis (medially) and the supraspinatus (laterally) tendons border the bicipital groove.

15 điểm giải phẫu thăm khám trong soi khớp vai

Hình ảnh nhìn từ lỗ vào phía sau :

1. Gân nhị đầu và sụn viền trên
2. Sụn viền sau và ngách bao khớp
3. Ngách nách dưới và nơi bám bao khớp dưới vào chỏm
4. Sụn viền dưới và bề mặt khớp ổ chảo
5. Gân trên gai của chóp xoay
6. Nơi bám của chóp xoay phía sau và vùng không sụn của chỏm
7. Bề mặt khớp của chỏm xương cánh tay
8. Sụn viền trên trước, dc ổ chảo cánh tay trên và giữa, và gân dưới vai
9. Sụn viền dưới trước
10. Dây chằng dưới trước

15 điểm giải phẫu thăm khám trong soi khớp vai

Hình ảnh nhìn từ lỗ vào phía trước :

11. Sụn viền ổ chảo sau nơi bám bao khớp vào chỏm
12. Chóp xoay sau, gồm gân dưới gai và trên gai
13. Sụn viền ổ chảo trước và dc ổ chảo cánh tay dưới bám vào chỏm
14. Ngách và gân dưới vai và dc ổ chảo cánh tay dưới bám vào sụn viền
15. Bề mặt trước của chỏm với chỗ bám cơ dưới vai và gân nhị đầu đi xuyên qua khoảng giữa cơ chóp xoay

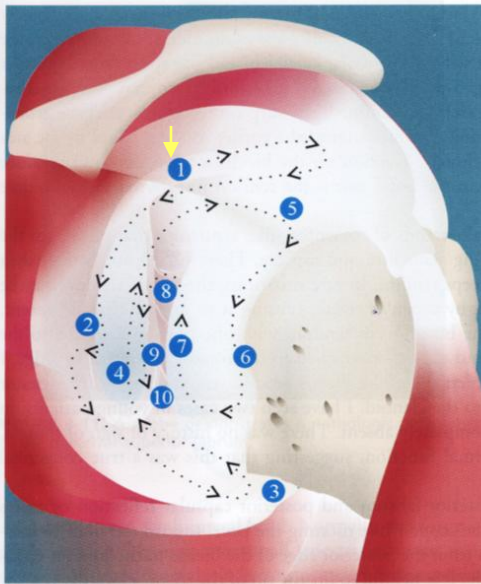


FIGURE 3-6. Steps 1 through 10 of the glenohumeral joint evaluation are completed viewing with the scope in the posterior portal.

reveal unsuspected areas of damage to the biceps located just over the groove (Fig. 3-7). Inspect the superior labrum and palpate the articular surface (Fig. 3-8). If the superior labrum is damaged or loosely attached, it can be probed with a probe to determine whether the labrum arches away from the joint. This laxity may be a sign of an unstable biceps anchor, indicating that a

(see Chapter 12).

Hình ảnh nhìn từ lỗ vào phía sau :

1. Gân nhị đầu và sụn viền trên
2. Sụn viền sau và ngách bao khớp
3. Ngách nách dưới và nơi bám bao khớp dưới vào chỏm
4. Sụn viền dưới và bề mặt khớp ổ chảo
5. Gân trên gai của chóp xoay
6. Nơi bám của chóp xoay phía sau và vùng không sụn của chỏm
7. Bề mặt khớp của chỏm xương cánh tay
8. Sụn viền trên trước, dc ổ chảo cánh tay trên và giữa, và gân dưới vai
9. Sụn viền dưới trước
10. Dây chằng dưới trước

1. Gân nhị đầu và sụn viền trên

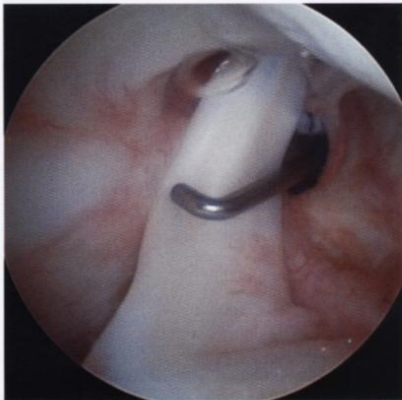


FIGURE 3-7. The biceps tendon is visualized and palpated using a probe in the anterior-superior portal.

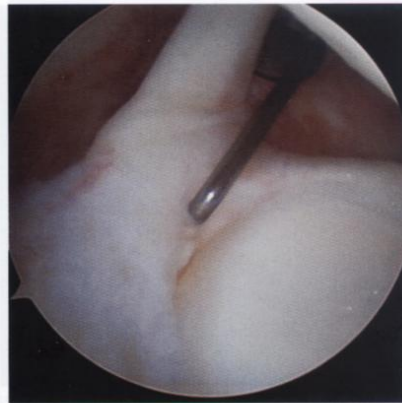


FIGURE 3-8. Use the probe to palpate the attachment of the superior labrum to the glenoid.

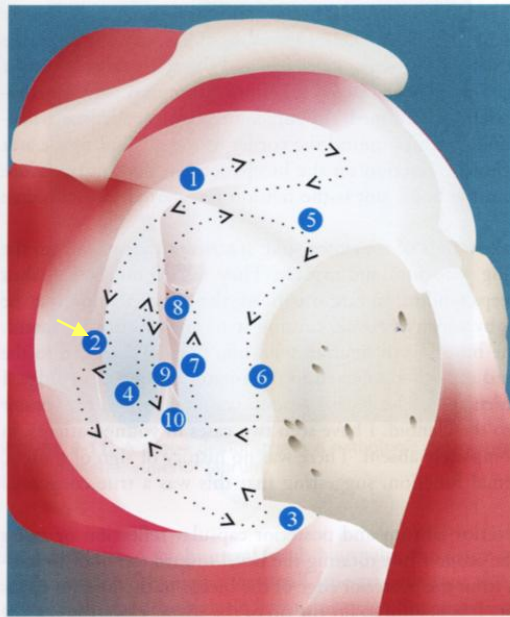


FIGURE 3-6. Steps 1 through 10 of the glenohumeral joint evaluation are completed viewing with the scope in the posterior portal.

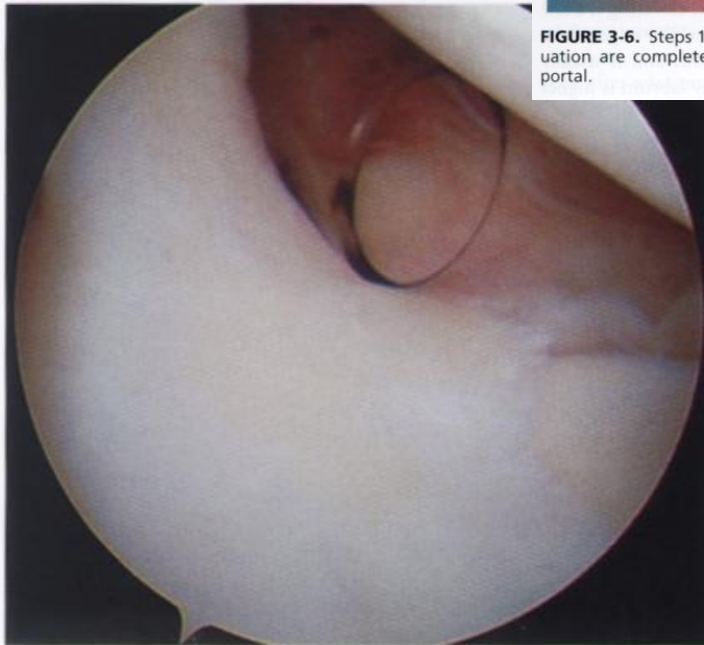


FIGURE 3-9. The meniscoid superior labrum resembles the meniscus of the knee with a detached edge.

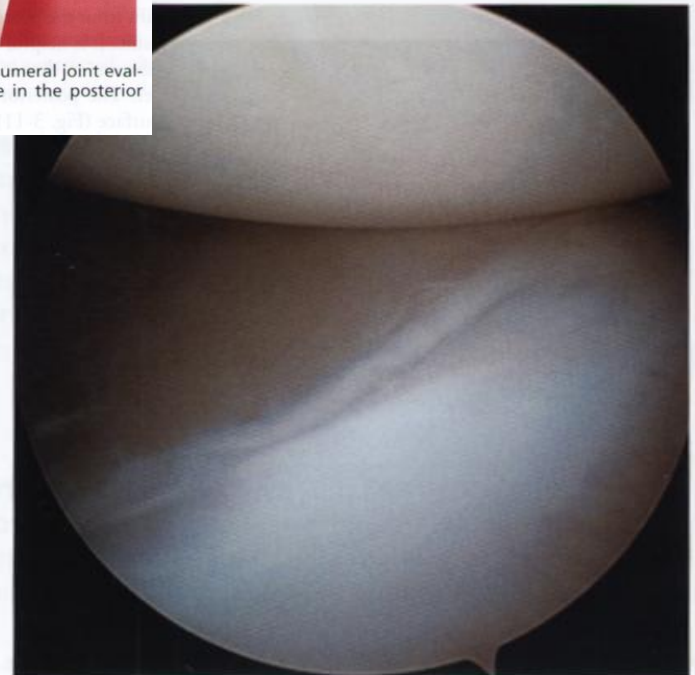


FIGURE 3-10. The posterior labrum is visualized from the posterior portal by retracting the tip of the scope and rotating it in the 6-o'clock direction.

2.Sụn viền sau xoay scope hướng 6 giờ

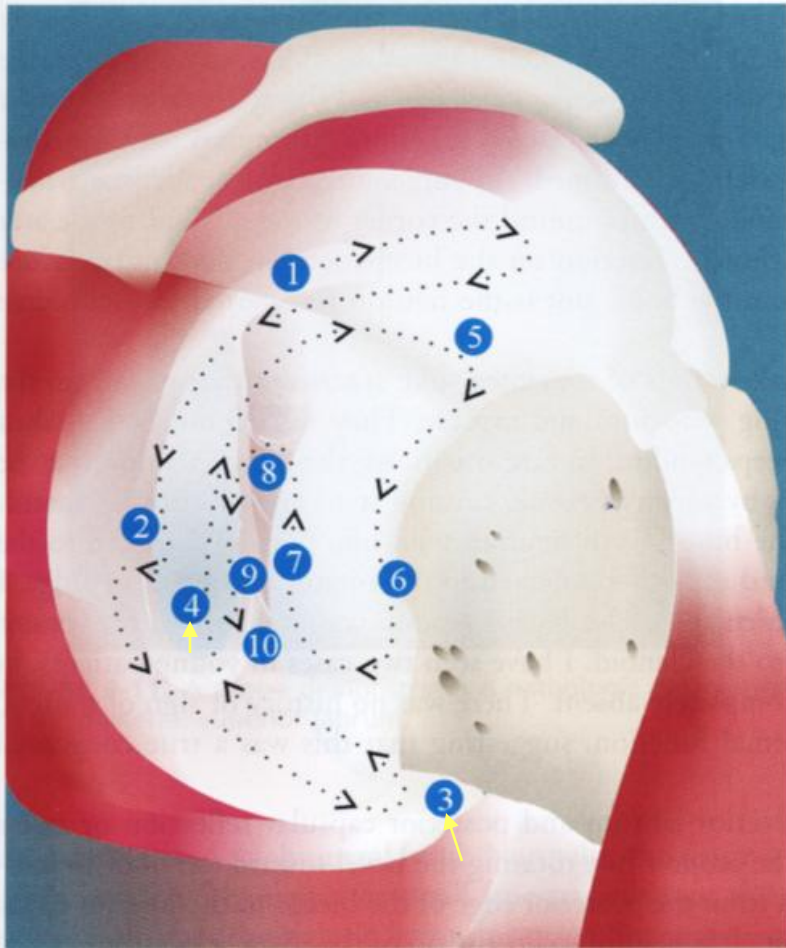


FIGURE 3-6. Steps 1 through 10 of the glenohumeral joint evaluation are completed viewing with the scope in the posterior portal.



FIGURE 3-11. A probe demonstrates a pathologic detachment of the posterior-superior labrum.

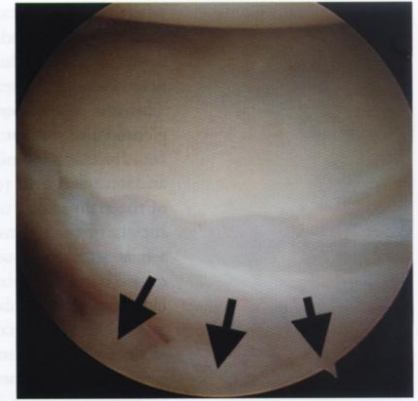


FIGURE 3-12. The posterior capsule recess normally appears as a deep fold of tissue posterior to the labrum.

its insertion into the humeral head. Normally, the tissue is smooth and has a delicate synovial covering. There may be small fenestrations near the attachment to the head. Sometimes, early chondromalacic lesions or osteophytes are seen in this location. When adhesions are present, the inferior recess may be contracted, closing off the pouch. On rare occasions, there may be a capsular tear at the inferior capsular attachment to the humeral

3. Ngách nách và nơi bám bao khớp dưới vào chỏm

4. Bề mặt sụn ổ chảo hơi lõm với vùng sụn mỏng ở trung tâm

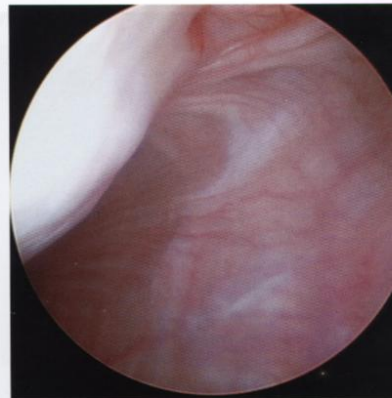


FIGURE 3-13. The axillary pouch is evaluated by rotating the scope inferior and superior to see the attachment into the humerus.

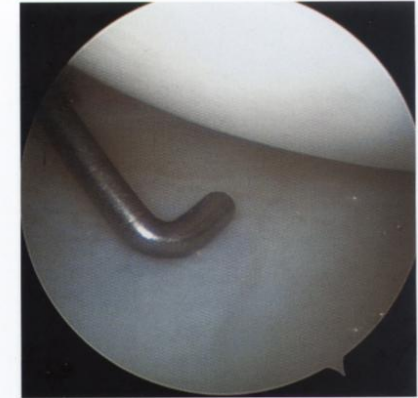


FIGURE 3-14. The articular surface of the glenoid is slightly concave, with a thin area in the center.

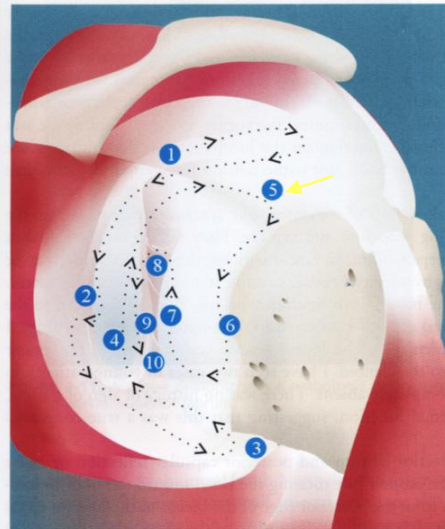


FIGURE 3-6. Steps 1 through 10 of the glenohumeral joint evaluation are completed viewing with the scope in the posterior portal.



FIGURE 3-15. The anterior glenoid edge usually has an indentation or notch that demarcates the inferior and superior portions.

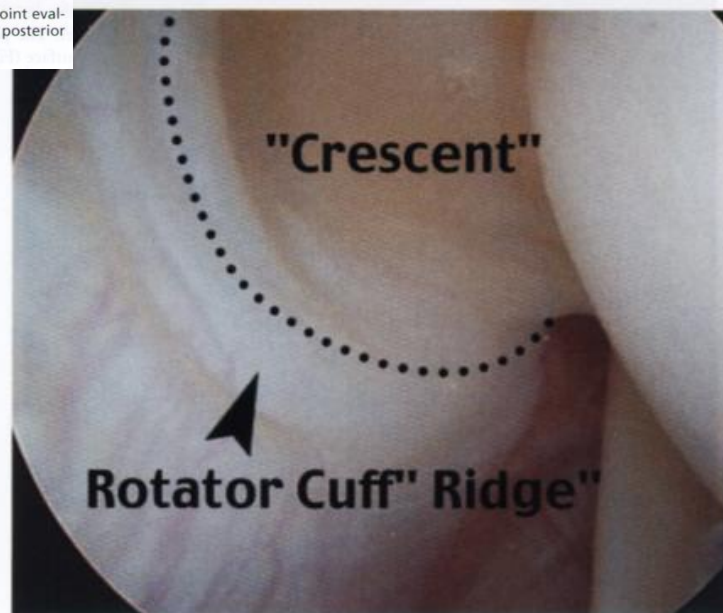


FIGURE 3-16. The supraspinatus tendon attaches to the humeral head adjacent to the articular cartilage. The rotator ridge is a capsular band of variable thickness extending from the anterior edge of the cuff to the humeral head posteriorly and encloses the area called the crescent.

5. Gân trên gai bám vào chỏm kế sụn khớp với 1 dải bao khớp dày lên gọi là ‘mào’

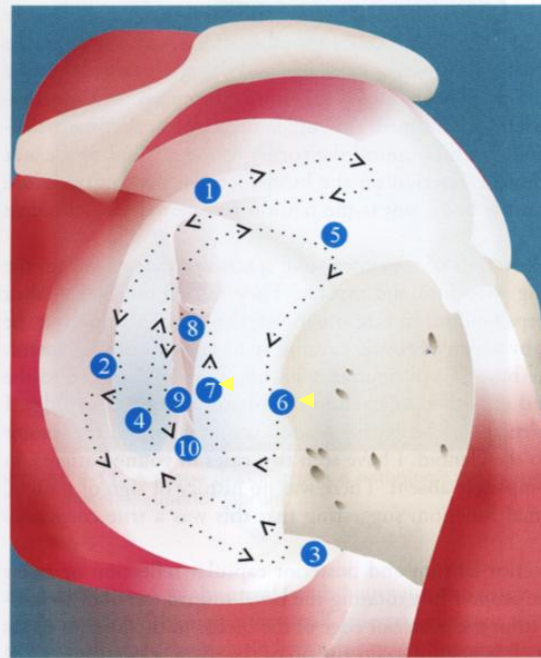


FIGURE 3-6. Steps 1 through 10 of the glenohumeral joint evaluation are completed viewing with the scope in the posterior portal.

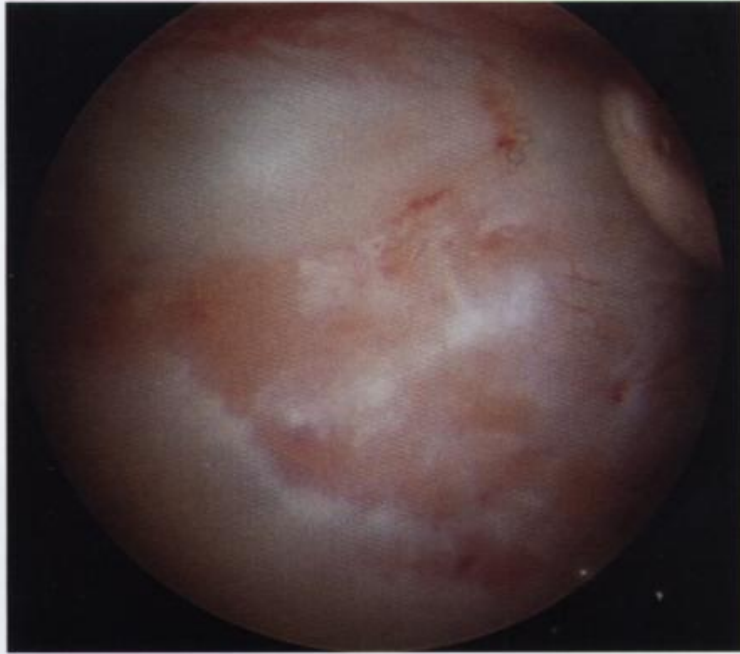


FIGURE 3-17. The bare area of the humeral head is adjacent to the infraspinatus attachment to the humeral head.

6. Vùng không sụn ở chỏm kế
nơi bám gân cơ dưới gai vào chỏm

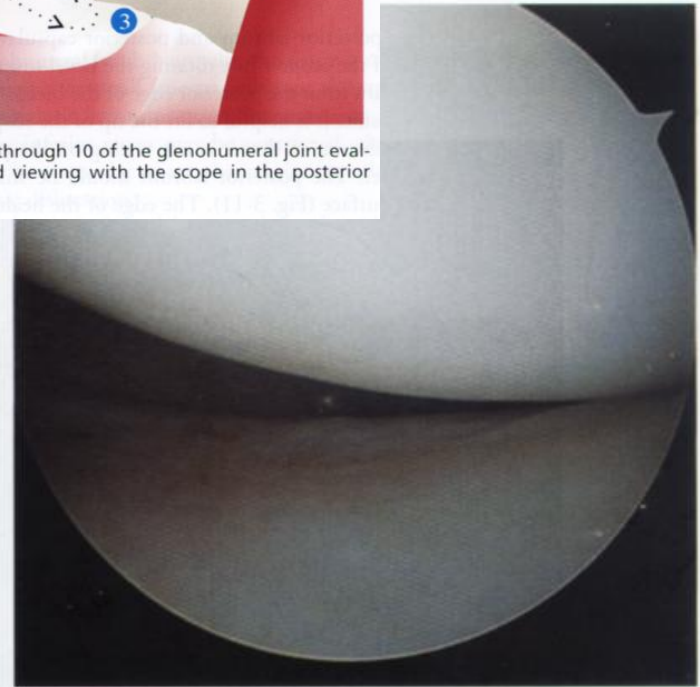


FIGURE 3-18. The globe of the normal humeral head is smooth and has firm articular cartilage.

7. Mặt sụn khớp chỏm cánh tay trơn
láng và có sụn khớp chắc

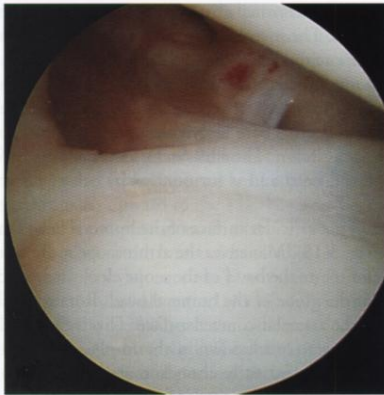


FIGURE 3-19. The anterior-superior labrum is normally firmly attached to the anterior-superior glenoid.

8. Sụn viền trên trước

A variation easily confused with a pathologic anterior-superior labral detachment is

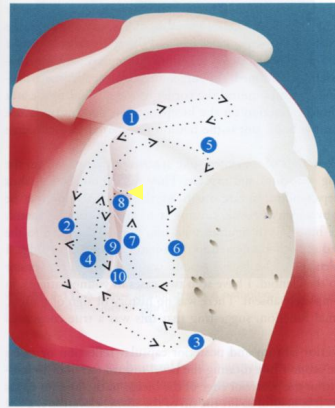
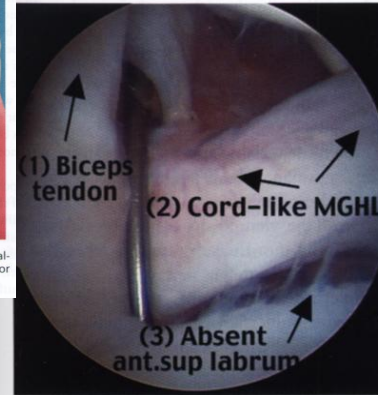
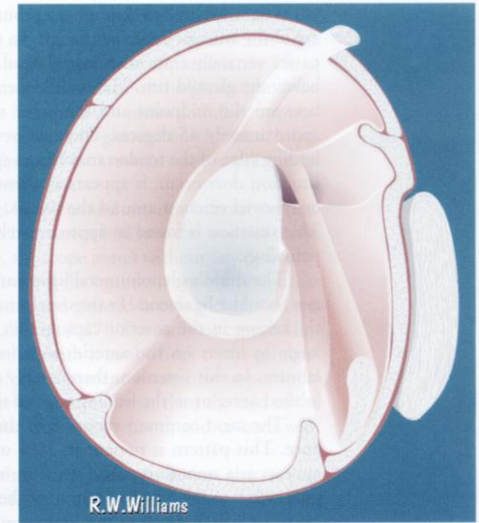


FIGURE 3-6. Steps 1 through 10 of the glenohumeral joint evaluation are completed viewing with the scope in the posterior portal.



FIGURES 3-22 and 3-23. The Buford complex is easily confused with anterior-superior labral detachment.



Phức hợp Buford dễ nhầm lẫn với tách sụn viền trên trước

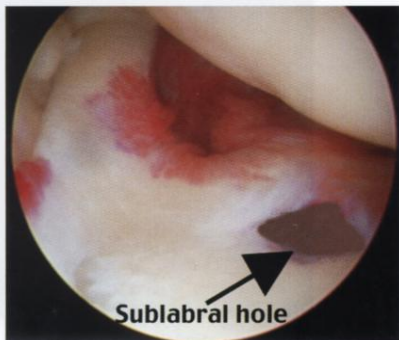
indicating that the anatomy is more likely a congenital variation.

The superior glenohumeral ligament is also seen in position 8 crossing between the biceps and subscapularis tendon. Its course extends from the labrum at the superior glenoid tubercle to the upper portion of the lesser tuberosity. Often, the superior glenohumeral ligament has a common insertion with the most superior edge of the subscapularis tendon. It frequently appears somewhat frayed (Fig. 3-24).

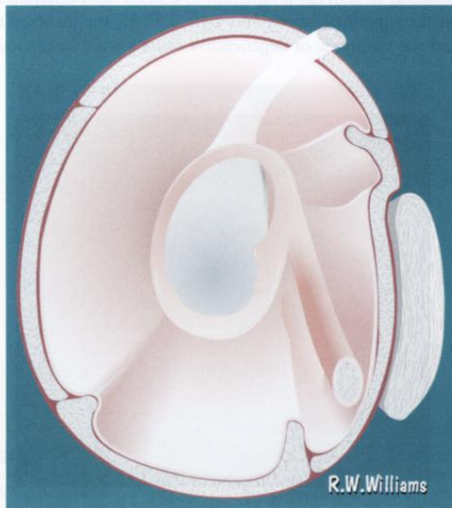


FIGURE 3-24. The superior glenohumeral ligament attaches the lateral edge of the subscapularis tendon, and the mid glenohumeral ligament crosses the medial edge.

9. Đc ổ chảo cánh tay trên tách từ bờ ngoài gân dưới vai và đc ổ chảo cánh tay giữa đi ngang qua bờ trong



FIGURES 3-20 and 3-21. The sublabral hole often has a cordlike middle glenohumeral ligament attached and is a normal anatomic variation that may resemble a labral detachment.



Lỗ dưới sụn viền thường có đc ổ chảo cánh tay giữa dạng bó bám vào là bình thường tương tự như tách sụn viền

23).

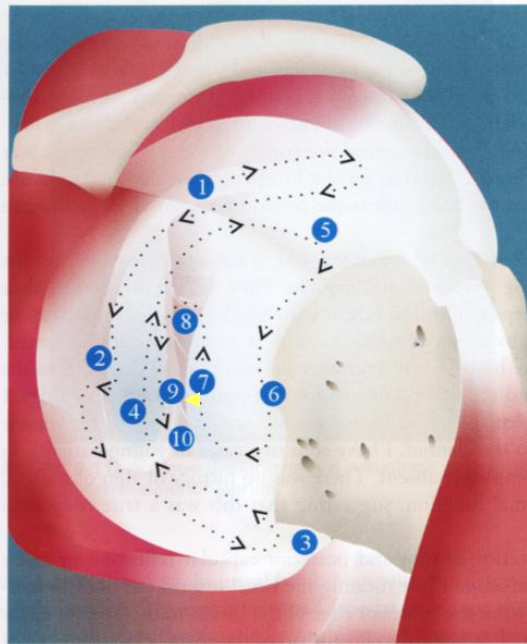


FIGURE 3-6. Steps 1 through 10 of the glenohumeral joint evaluation are completed viewing with the scope in the posterior portal.

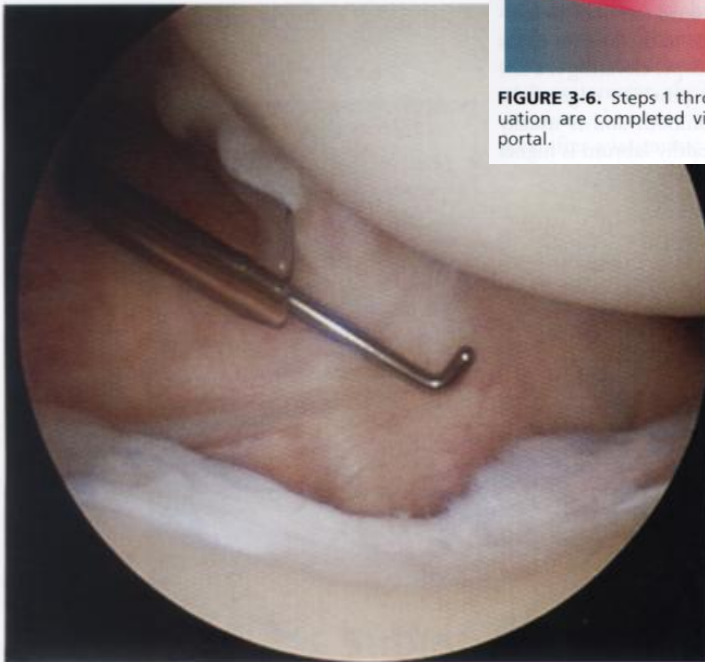


FIGURE 3-25. The middle glenohumeral ligament may appear gossamer or completely absent.

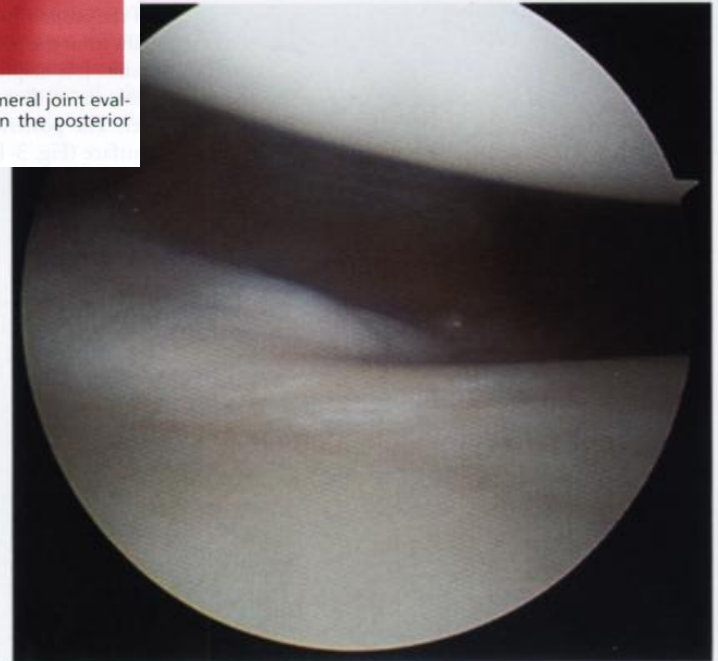


FIGURE 3-26. The anterior-inferior labrum is normally tightly fused with the articular cartilage below the mid-glenoid notch.

9. Sụn viền trước dưới thường chắc dính
sụn khớp dưới khuyết ổ chảo giữa

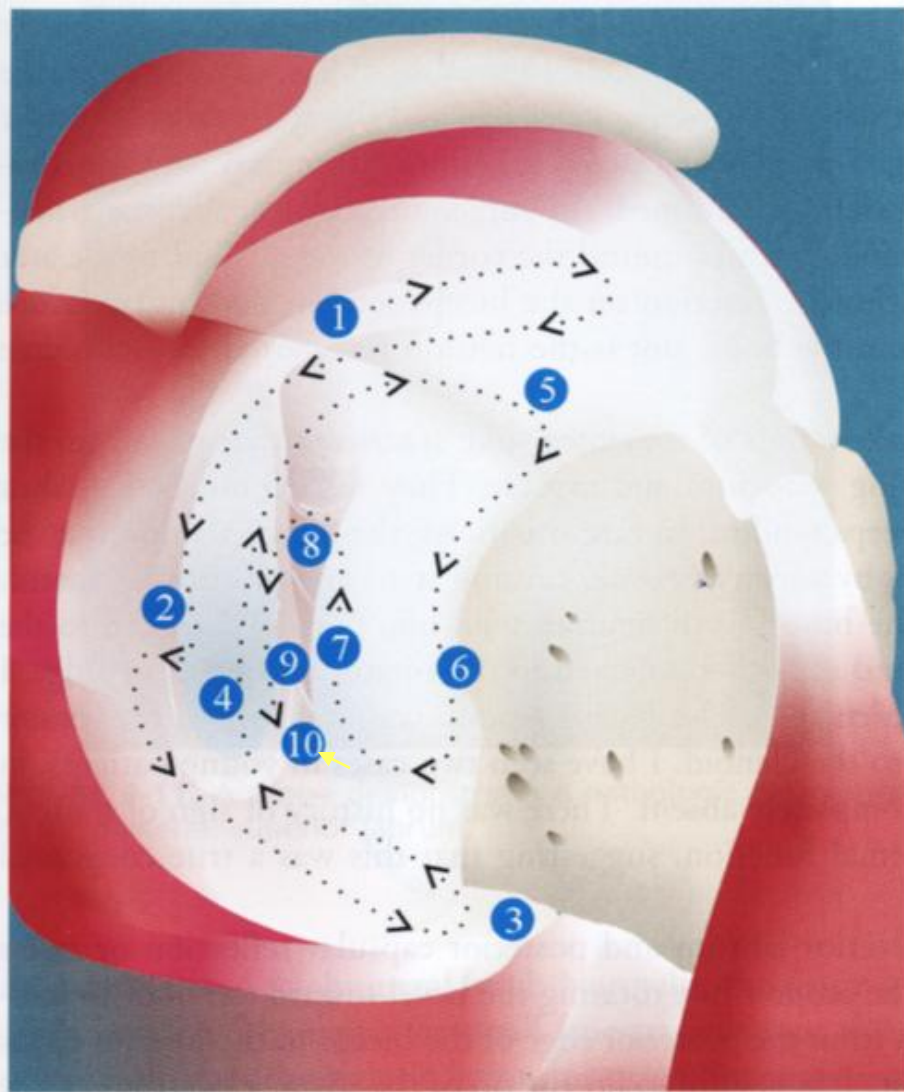


FIGURE 3-6. Steps 1 through 10 of the glenohumeral joint evaluation are completed viewing with the scope in the posterior portal.

10. Dc ổ chảo cánh tay dưới thường có dải dày gọi là dải trên trước, bám vào sụn viền trước, nhưng có thể không có khi khớp bị dẫn ra

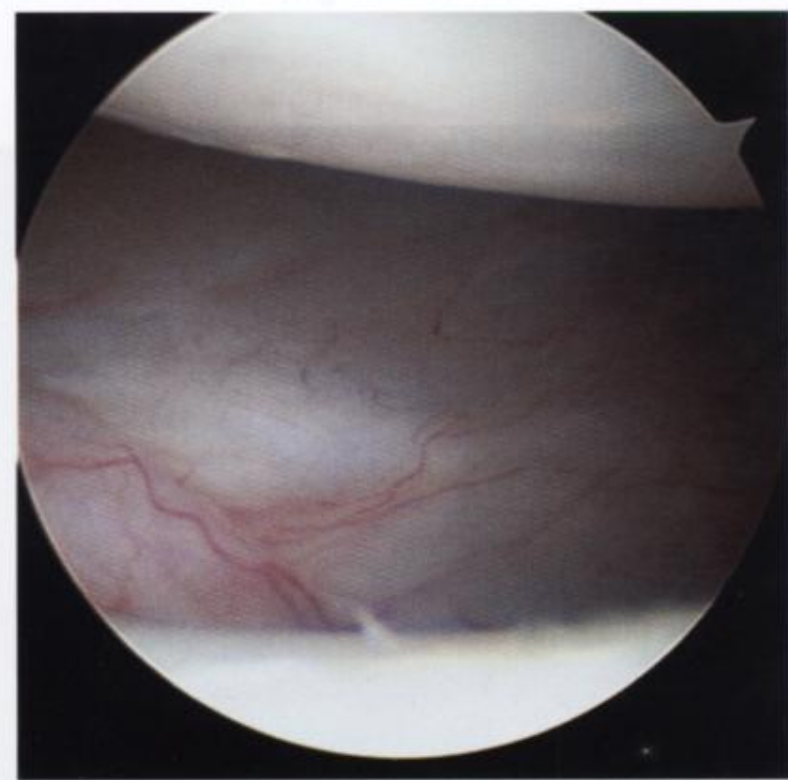


FIGURE 3-27. The inferior glenohumeral ligament usually has a thickening, called the anterior-superior band, that inserts on the anterior labrum, but it may not be apparent when the joint is distended.

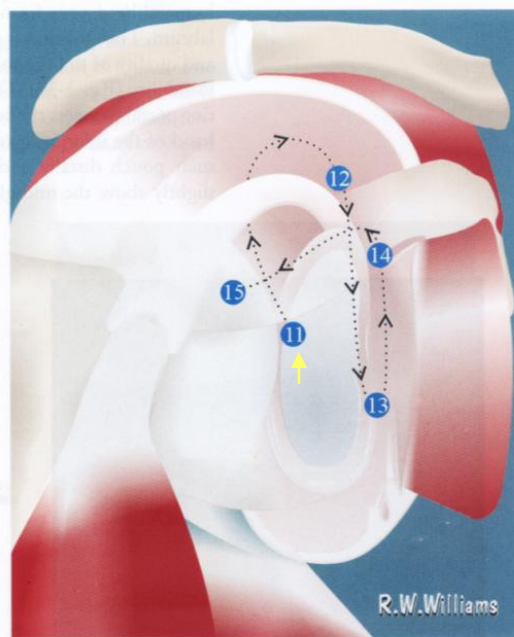


FIGURE 3-28. Steps 11 through 15 of the glenohumeral joint evaluation are completed viewing from the anterior portal.

Bước 11 đến 15 quan sát từ lỗ vào trước

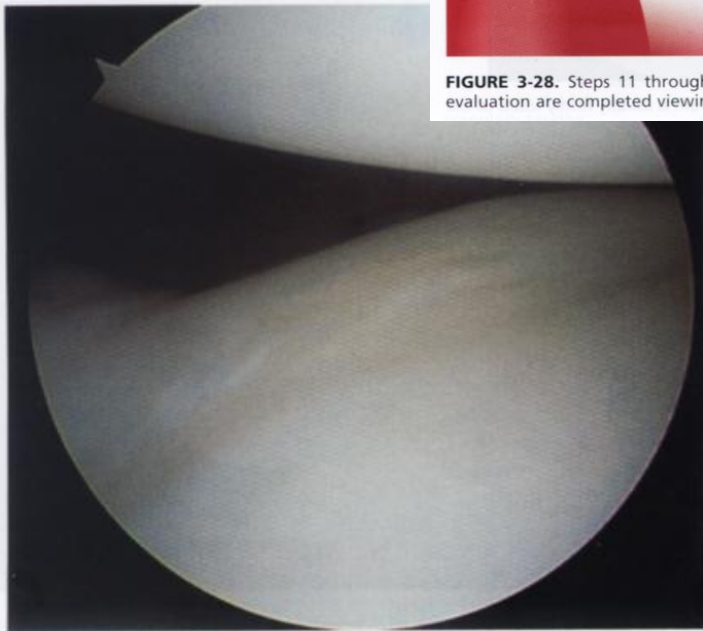


FIGURE 3-29. The posterior labrum is usually firmly fused to the articular cartilage of the glenoid.

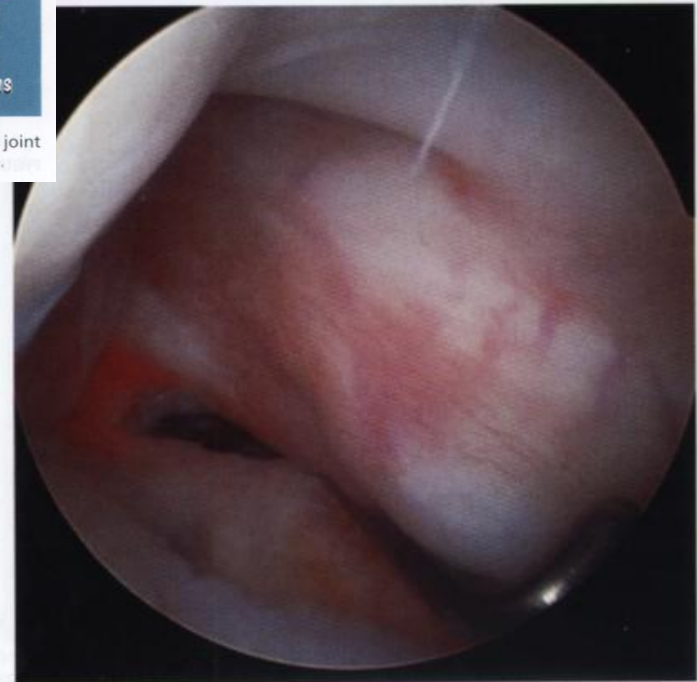


FIGURE 3-30. The posterior-superior capsule may have a few fenestrations near the humeral attachment.

11.Sụn viền sau thường chắc dính vào sụn khớp ổ chảo

bao khớp sau có thể có vài lỗ gần nơi bám và chỏm cánh tay

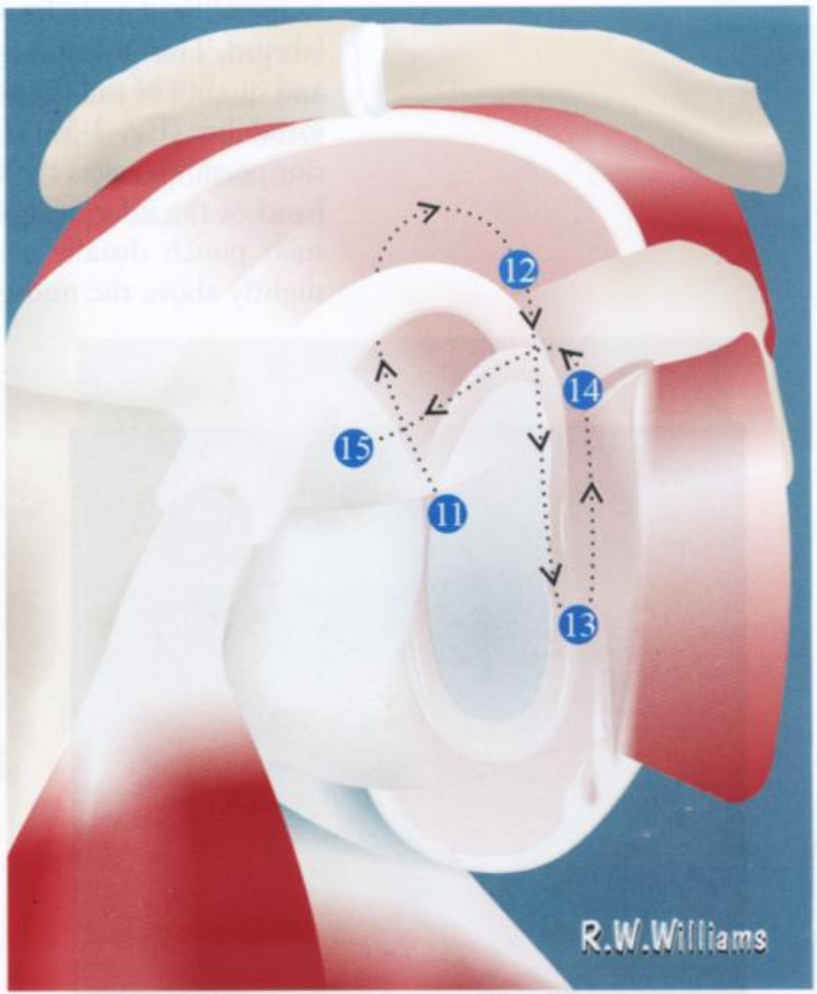


FIGURE 3-28. Steps 11 through 15 of the glenohumeral joint evaluation are completed viewing from the anterior portal.

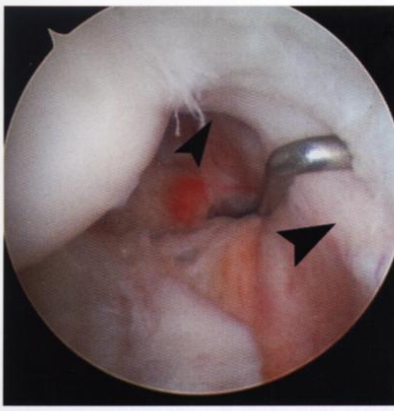


FIGURE 3-31. The posterior rotator cuff is a covered thickened area in the capsule where the rotator ridge or cable arches up to the humeral head.

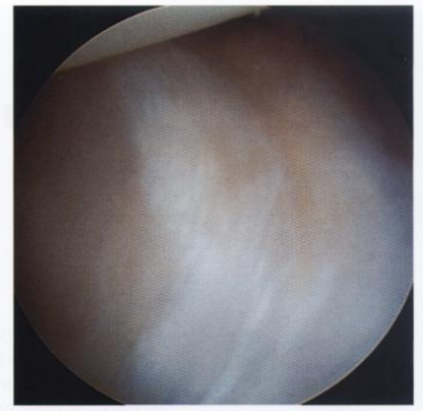


FIGURE 3-32. The anterior-inferior labrum and the attachment of the anterior-inferior ligaments are best seen when viewing from the anterior portal.

12. Chóp xoay sau là vùng dày lên được bao phủ trong bao khớp nơi bám vào chỏm

13. Sụn viền dưới trước và nơi bám của dc dưới trước được thấy rõ nhất ở lỗ vào trước

Position 14 includes the anterior attachment of the middle and the subscapularis recess. Locate the middle glenohumeral lig arthroscope and rotating the tip anteriorly until the subscapular anterior attachment of the middle glenohumeral ligament crosses

14. Dc ổ chảo cánh tay giữa có chỗ bám vào sụn viền hay cổ ổ chảo, thấy chạy ngang gân cơ dưới vai

13. Bao khớp trên sau

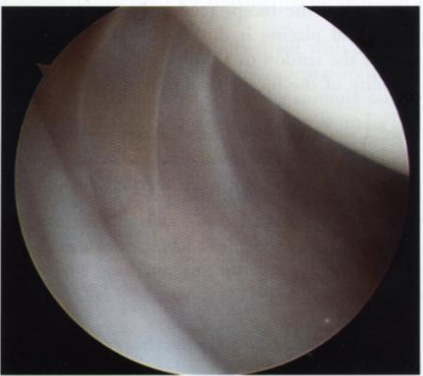


FIGURE 3-33. The humeral attachment of the anterior capsule must also be evaluated in position 13.



FIGURE 3-34. The attachment of the middle glenohumeral ligament into the labrum or glenoid neck is seen crossing the subscapularis tendon.

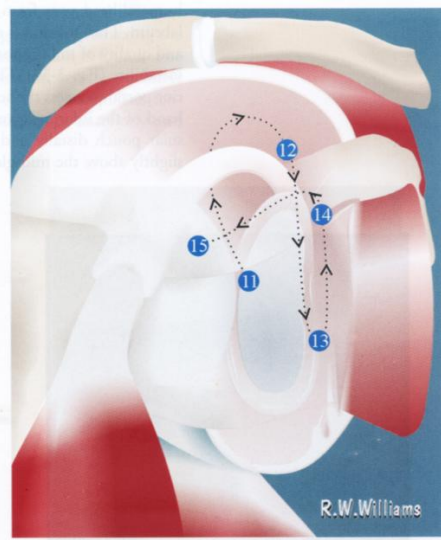


FIGURE 3-28. Steps 11 through 15 of the glenohumeral joint evaluation are completed viewing from the anterior portal.



FIGURE 3-35. The subscapularis recess may have several compartments that can hide loose bodies.

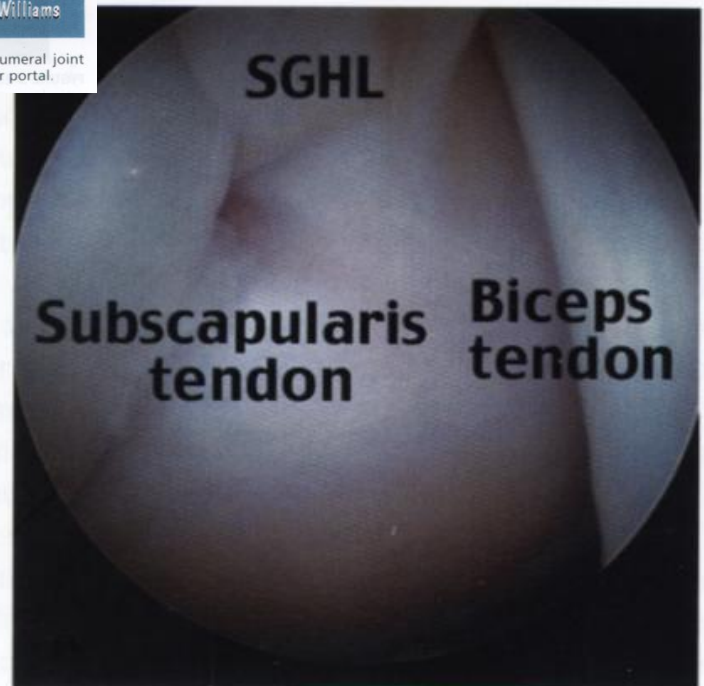


FIGURE 3-36. The anterior surface of the humeral head has a

15. Bề mặt trước của chỏm cánh tay
có 1 vùng sụn mỏng giữa gân nhị đầu
và dưới vai

14. Ngách dưới vai có vài khoang có
thể chứa dị vật

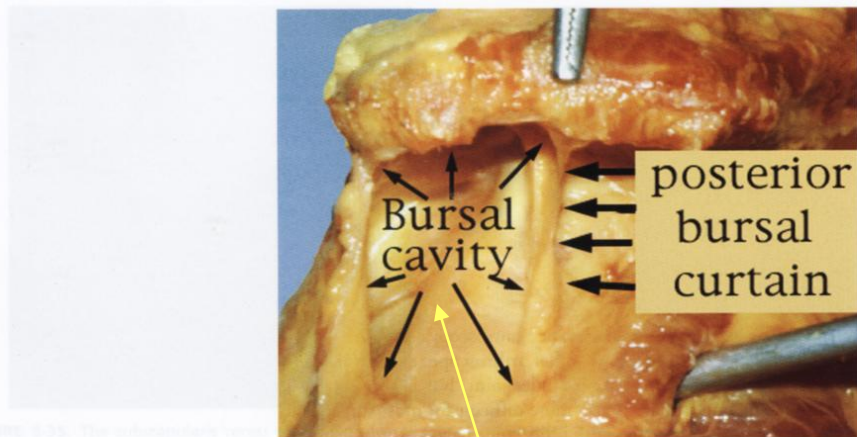


FIGURE 4-1. The bursal cavity is located under the anterior half of the acromion and extends well anteriorly and laterally, as seen in this cadaver specimen.

Khoang dưới mỏ cùng nằm dưới nửa trước của mỏ cùng và mở rộng nhiều về phía trước và ngoài



FIGURE 4-2. The weight is changed from the white cable to the yellow cable to adjust the arm position for bursoscopy.

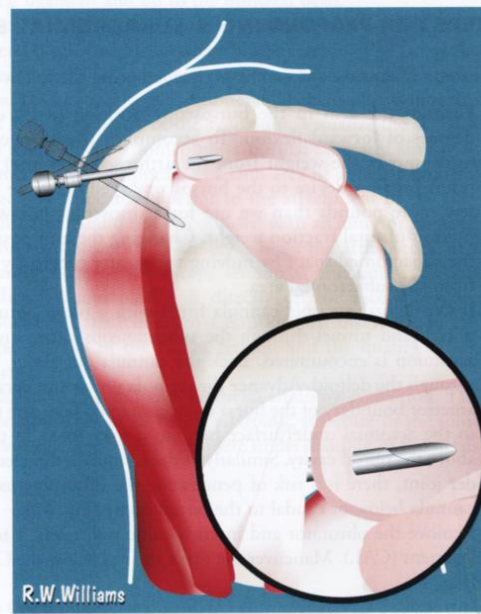


FIGURE 4-3. The technique for inserting the scope into the sub-acromial bursa requires an understanding of the position of the cavity.

Kỹ thuật đặt scope vào khoang dưới mỏ cùng đòi hỏi sự hiểu biết về vị trí của khoang

Thay đổi trọng lượng tạ kéo từ dây cáp trắng sang dây cáp vàng

Que hướng dẫn đút
vào cannula của ống
sói dưới dc quạ mỏ
cùng và ra ngoài lỗ
vào trước

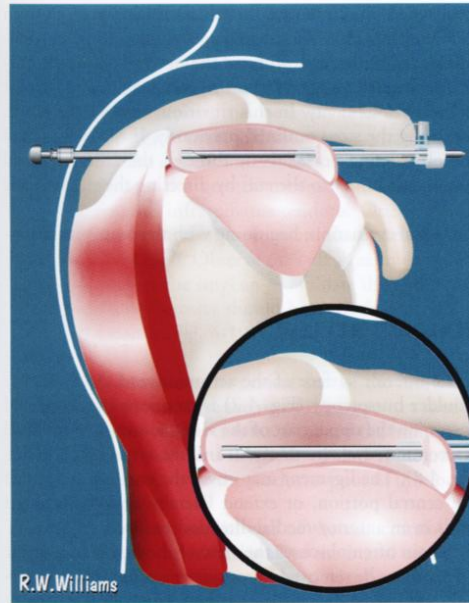


FIGURE 4-4. The guide rod is passed through the scope cannula, under the coracoacromial ligament and out the anterior portal.

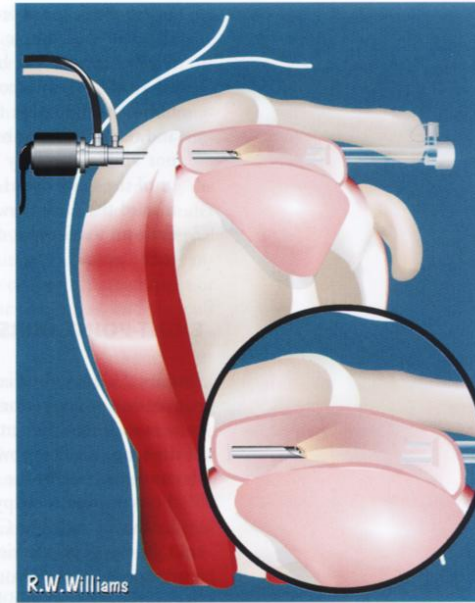


FIGURE 4-5. Pass a Crystal cannula (Arthrex, Inc., Naples, FL) over the anterior end of the guide rod and into the bursa.

Đưa ống cannula trong
suốt qua đầu tận trước
của que hướng dẫn và
vào khoang dưới mỏ
cùng

5. Insert the scope into the posterior portal, and activate the pump. Because the subacromial bursal cavity is located in the anterior half of subacromial space, the tip of the scope must be inserted below the anterior third of the acromion, anterior to the lateral orientation line drawn on the skin before surgery (Fig. 4-6).



FIGURE 4-6. The subacromial bursa, located below the anterior half of the acromion, is illuminated with the arthroscopic light.

Khoang dưới mỏ cùng nằm dưới nửa trước của
mỏ cùng, sáng lên nhờ nguồn sáng của ống soi

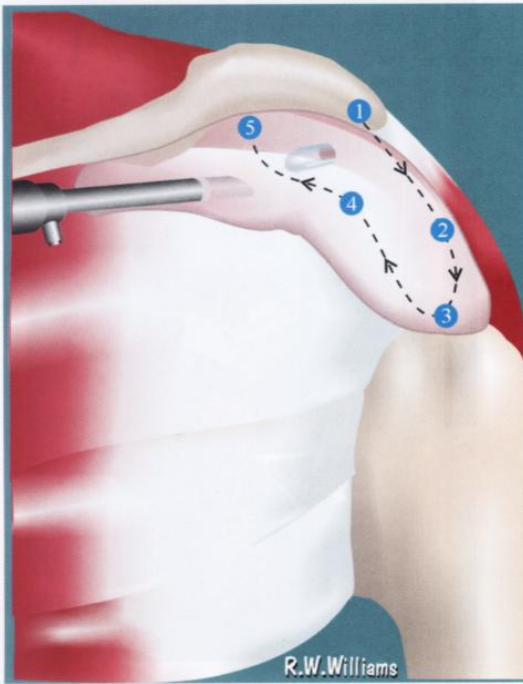


FIGURE 4-7. The first five steps of the bursal anatomy review occur with the scope in the posterior bursal portal.

1.Đc qua đòn bình thường - CAL (coracoacromial ligament)- trơn và có 1 lớp hoạt dịch mỏng bao quanh

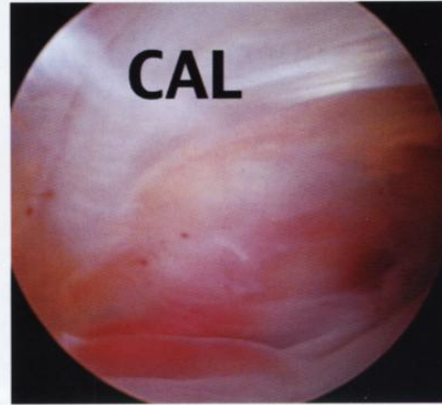


FIGURE 4-8. The normal coracoacromial ligament is smooth and has a delicate layer of surrounding synovium.

1. Mặt dưới mỏm và dây chằng qua mỏm cùng (CAL)
2. Bờ ngoài mỏm cùng và vách bao hoạt dịch ngoài
3. Mâu động lớn và nơi bám gân trên gai và dưới gai
4. vùng tối hạn của chóp xoay ở và ngay phía trong đối với nơi bám tận gân xương
5. Thành trong của khoang dưới mỏm mỏm

Lối vào phía sau khoang : ống kính phía sau và canulla thoát nước phía trước : có 5 bước quan sát



FIGURE 4-9. The lateral subacromial shelf divides the subacromial bursa into superior subacromial and lateral subdeltoid spaces.

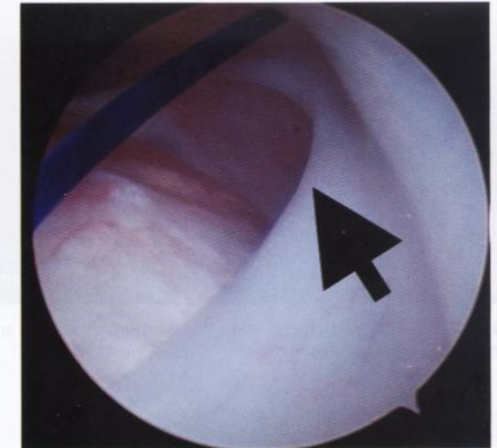


FIGURE 4-10. The rotator cuff attachment to the tuberosity should be smooth.

2.Vách dưới mỏm cùng phía ngoài chia khoang dưới mỏm cùng thành **khoang dưới cơ delta phía ngoài** và **khoang dưới mỏm cùng phía trên**

3.Nơi bám chóp xoay vào mấu động nên trơn láng

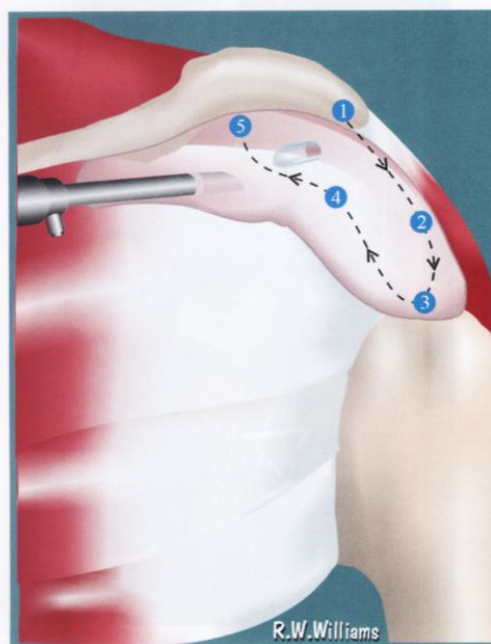


FIGURE 4-7. The first five steps of the bursal anatomy review occur with the scope in the posterior bursal portal.

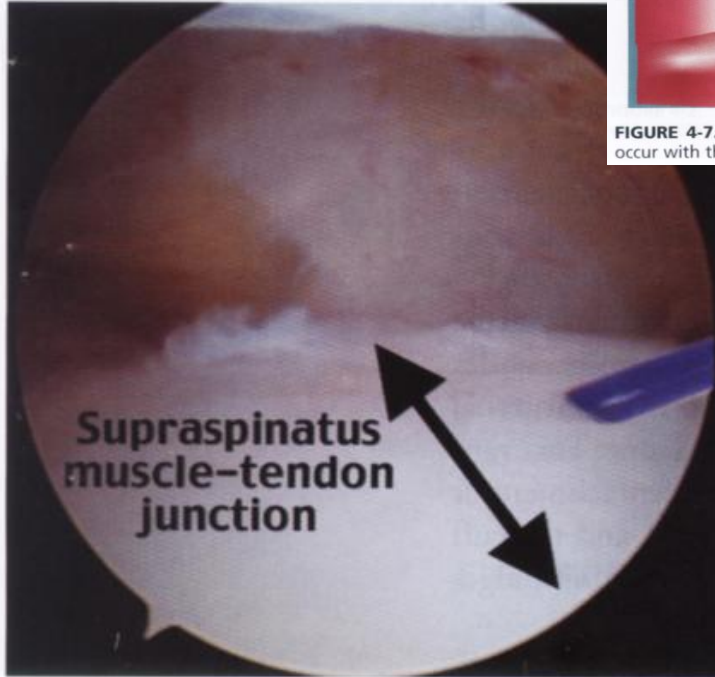


FIGURE 4-11. The tendon bone junction of the supraspinatus is the common location for early cuff tears and calcification.

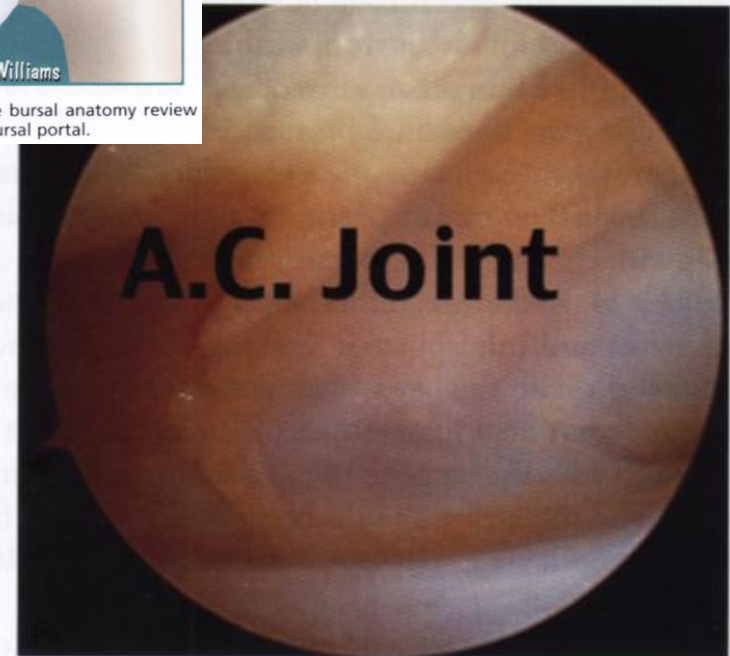


FIGURE 4-12. The medial wall of the bursa demarcates the sub-acromial and subclavicular spaces.

4.Nơi bám tận gân xương của gân trên gai:
vị trí thường bị vôi hóa & rách chóp xoay sớm

5.Thành trong của khoang là ranh giới giữa
khoang dưới mỏm cùng và khoang dưới xg đòn

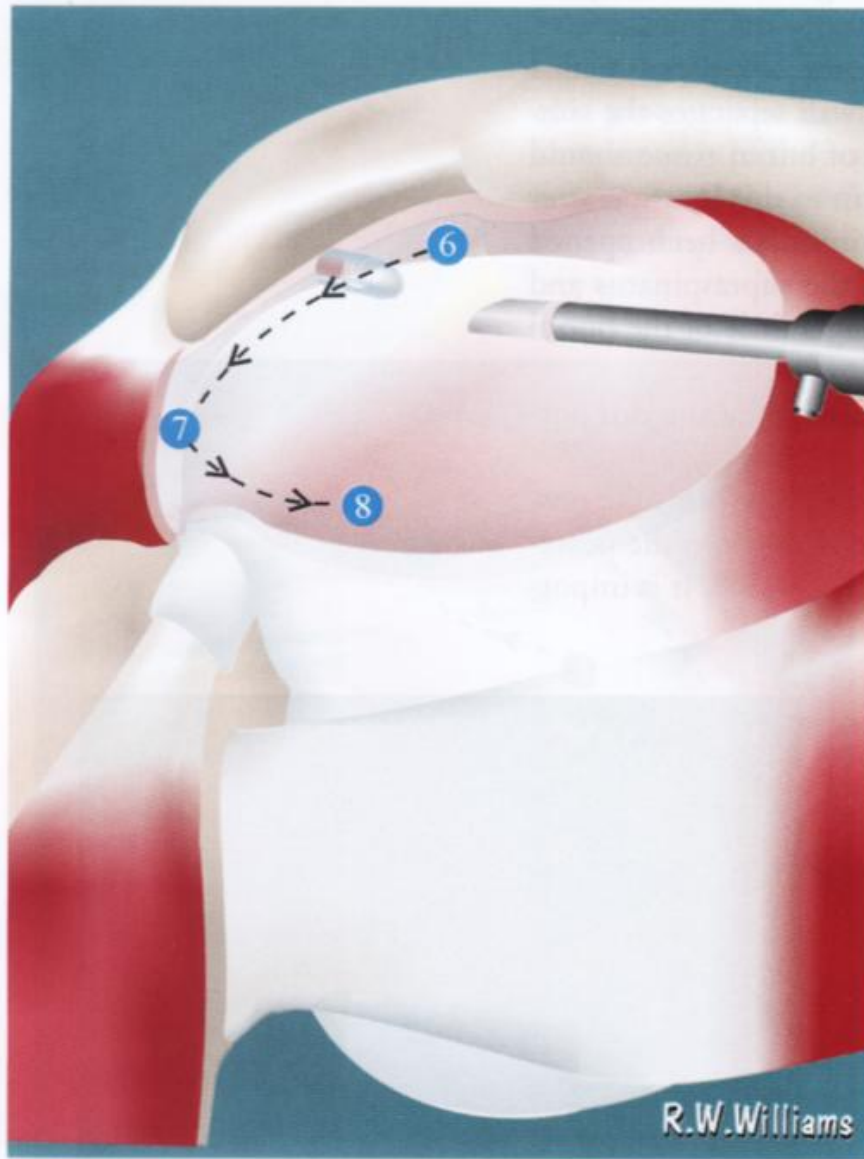


FIGURE 4-13. The final three steps for evaluation of the subacromial bursa are viewed from the anterior portal.

Đổi ống kính ra lỗ vào phía trước và canulla thoát nước ra lỗ vào sau : có 3 bước quan sát

6. Màn bao hoạt dịch sau

7. Phần sau của bám tận chóp xoay ở mẫu động

8. Chóp xoay phía trước, khoảng gian cơ chóp xoay và ngách bao hoạt dịch trước

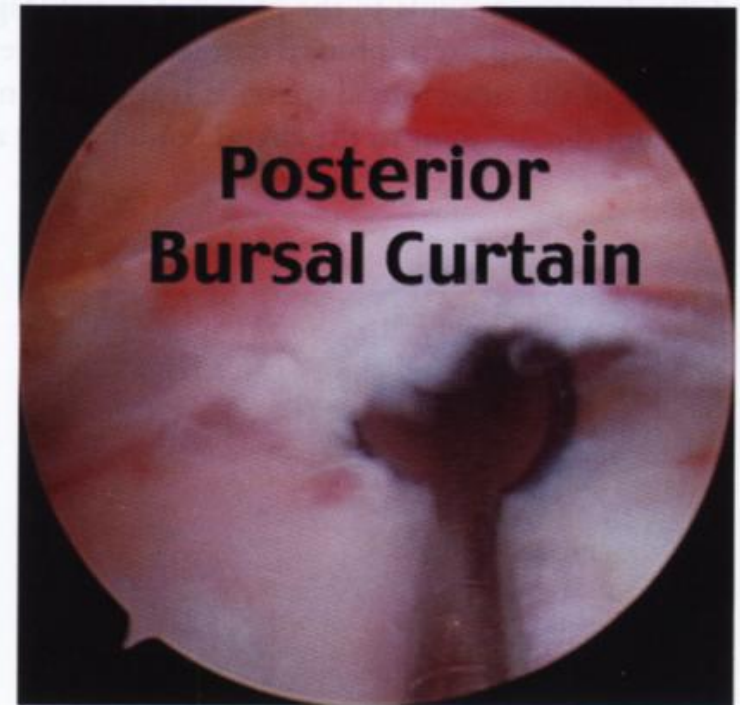


FIGURE 4-14. The posterior bursal curtain separates the subacromial space into anterior and posterior compartments.

6. Màn hoạt dịch phía sau chia khoang dưới mỏ cùng thành 2 ngăn trước và sau

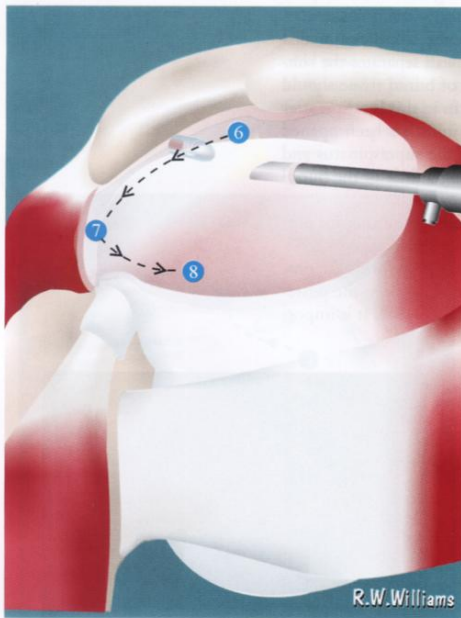


FIGURE 4-13. The final three steps for evaluation of the sub-acromial bursa are viewed from the anterior portal.

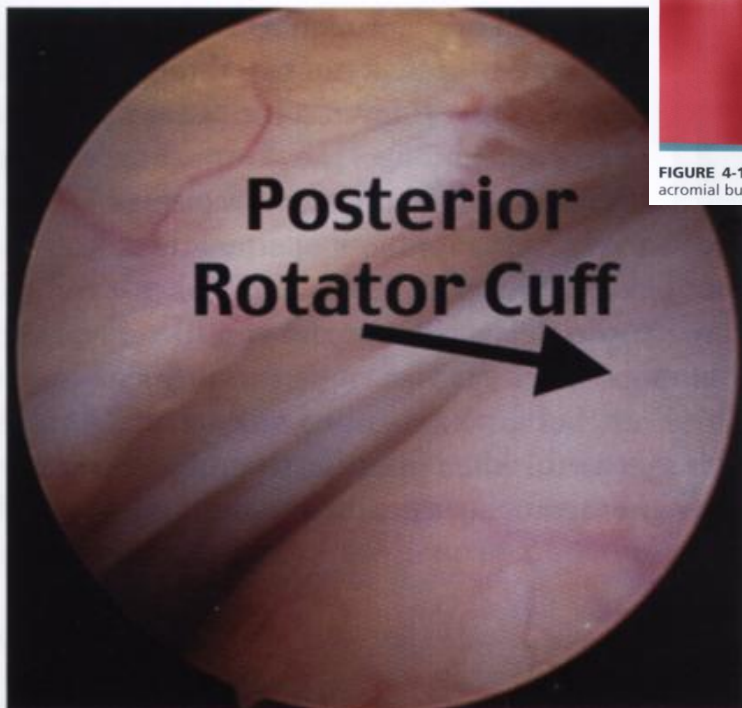


FIGURE 4-15. The posterior cuff is seen best from the anterior bursal portal.

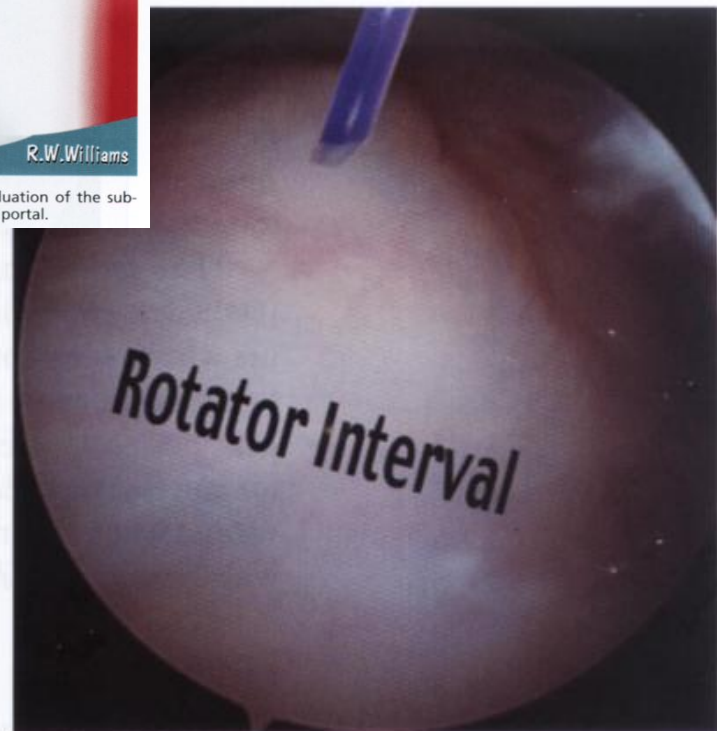


FIGURE 4-16. The anterior attachment of the cuff to the tuberosity and the rotator interval area is seen in position 8.

7. Chóp xoay phía sau được thấy rõ nhất ở lối vào khoang phía trước

8. Nơi bám tận phía trước của chóp xoay vào mấu động và khoảng gian chóp xoay

4 hình ảnh chụp XQ

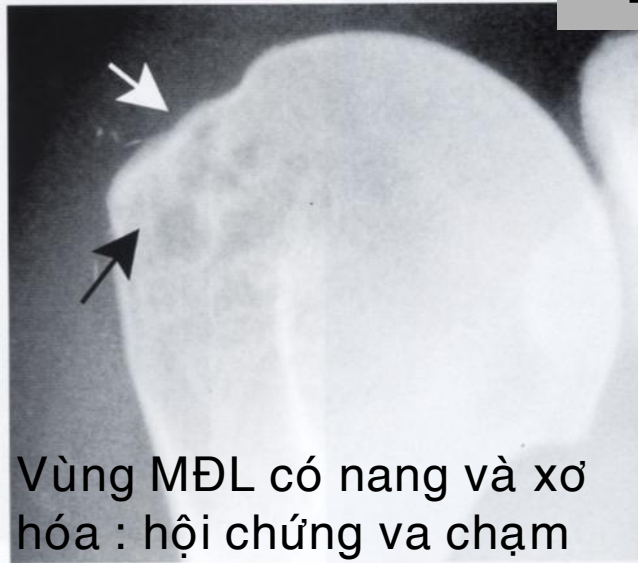


FIGURE 14-6. An anterior-posterior radiograph may show sclerosis and cysts in the area of the greater tuberosity when there has been chronic impingement.

XQ thẳng
(trước sau)



FIGURE 14-7. A subacromial keel is an aggressive spur that appears as a convexity under the acromion on the anterior-posterior radiograph.

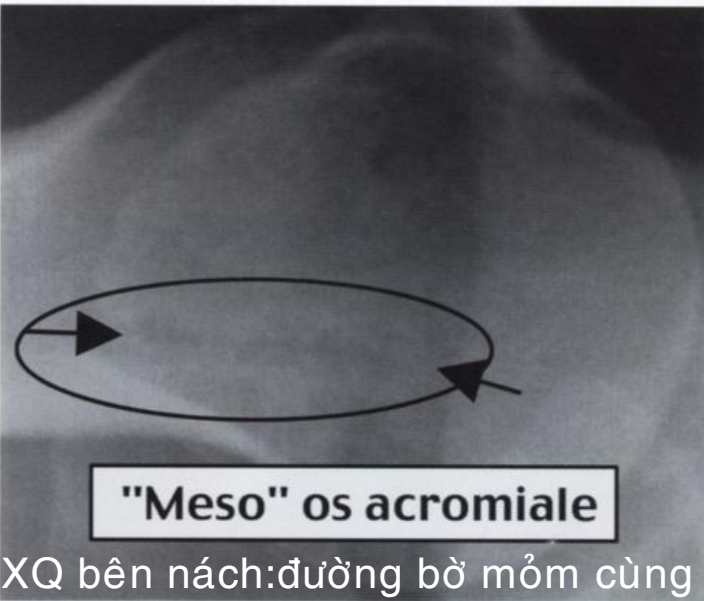


FIGURE 14-8. An axillary radiograph is the best projection for diagnosing an os acromiale.

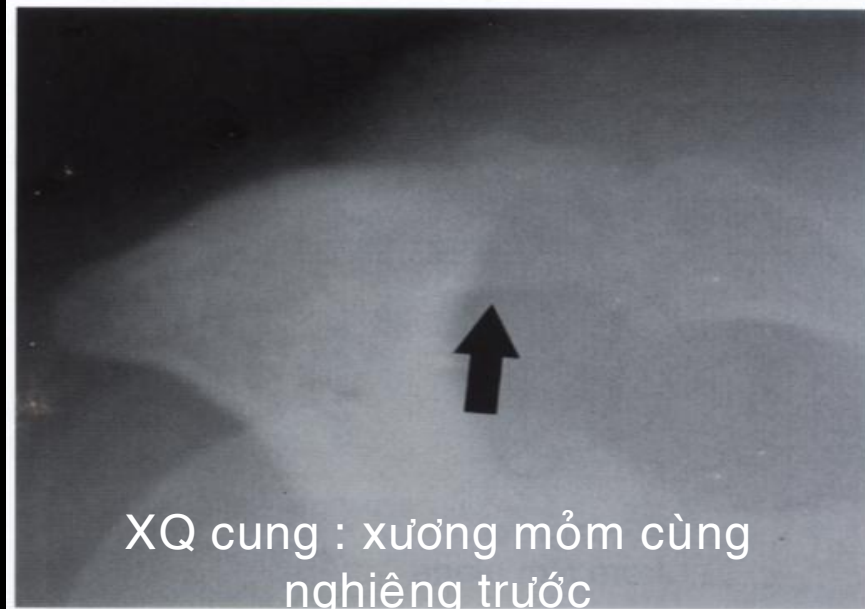


FIGURE 14-9. The arch view shows that this os acromiale is tilted anteriorly.

Phân loại Bigliani và Morrison : 3 type

Loại 1 : mặt dưới mỏm cùng phẳng tạo khoảng cách xa với chỏm xương cánh tay

Loại 2 : mặt dưới lồi, hơi cong tạo song song với đường bờ chỏm cánh tay

Loại 3 : có gai xương phía trước nhô ra hay nhọn xuống dưới làm hẹp lối ra của cơ trên gai khi cơ đi ra hố trên gai

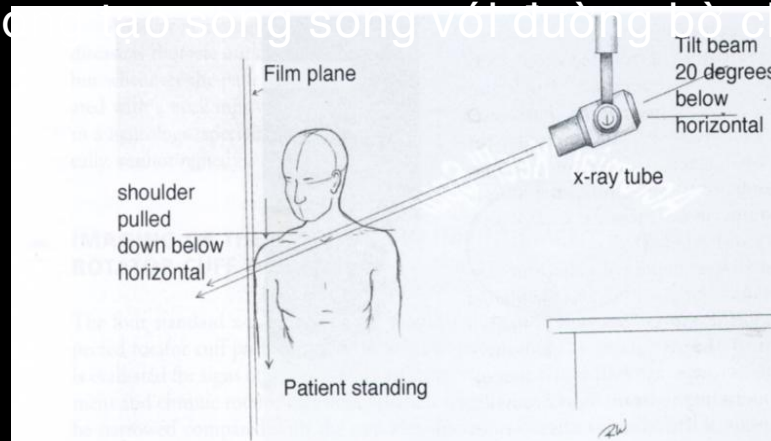


FIGURE 14-10. The proper alignment of the radiograph for a perfect acromial outlet view must be exact and reproducible.

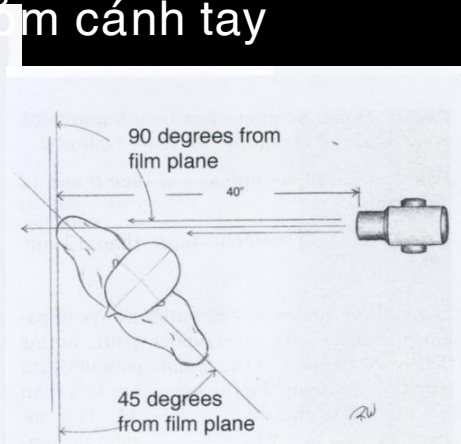


FIGURE 14-11. The proper alignment of the radiograph for a perfect acromial outlet view must be exact and reproducible.



FIGURE 14-12. The proper projection of the arch view is essential for evaluating the acromial undersurface.



FIGURE 14-13. Three important checkpoints are needed to ensure an acceptable arch-view radiograph.

Theo Stephen J.Snyder, có biến đổi phân loại theo độ dày của mỏm mỏm đo ở điểm tương ứng với bờ sau của khớp mỏm đòn hay điểm nối 1/3 giữa và trước của mỏm cùng : có 3 loại

Loại A :

mỏm cùng mỏng < 8mm

Loại B :

độ dày mỏm cùng trung bình, 8-12 mm

Loại C :

mỏm cùng dày > 12mm

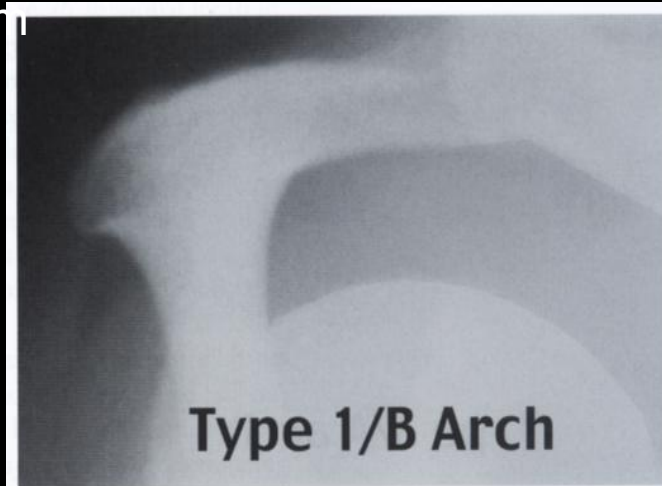


FIGURE 14-14. The type 1 acromion.

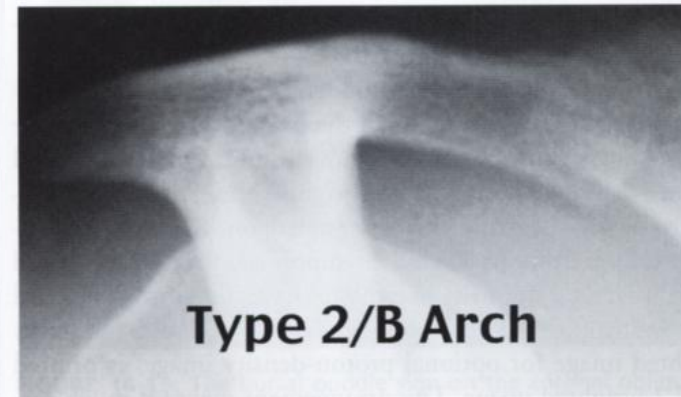


FIGURE 14-15. The type 2 acromion.

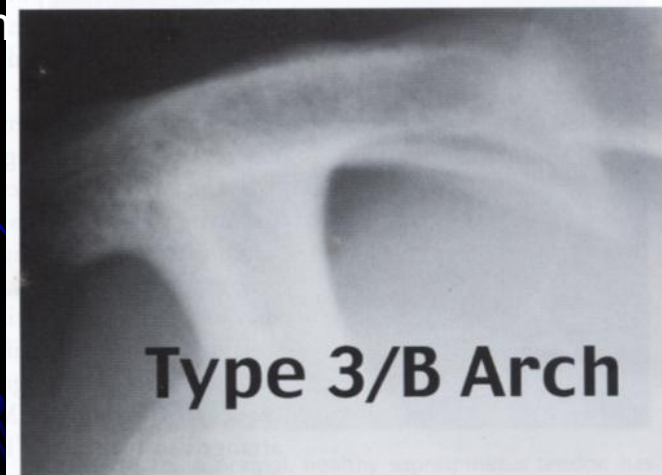


FIGURE 14-16. The type 3 acromion.

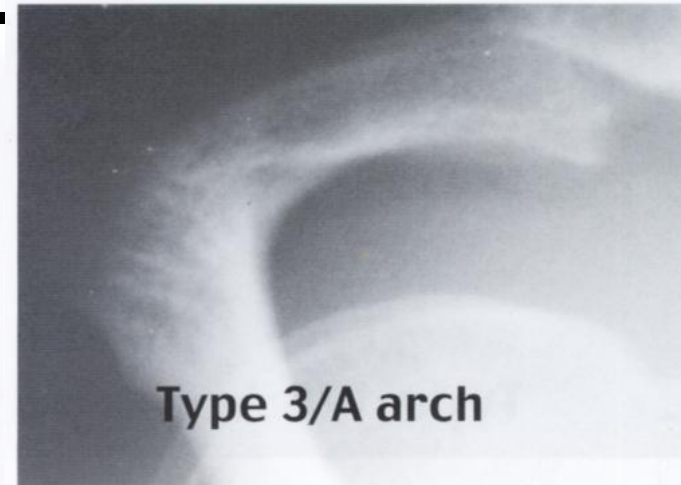


FIGURE 14-17. The type 3A acromial arch is very thin and at risk for iatrogenic fracture during decompression surgery.

Phân loại Bigliani và Morrison : 3 loại (1,2,3)

Phân loại theo bề dày của mỏm cùng : 3 loại (A,B,C)

Kết hợp 2 phân loại

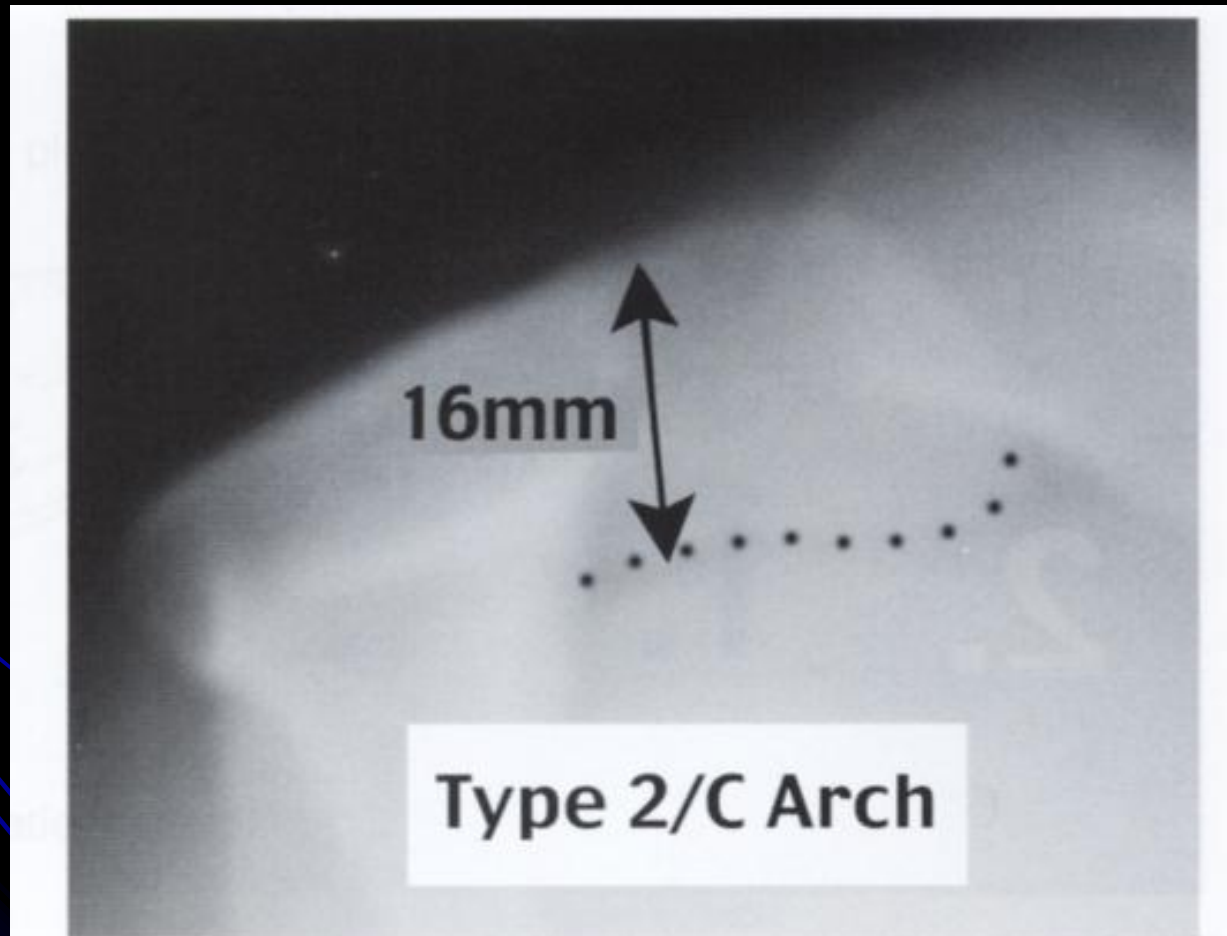


FIGURE 14-18. A type 2C acromion may compromise the rotator cuff space without a spur.

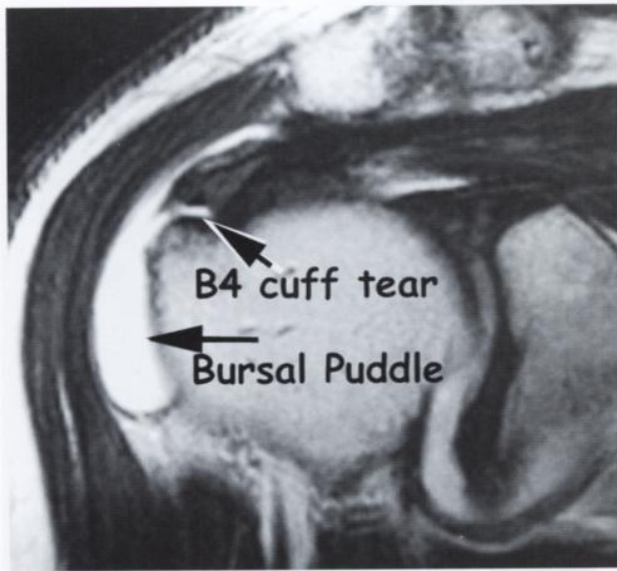


FIGURE 14-19. The bursal puddle sign on the coronal oblique view is considered pathognomonic for a bursal-side rotator cuff tear.

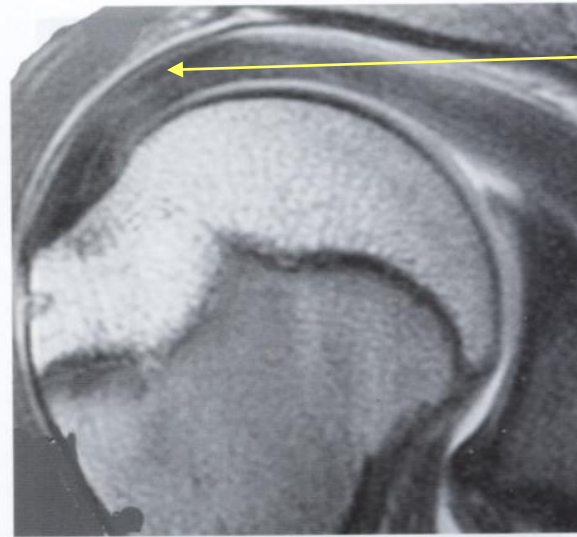


FIGURE 14-20. A normal, healthy supraspinatus tendon has a smoothly tapering appearance on the coronal image, with intermediate- and low-intensity signal indicating the tendon.

Cơ trên gai bình thường

Rách cơ chóp xoay

Cơ trên gai rách 1 phần

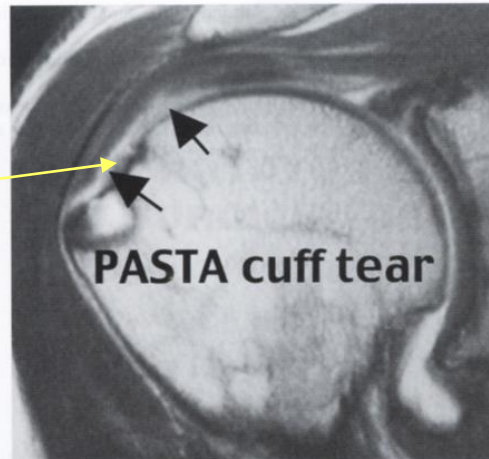


FIGURE 14-31. A partial articular supraspinatus tendon avulsion (PASTA) is not seen well on standard magnetic resonance imaging but can be readily diagnosed with magnetic resonance arthrography using an intraarticular gadolinium injection.

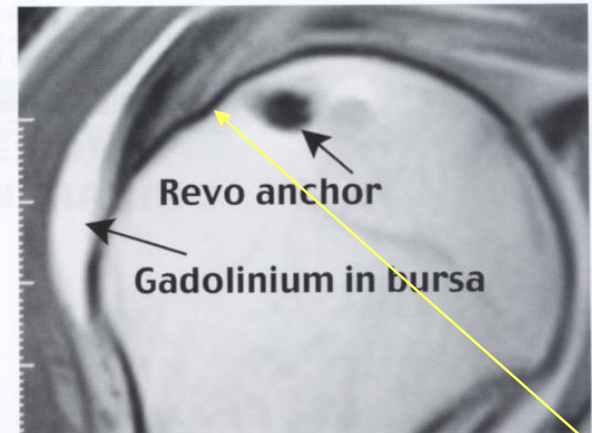


FIGURE 14-32. The postoperative rotator cuff is more clearly evaluated after injecting gadolinium. The contrast coats both sides of the healed tendon.

Gân cơ trên gai đã lành sau phẫu thuật

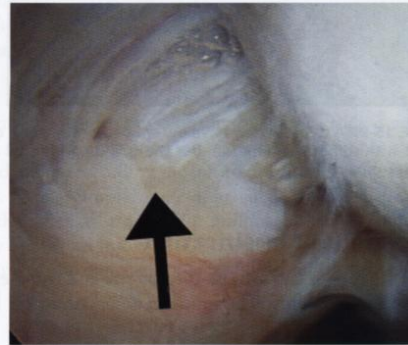


FIGURE 15-4. A type A-2 rotator cuff lesion has minimal fraying in a small area on the undersurface of the cuff but no significant tendon fragmentation.

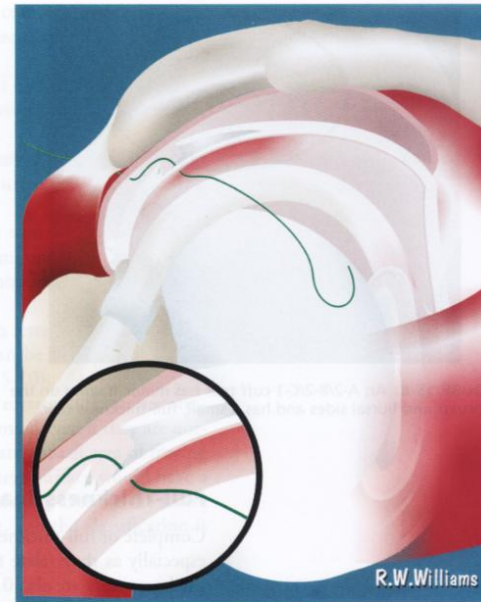


FIGURE 15-5. A bursal flap tear is designated B-4 and is essentially the same as to a full-thickness lesion.

practical purposes, a class 4 tear is tantamount to a full-thickness lesion even though there are a few remaining fibers (Fig. 15-5). It is important to remember that, even though a tear may be only partial, it may not necessarily be minor. A monk's hood tear is an example of a B-4 tear (Fig. 15-6). A partial articular supraspinatus tendon avulsion (PASTA) is an A-3 or A-4 tear (Fig. 15-7).

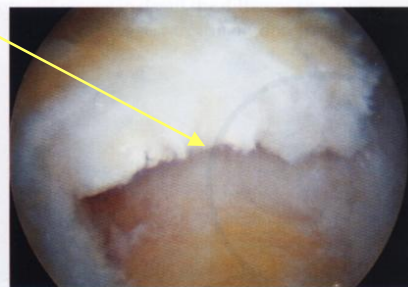


FIGURE 15-6. A type B-4 partial tear is a large flap tear on the bursal side of the tendon. It often has frayed edges that require decompression and repair.

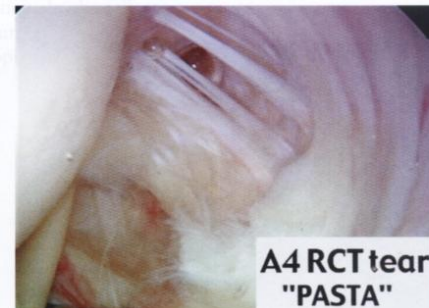


FIGURE 15-7. An A-4 or PASTA tear is a significant flap tear on the articular side of the rotator cuff that requires repair.

Cơ trên gai rách 1 phần

Phần 1(tt) Một số thay đổi bình thường của các cấu trúc ở khớp vai

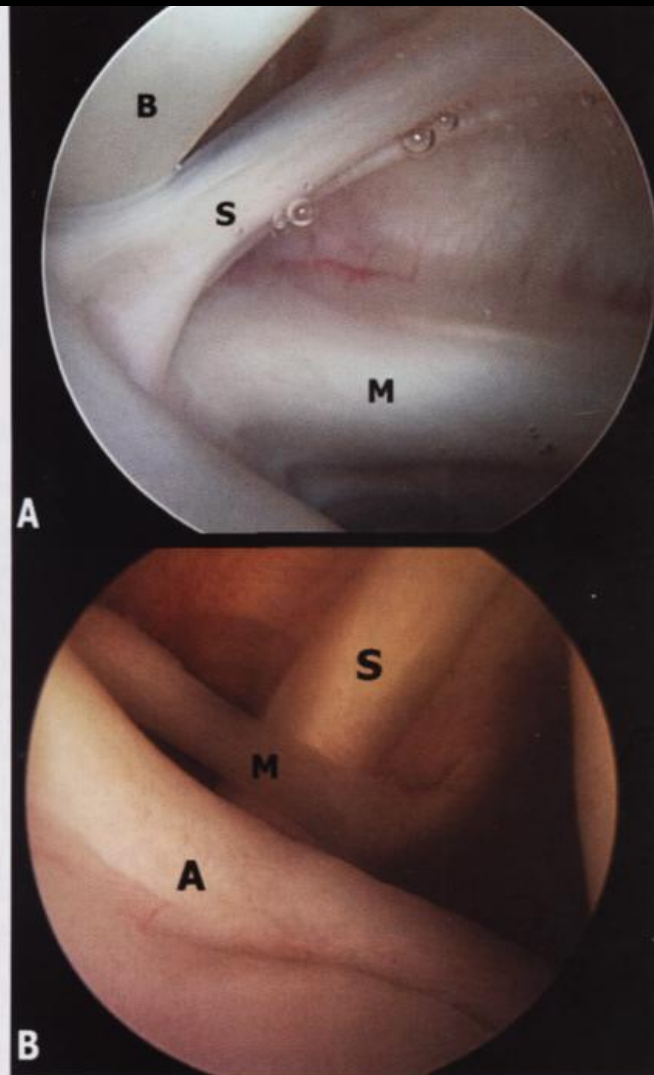


Figure 9-9 The middle glenohumeral ligament (MGHL) is variable in its appearance and consistency. It crosses the superior rolled edge of the subscapularis tendon at a 60-degree angle. A, Cordlike MGHL with a high takeoff from the superior glenoid. B, Thin MGHL with its typical relationship to the subscapularis tendon. A, anterior labrum; B, biceps; M, middle glenohumeral ligament; S, superior glenohumeral ligament.

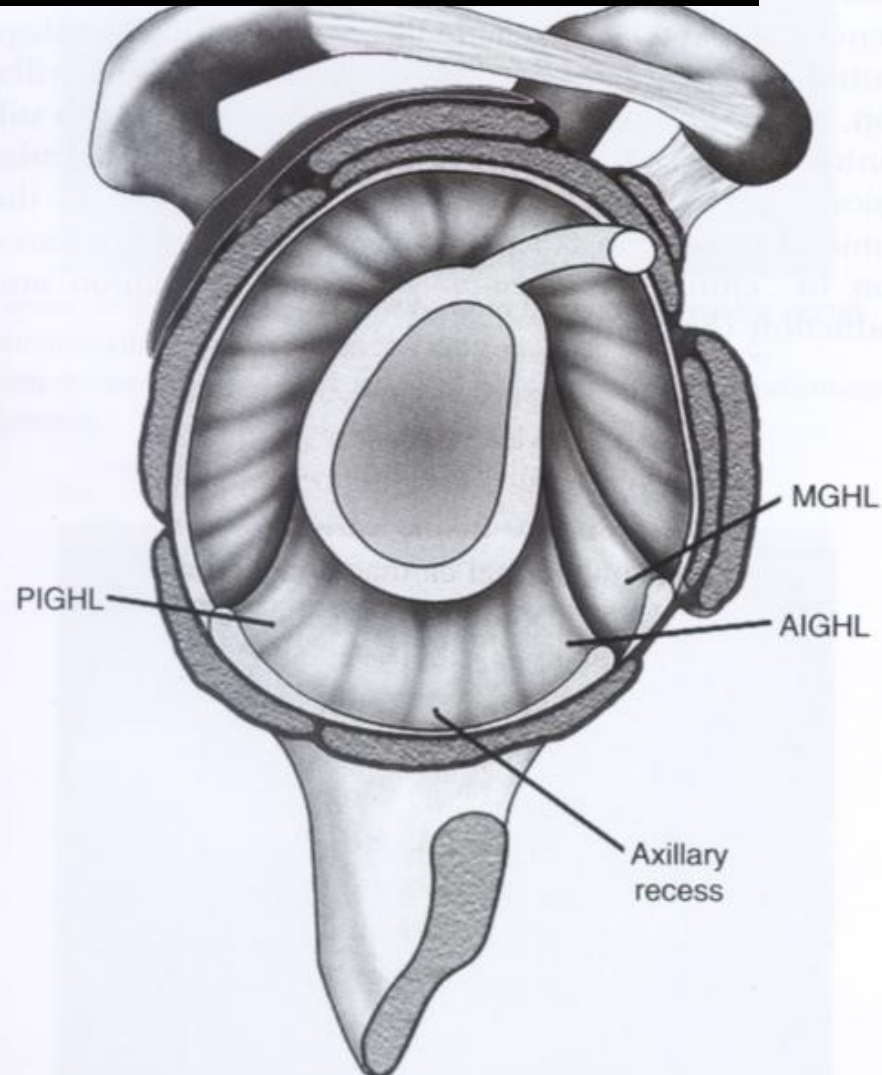
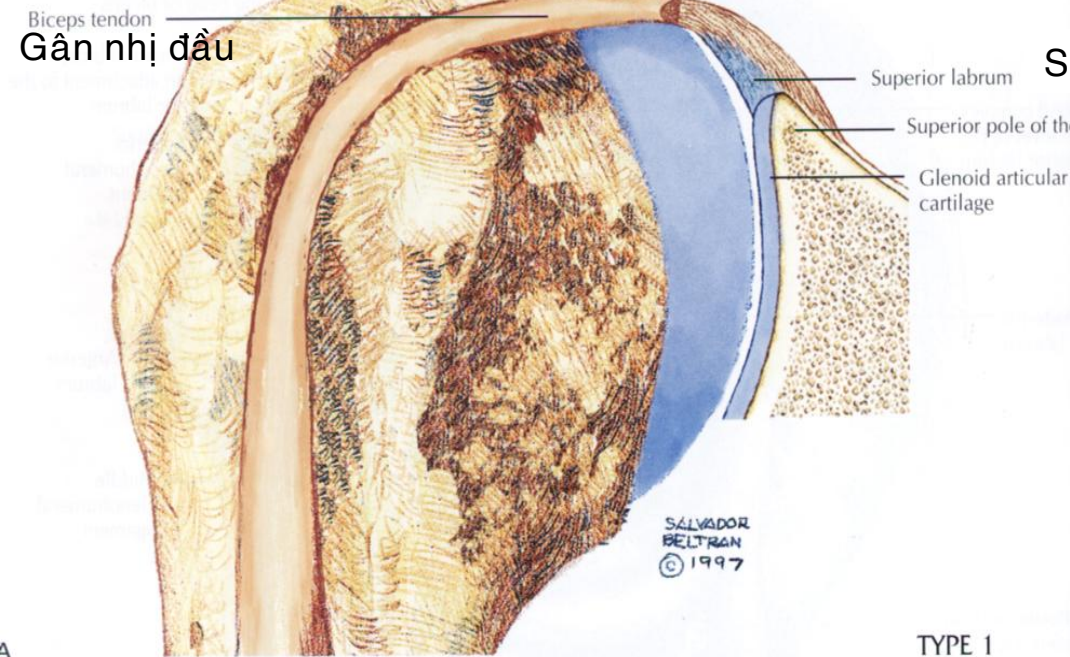


Figure 9-11 The inferior glenohumeral ligament (IGHL) forms a sling that cradles the inferior portion of the shoulder joint, with thickenings at its anterior and posterior edges. Its function is dependent on the position of the arm. AIGHL, anteroinferior glenohumeral ligament; MGHL, middle glenohumeral ligament; PIGHL, posteroinferior glenohumeral ligament.

Phức hợp sụn viền gân nhị đầu loại 1, bình diện trước



Sụn viền trên

cực trên của ổ chảo

Sụn khớp ổ chảo

Loại 2

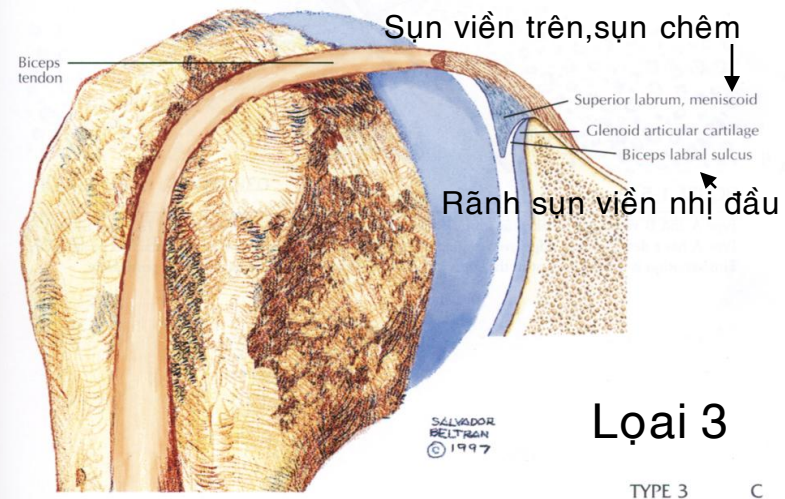
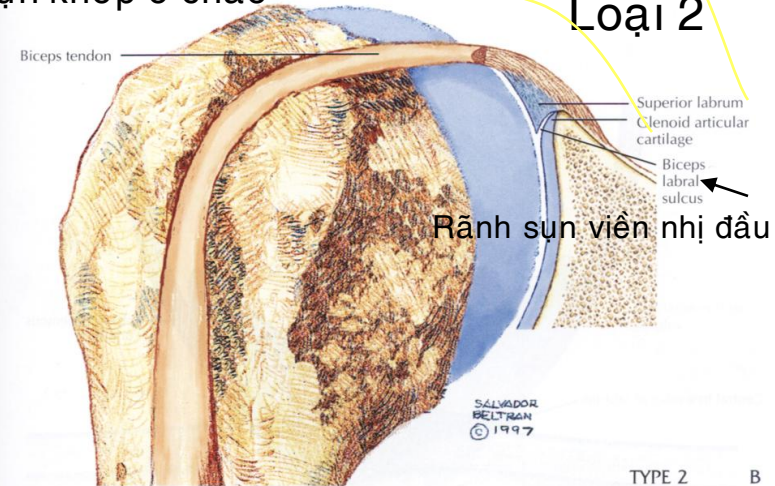


FIGURE 1-50B,C CONTINUED

Sụn viền loại A, cắt dọc

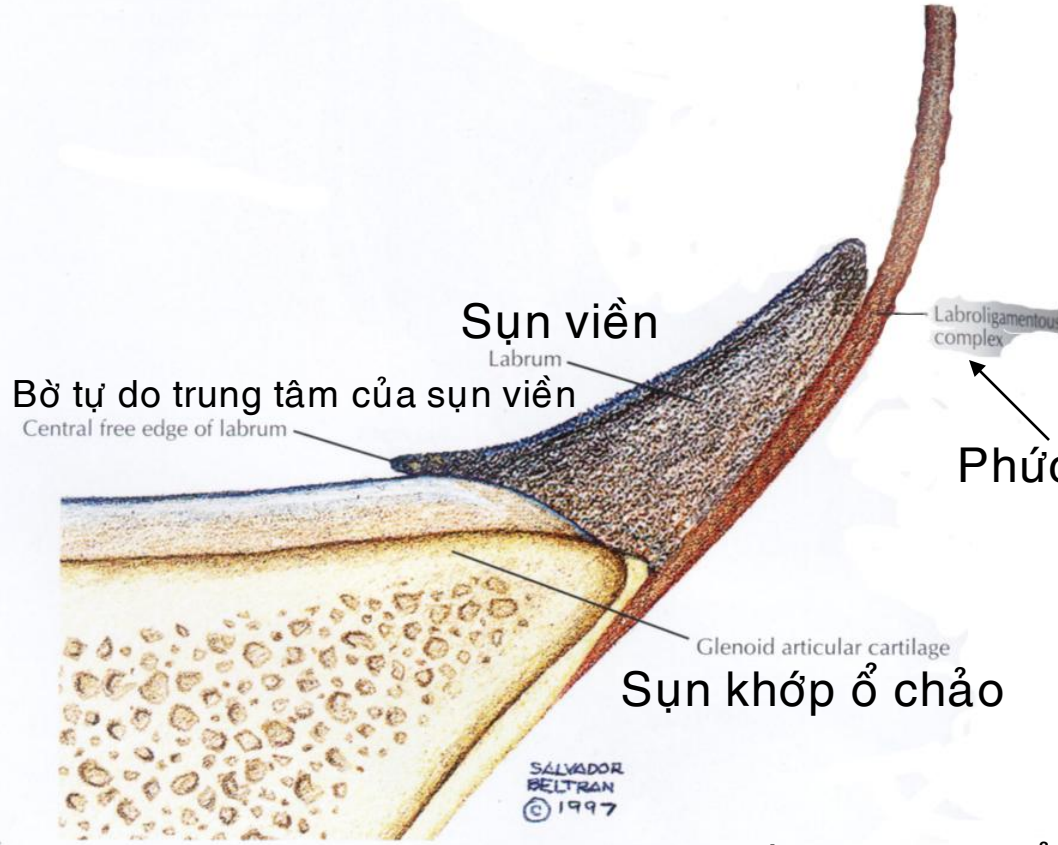


FIGURE 1-51A

Bám trung tâm của sụn viền

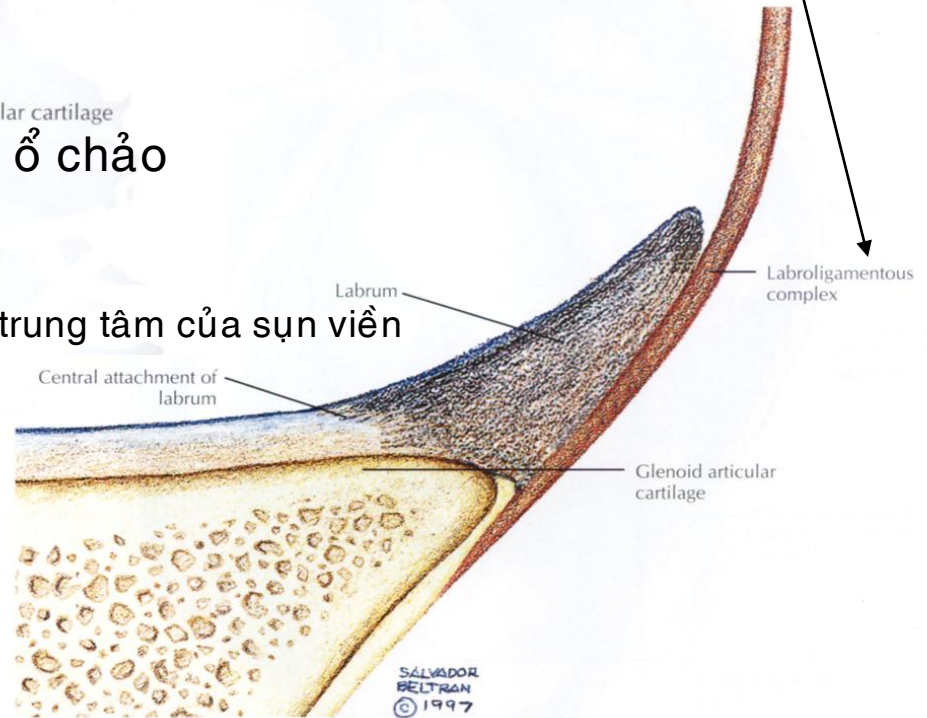


FIGURE 1-51B CONTINUED

(B) The Type B labrum is attached both centrally and peripherally and is adherent to the articular surface without a free edge.

Sụn viền loại B, cắt dọc

Sụn viền bám cả trung tâm và ngoại vi vào sụn khớp không có bờ tự do

Lỗ dưới sụn viền , bình diện bên

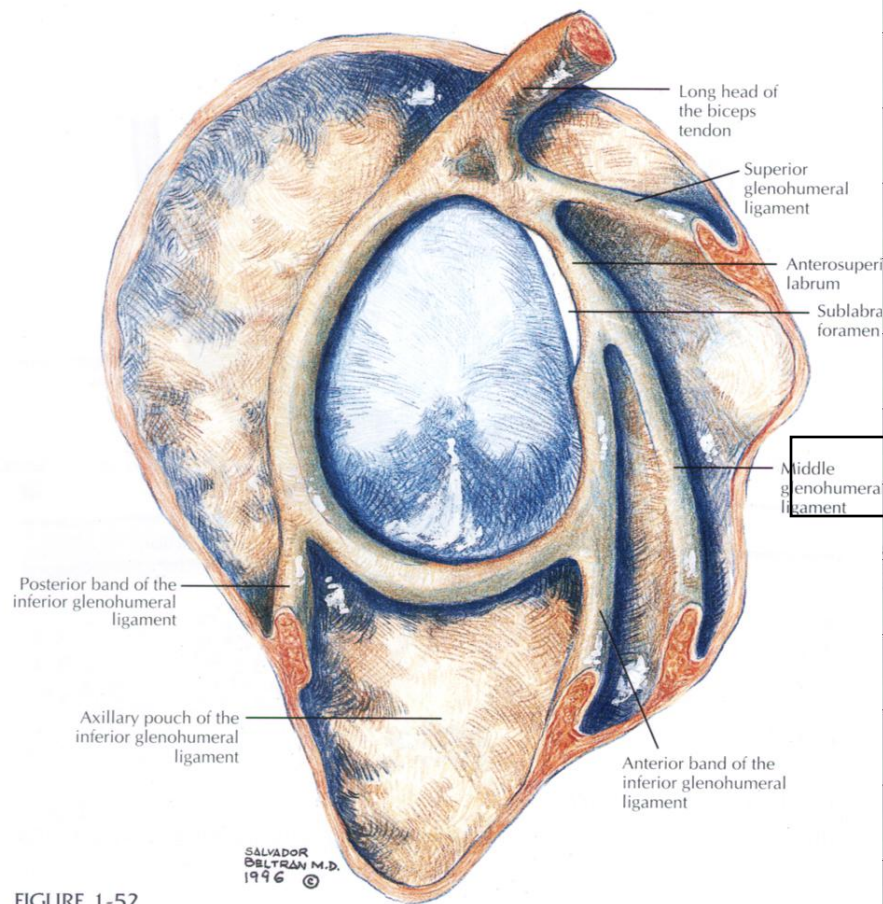


FIGURE 1-52

Sublabral foramen or hole. The sublabral foramen represents a normal variation with a relative lack of attachment or separation of the labrum from the glenoid rim in the anterosuperior quadrant superior to the glenoid equator. For related MR, arthroscopy, and surgical anatomy image see Figure 1-84.

Phức hợp Buford, bình diện bên

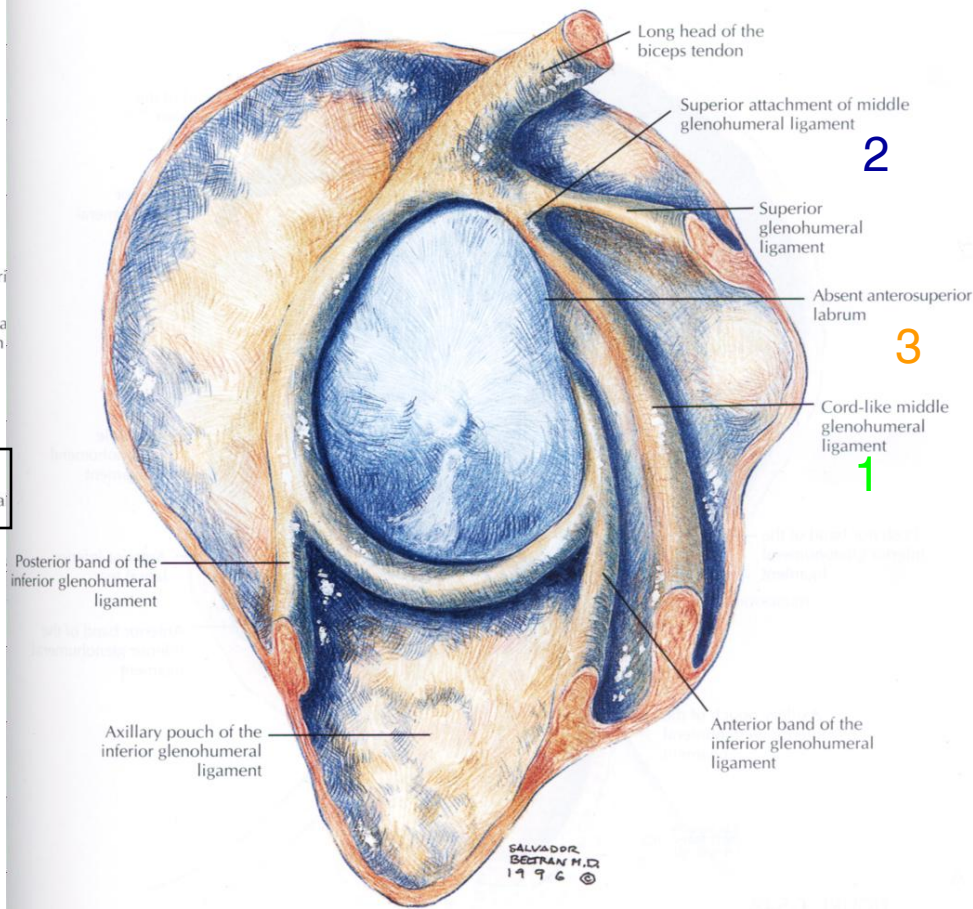


FIGURE 1-53

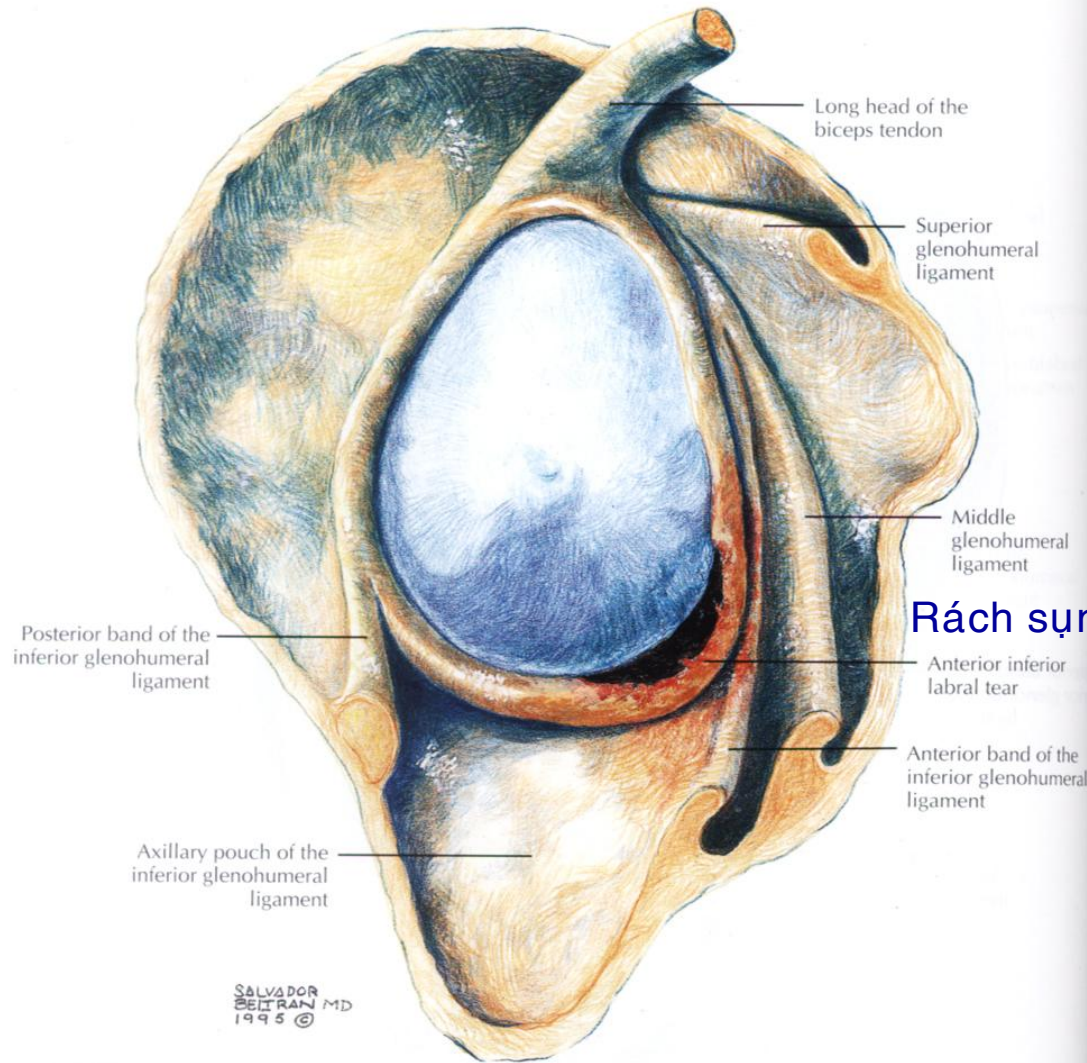
Buford complex. The Buford complex consists of three elements: (1) a cord-like middle glenohumeral ligament, (2) a middle glenohumeral ligament that attaches directly to the superior labrum anterior to the biceps (at the base of the biceps anchor), and (3) an absent anterosuperior labrum. For related MR, arthroscopy, and surgical anatomy image see Figure 1-85.

Lỗ dưới sụn viền là biến thể bình thường của không bám tương đối hay tách rời của sụn viền khỏi bờ ổ chảo ở vị trí $\frac{1}{4}$ trên trước

Phức hợp Buford gồm 3 phần: 1. ổ chảo cánh tay giữa dạng dây, 2. ổ chảo cánh tay giữa bám trực tiếp vào sụn viền trên phía trước gân nhị đầu và 3. không có sụn viền trên trước

Phần 2. Một số hình ảnh tổn thương vùng khớp vai

Hình bên



A

FIGURE 1-54A

Tổn thương Bankart

Hình dọc trục

Rách sụn viền dưới trước

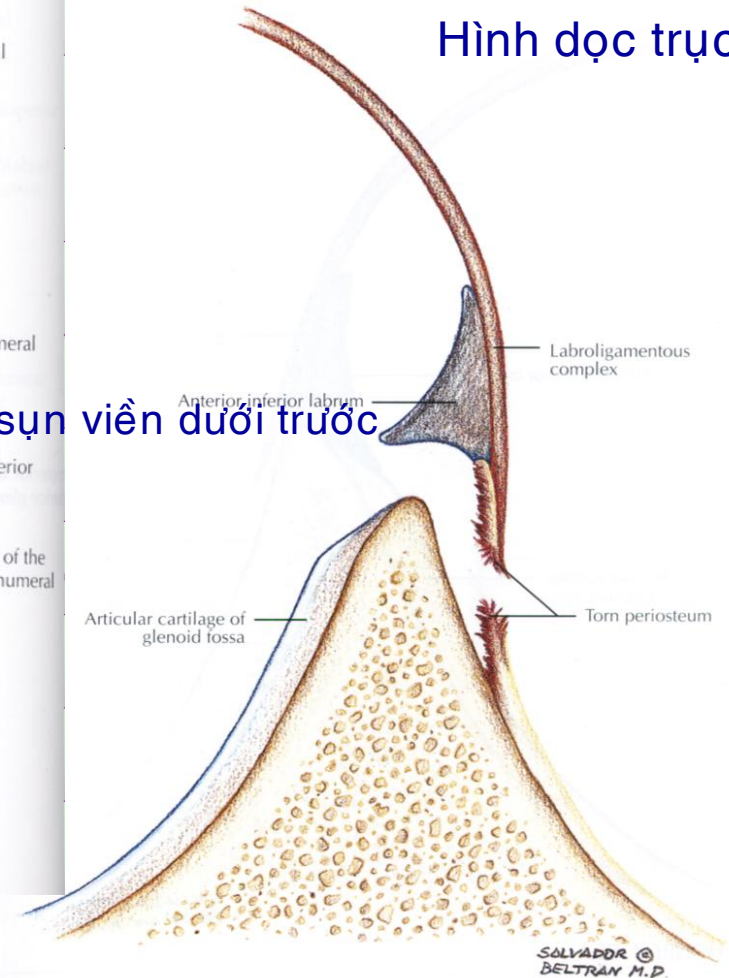


FIGURE 1-54B CONTINUED

For related MR, arthroscopy, and surgical anatomy image see Figure 1-86.

Tổn thương Perthes

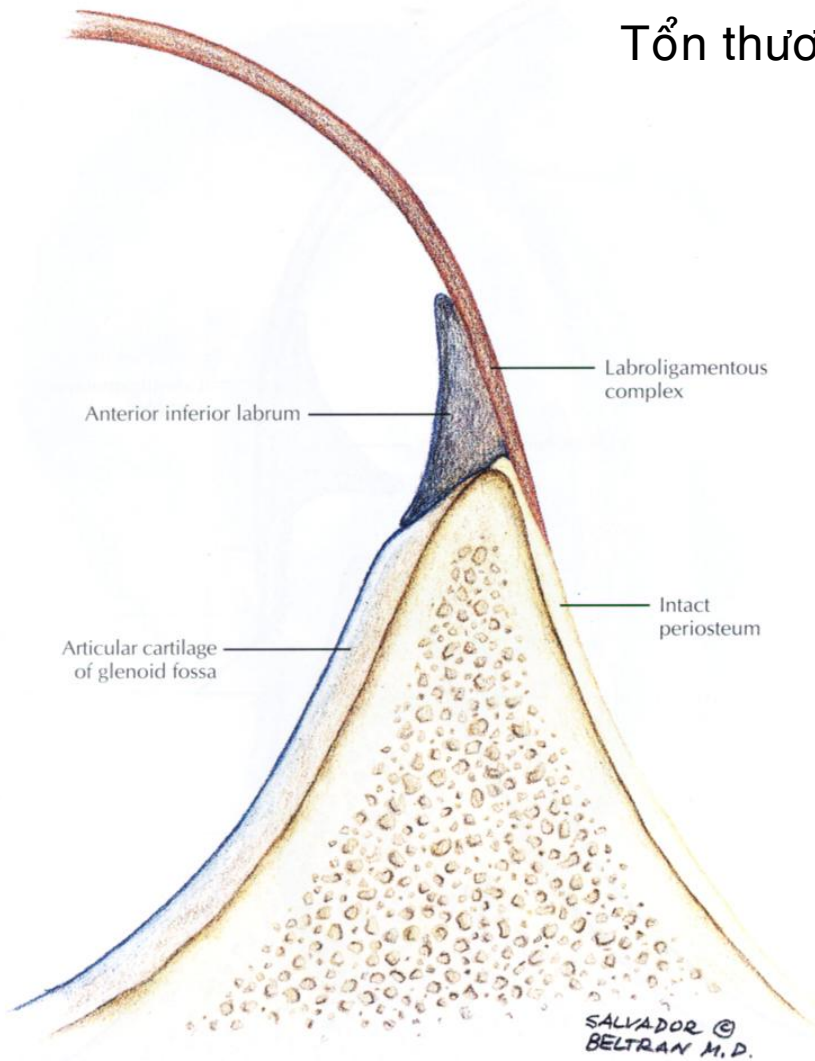


FIGURE 1-55A

(A) Normal anterior labrum and capsulolabral complex. For related MR, arthroscopy, and surgical anatomy image see Figure 1-77.

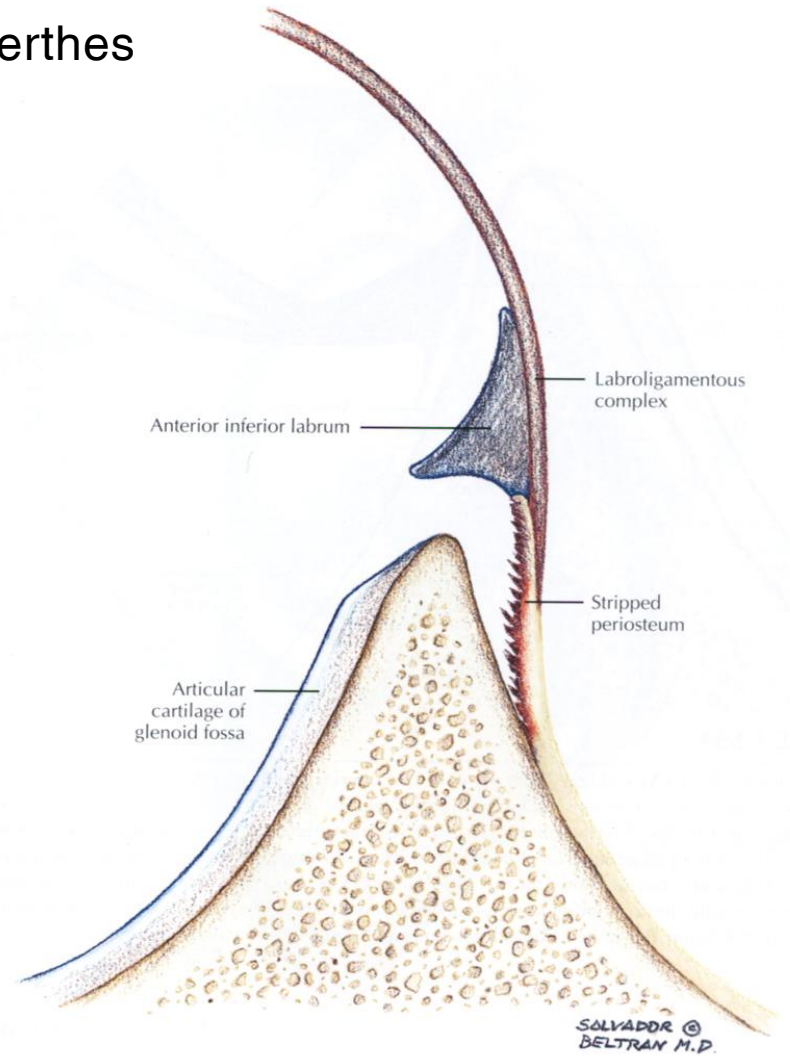


FIGURE 1-55B CONTINUED

(B) Perthes lesion with medially stripped but intact scapular periosteum. The Perthes lesion represents a labroligamentous avulsion. For related MR, arthroscopy, and surgical anatomy image see Figure 1-77.

Là tổn thương giật rứt dây chằng sụn viền

Bình diện dọc trục

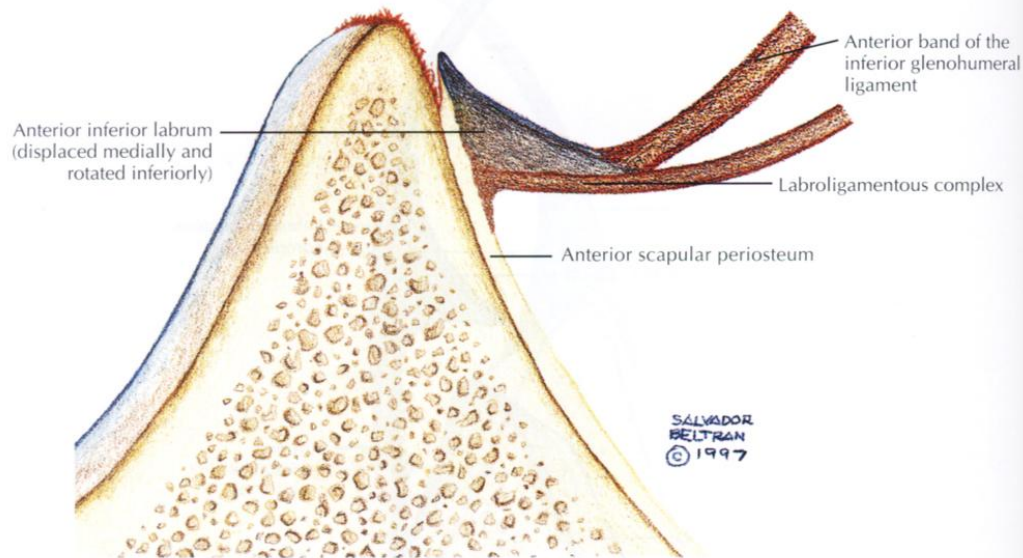


FIGURE 1-56A

ALPSA lesion. Axial (A) and lateral (B) views of the anterior labroligamentous periosteal sleeve avulsion (ALPSA lesion), which represents an avulsion of the inferior glenohumeral ligament through its anterior band attachment to the anterior labrum. The ALPSA lesion differs from the Bankart lesion, in that the ALPSA lesion has an intact anterior scapular periosteum allowing the labroligamentous structures to displace medially and rotate inferiorly on the scapular neck. There may be synovial fibrous tissue deposition between the medial displaced inferior glenohumeral ligament labral complex and the glenoid margin in the chronic ALPSA lesion. For related MR, arthroscopy, and surgical anatomy image see Figure 1-87.

Tổn thương ALPSA giạt rứt trượt trước
màng xương dây chằng sụn viền

Bình diện bên

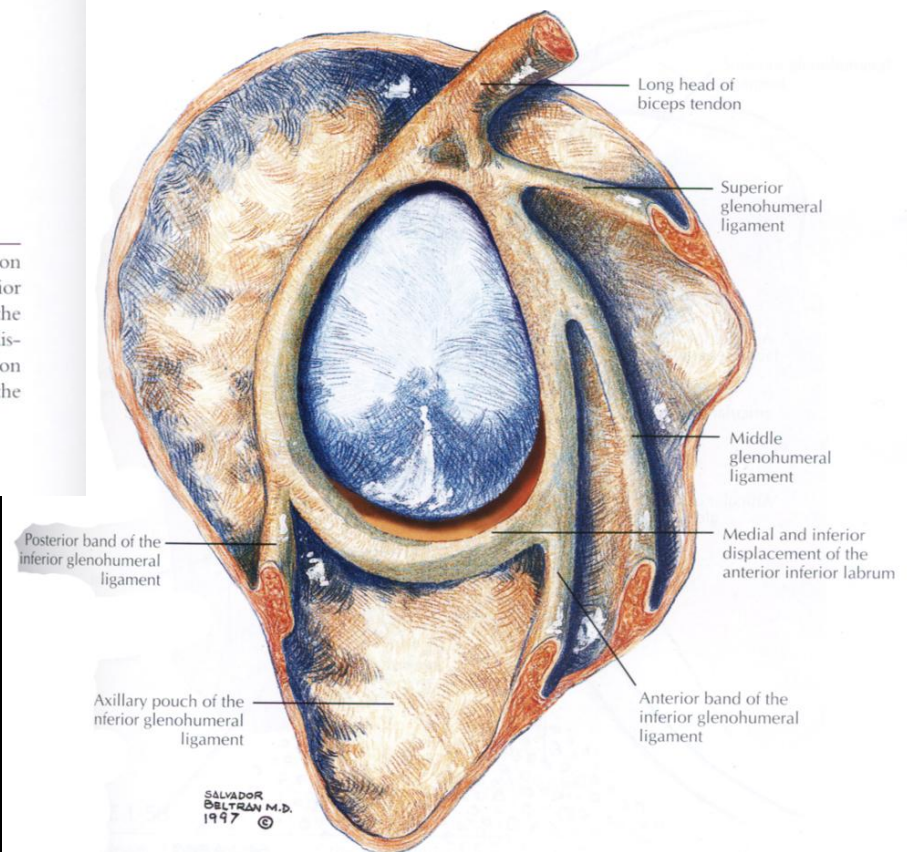


FIGURE 1-56B CONTINUED

For related MR, arthroscopy, and surgical anatomy image see Figure 1-87.

Tổn thương GLAD, cắt dọc

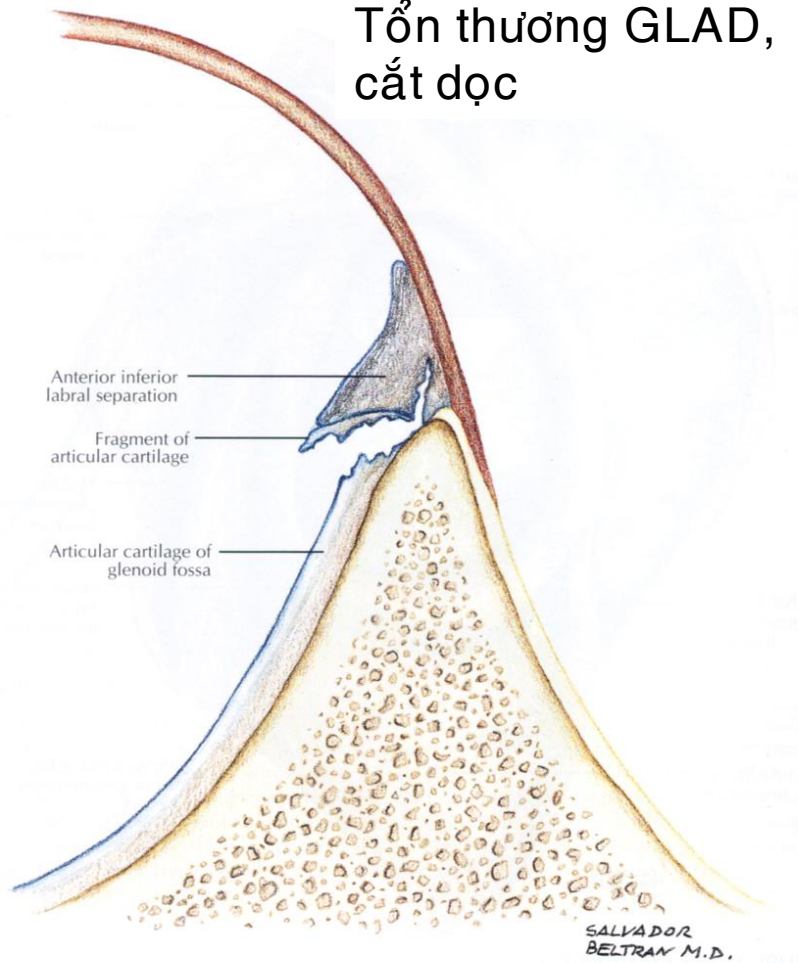


FIGURE 1-57

GLAD lesion. Glenolabral articular disruption (GLAD lesion) is a superficial anterior inferior labral tear, associated with an anterior inferior glenoid articular cartilage injury.

Tổn thương mặt khớp sụn viền ổ chảo GLAD: rách sụn viền dưới trước nông

Tổn thương HAGL, mặt trước

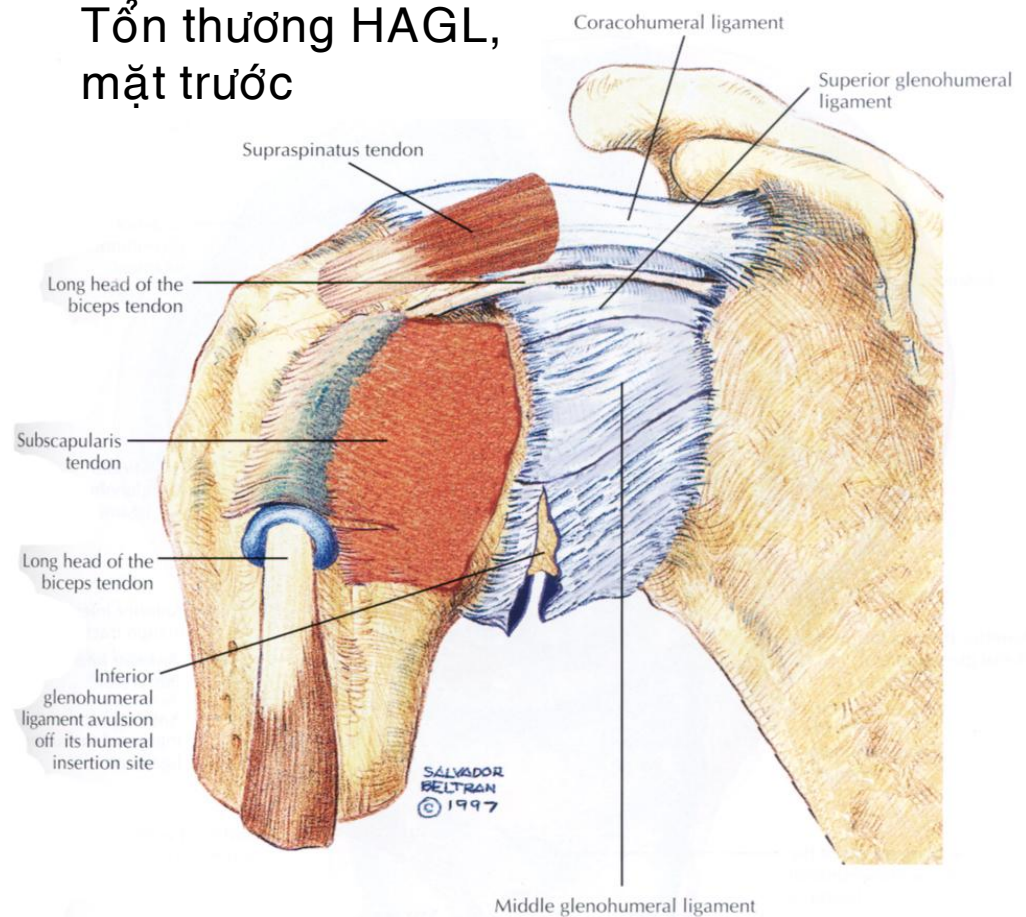


FIGURE 1-58

HAGL lesion. Humeral avulsion of the glenohumeral ligament (HAGL lesion) involves tearing of the anatomic humeral neck attachment of the inferior glenohumeral ligament. The axillary pouch may display a j-shaped configuration (from the coronal perspective) as the humeral attachment of the inferior glenohumeral ligament drops inferiorly. For related MR, arthroscopy, and surgical anatomy image see Figure 1-89.

Tổn thương HAGL : giật rứt dc ổ chảo cánh tay tại bám tận cánh tay, thường dc ổ chảo cánh tay dưới

Tổn thương Bankart xương, mặt bên

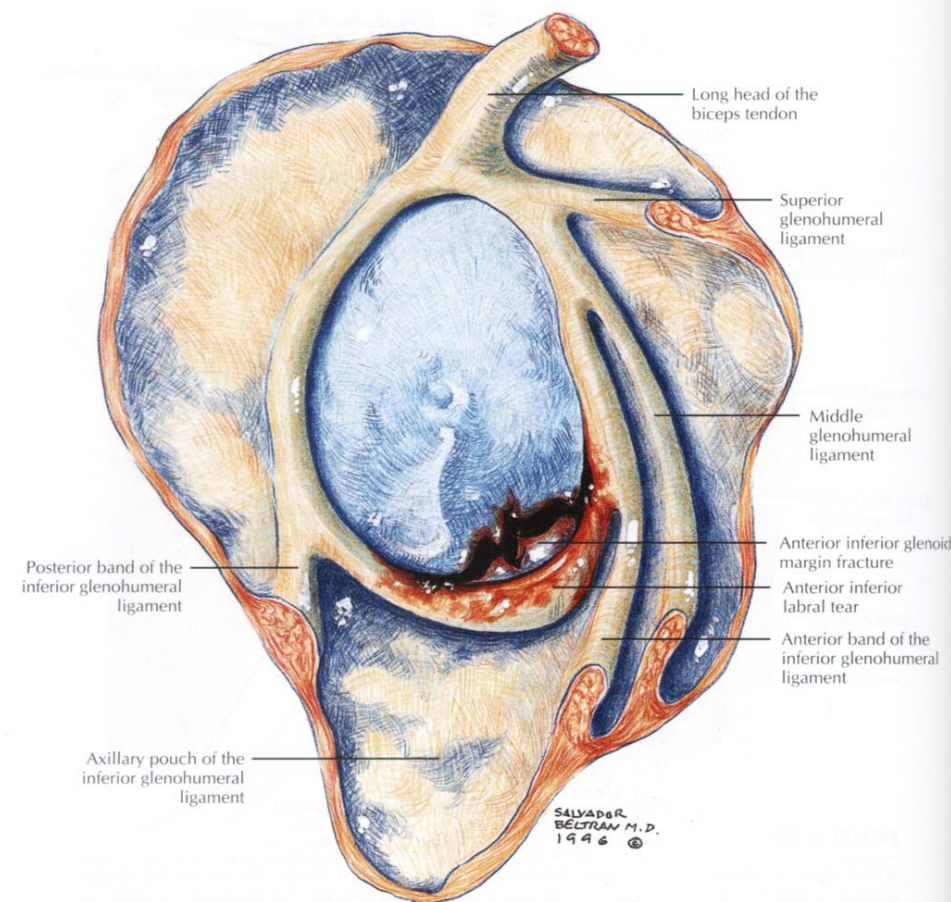


FIGURE 1-59
Osseous Bankart lesion with a fracture of the antero-inferior glenoid rim.

Tổn thương Bankart xương với gãy xương bờ ổ chảo dưới trước

Tổn thương rách sụn viền trước rộng, mặt bên

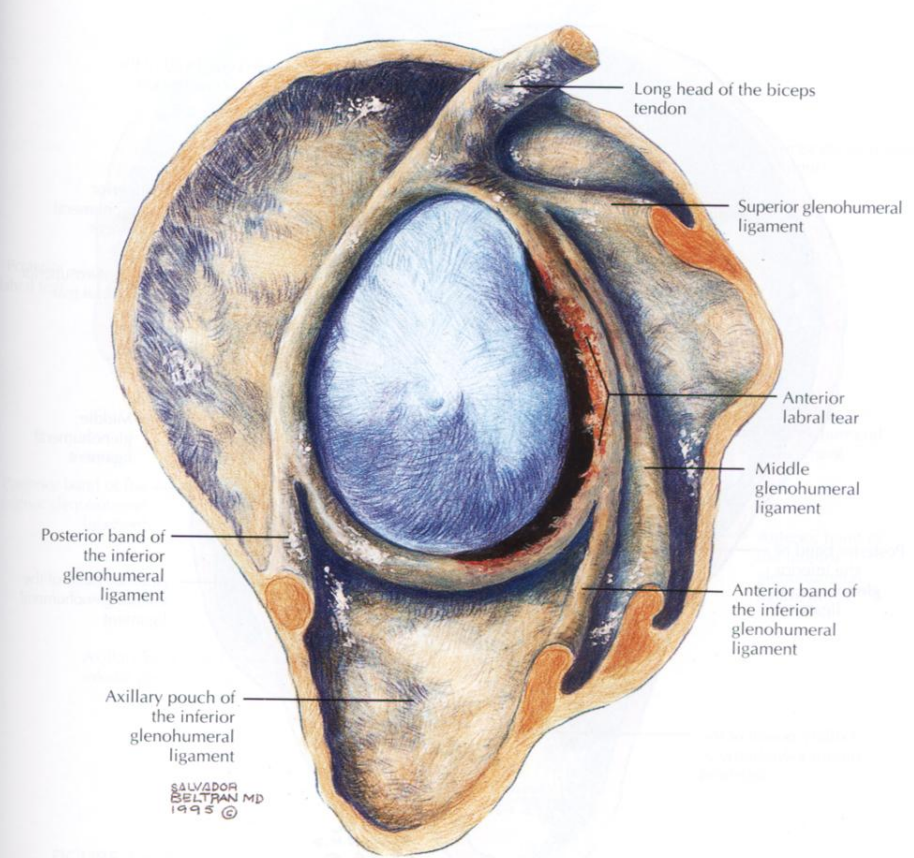


FIGURE 1-60
An extensive anterior labral tear from the insertion of the middle glenohumeral ligament to the inferior glenoid rim. For related MR, arthroscopy, and surgical anatomy image see Figure 1-86.

Rách sụn viền trước rộng từ nơi bám của dc ổ chảo cánh tay giữa đến bờ ổ chảo dưới

Tổn thương rách sụn viền trên trước,mặt bên

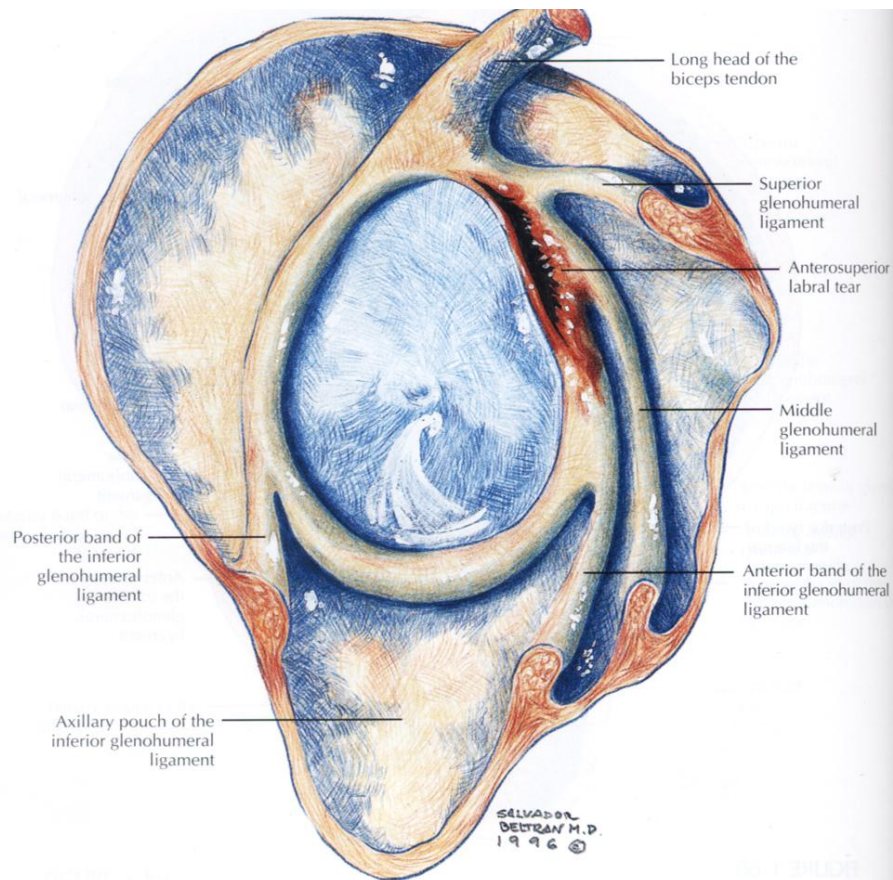


FIGURE 1-61

An anterosuperior labral tear at the insertion of the middle glenohumeral ligament. Anterosuperior labral tears may be associated with stretching or tearing of the middle glenohumeral ligament and present with microinstability. Superior extension to the biceps labral complex may further increase anterosuperior instability.

Tổn thương rách sụn viền sau,mặt bên

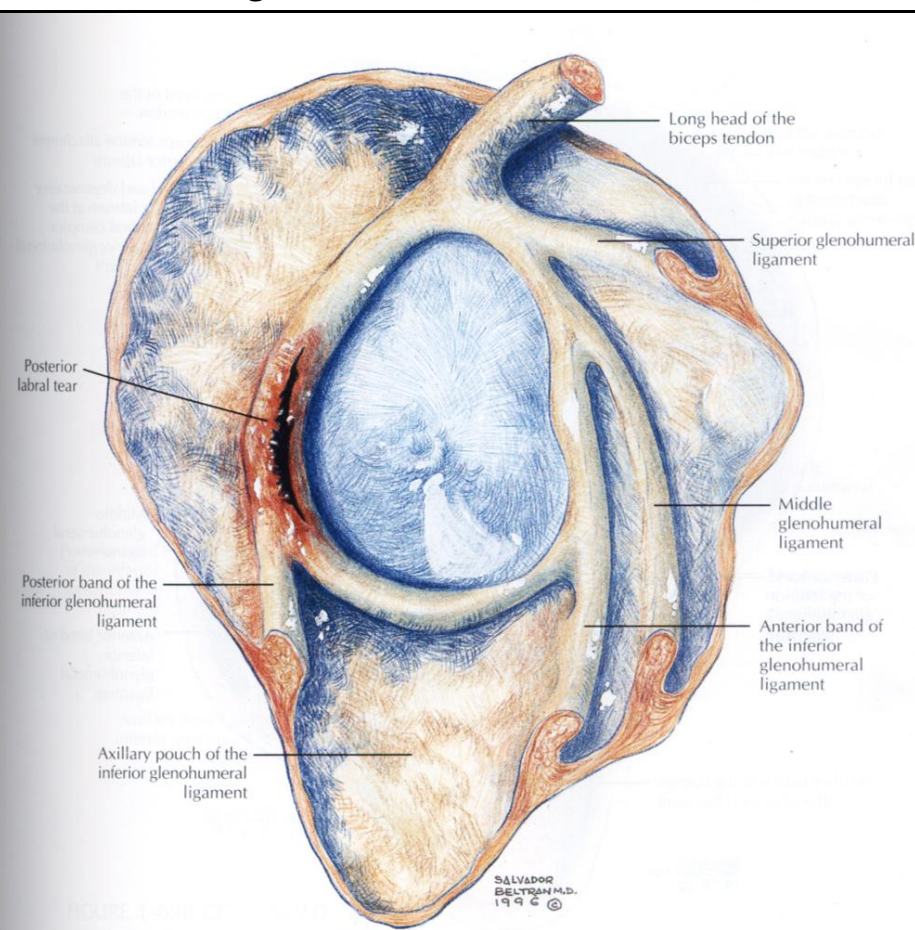


FIGURE 1-62

Posterior labral tear. A tear of the posterior labrum is illustrated in the nine o'clock position. In a reverse Bankart lesion, a posterior labral tear is associated with an anteromedial superior humeral head impaction (reverse Hill-Sachs lesion). For related MR, arthroscopy, and surgical anatomy image see Figure 1-88.

Rách sụn viền trên trước tại nơi bám dc ổ chảo cánh tay giữa

Rách sụn viền sau : tổn thương Hill-Sachs ngược (vị trí 9g so với vị trí 4g của tổn thương Bankart)

Tổn thương SLAP, mặt bên

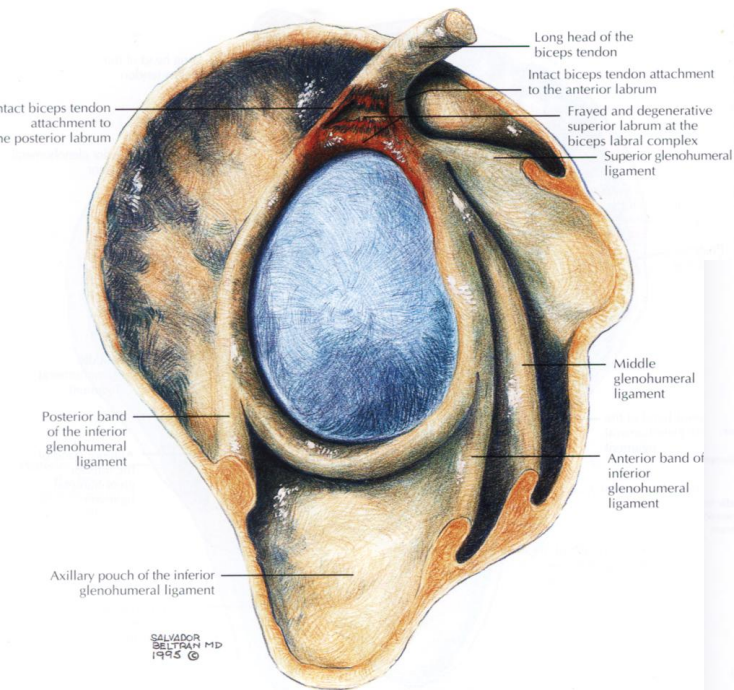


FIGURE 1-63A

SLAP (superior labrum from anterior to posterior) lesions. (A) Type I SLAP lesion with frayed and degenerative superior labrum.

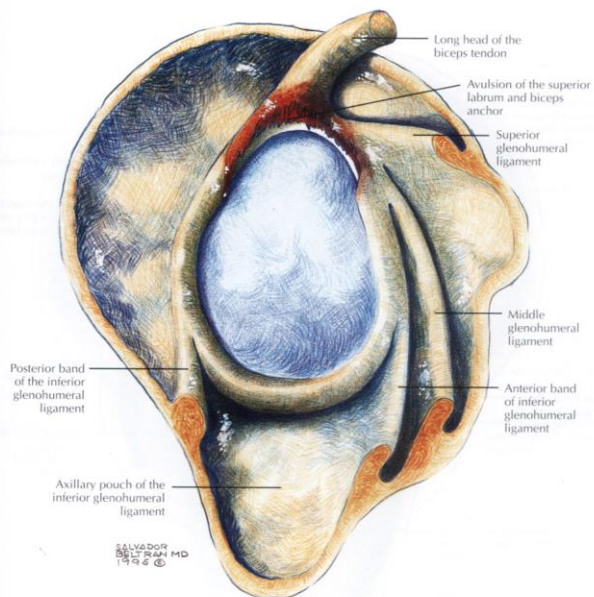


FIGURE 1-63B CONTINUED

(B) Type II SLAP lesion with avulsion of the superior labrum and biceps anchor. Note that the term "biceps anchor" is misleading. The long head of the biceps tendon has a primary attachment to the supraglenoid tubercle, which is not disrupted in the SLAP lesion. The biceps anchor, as referred to in a SLAP lesion, should be more properly thought of as a biceps expansion. For related MR, arthroscopy, and surgical anatomy images see Figures 1-82 and 1-83.

Loại 2 : giật rứt sụn viền trên và phần neo của gân nhị đầu

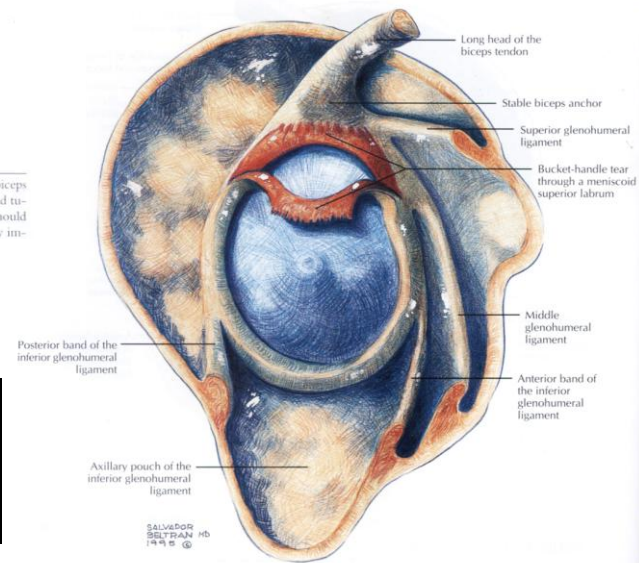


FIGURE 1-63C CONTINUED

(C) Type III SLAP lesion with a bucket handle tear through a meniscoid superior labrum and intact biceps anchor.

Loại 3 : rách kiểu quai xách ngang qua sụn viền trên dạng sụn chêm và neo nhị đầu nguyên vẹn

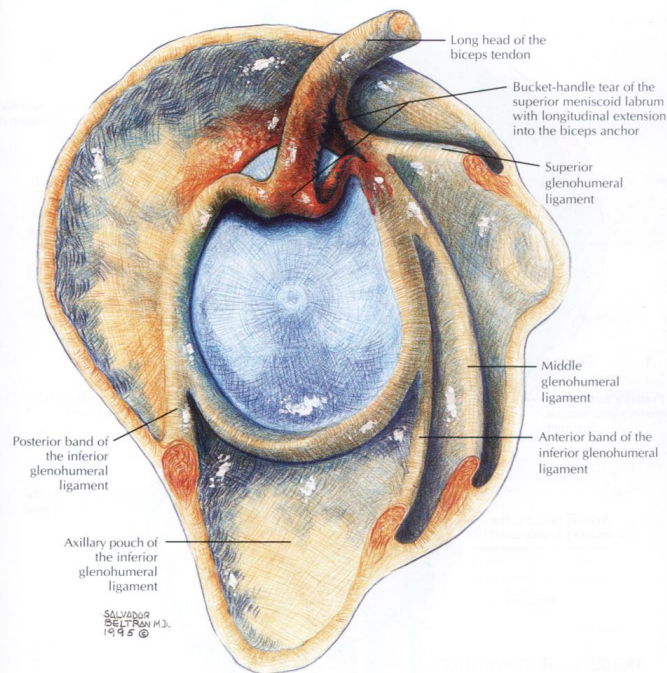


FIGURE 1-63D CONTINUED

(D) Type IV SLAP lesion with a bucket handle tear of the superior meniscoid labrum and extension into the biceps tendon.

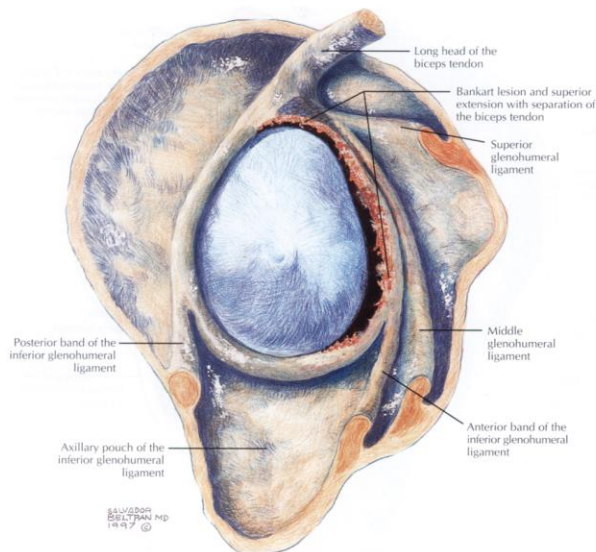
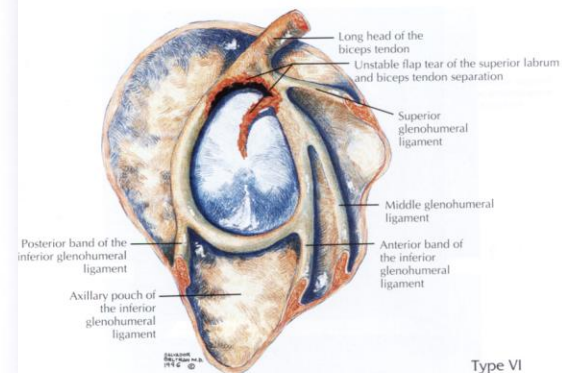
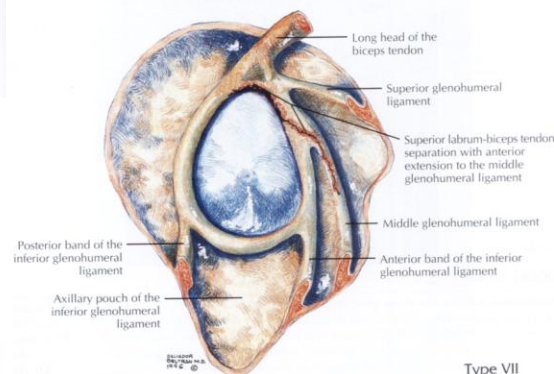


FIGURE 1-63E CONTINUED

(E) Type V SLAP lesion with superior extension of an anteroinferior Bankart lesion to include the superior labrum and separation of the biceps tendon. (F) Type VI SLAP lesion with an anteroposterior labral flap tear and a biceps tendon separation superiorly. (G) Type VII SLAP lesion with anterior extension of a Type II SLAP lesion to include the middle glenohumeral ligament.



Type VI



Type VII

Loại 4 : rách kiểu quai xách sụn viền trên dạng sụn chêm

Loại 5 : mở rộng lên trên của tổn thương Bankart gồm sụn viền trên và tách gân nhị đầu

Loại 6 : rách kiểu vạt sụn viền sau trên và tách gân nhị đầu phía trên.

Loại 7 : mở rộng ra trước của SLAP loại 2 đến dc ổ chảo cánh tay giữa

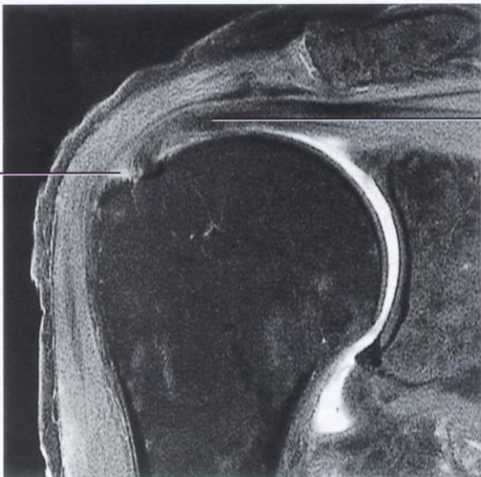
Phần 3 : Hình ảnh MRI, nội soi và phẫu thuật trên xác

Rách dày 1 phần cơ dưới vai và mặt khớp

Articular surface and intrasubstance partial thickness tear



Bursal surface tear

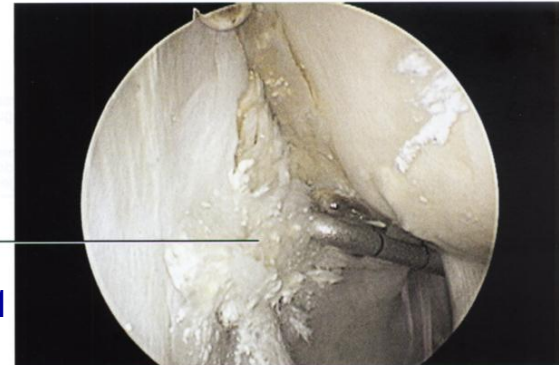


Supraspinatus and conjoined rotator cuff tendon

Chớp xoay

Rách chớp xoay dày 1 phần với vôi hóa

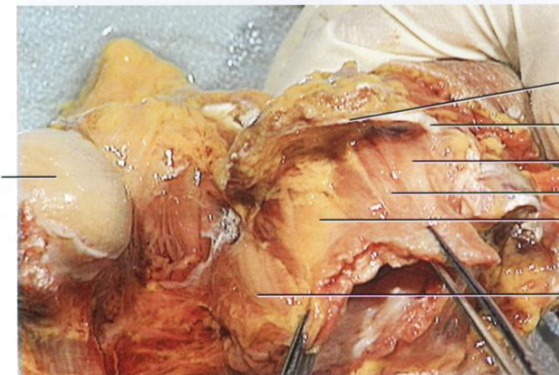
Partial thickness, articular surface rotator cuff tear with calcification



Erosion of the coracoacromial ligament



Humeral head



Base of scapular spine

Coracoacromial ligament

Supraspinatus tendon

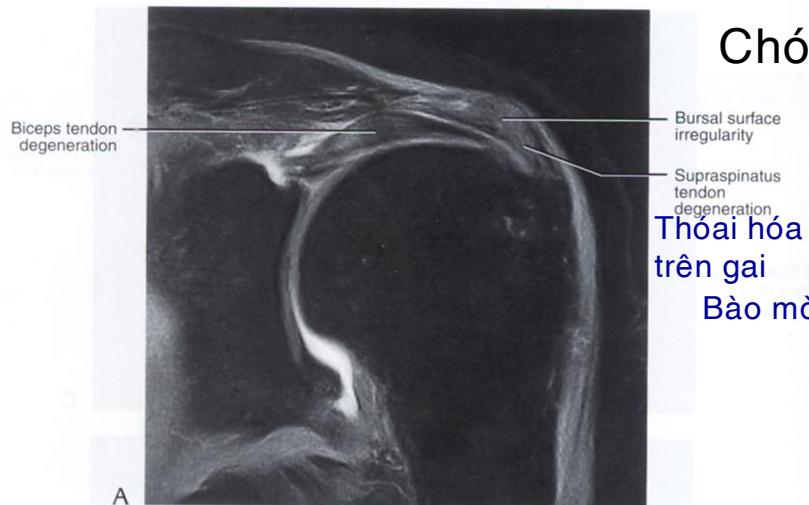
Supraspinatus muscle

Infraspinatus muscle

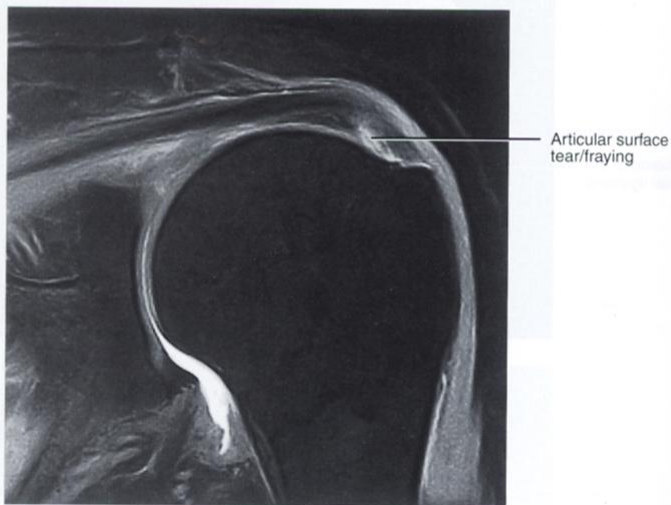
Teres minor muscle

FIGURE 1-64A,B

Partial rotator cuff tear. (A) T1-weighted coronal oblique MR arthrogram with hyperintense intrasubstance and partial thickness articular surface tear of the supraspinatus tendon. (B) Fat-suppressed T2-weighted fast spin-echo coronal oblique MR arthrogram with partial thickness bursal surface tear. (C and D) Arthroscopic views of a partial thickness articular surface rotator cuff tear with calcification (C) and erosion of the coracoacromial ligament, which was associated with fraying of the bursal surface of the rotator cuff (D). (E) Dissection with the cut coracoacromial ligament and rotator cuff tendons displayed. The humeral head is dislocated.



A



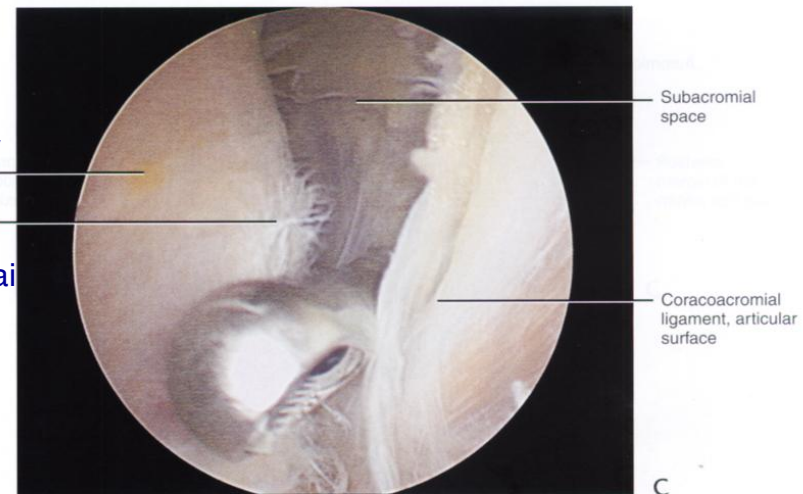
B

FIGURE 1-65A,B

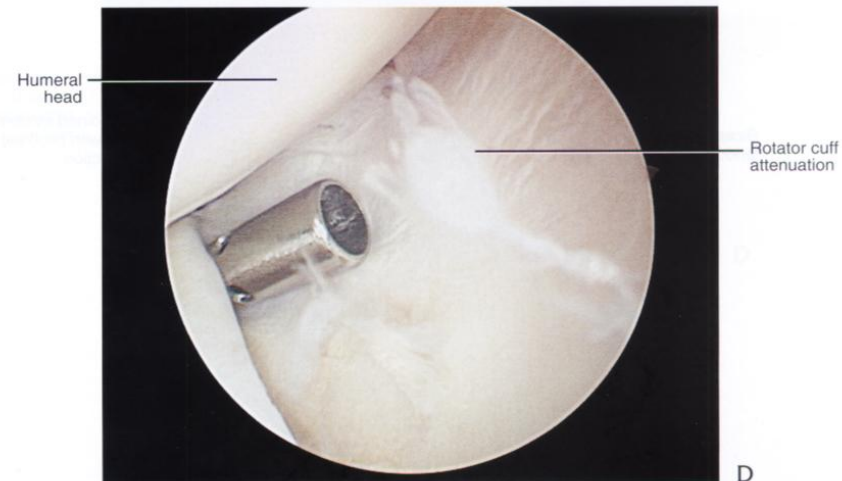
Partial rotator cuff tear with tendinosis. (A) Fat-suppressed T1-weighted coronal oblique MR arthrogram with supraspinatus tendon thickening and bursal surface irregularity. (B) Partial thickness articular surface tear/fraying of the conjoint portion of the rotator cuff on a fat-suppressed coronal oblique MR arthrogram.

Chóp xoay

Chóp xoay
Thoái hóa gân
trên gai
Bào mòn cơ trên gai



C

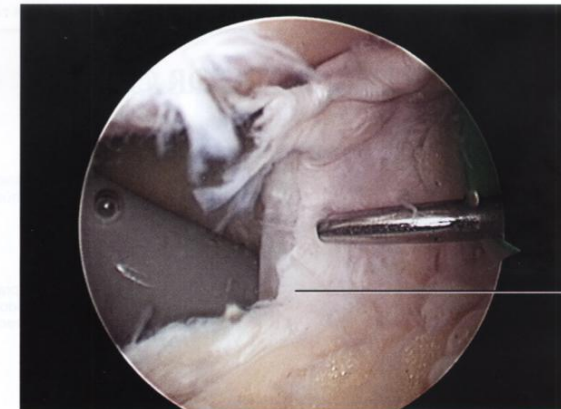


D

FIGURE 1-65C,D CONTINUED

(C) Arthroscopic view of supraspinatus bursal surface erosion and the coracoacromial ligament. (D) Arthroscopic view of articular surface partial thickness cuff tear.

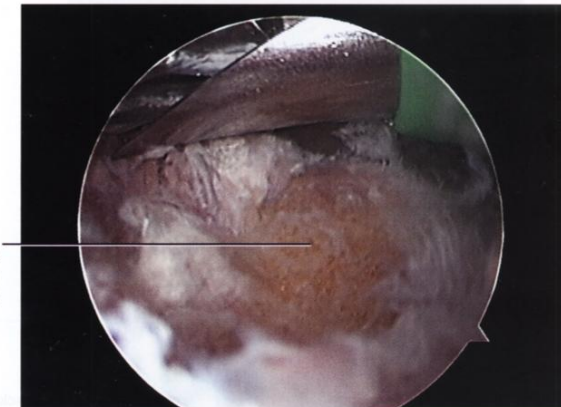
Chóp xoay



Bờ sau
của rách
chóp
xoay

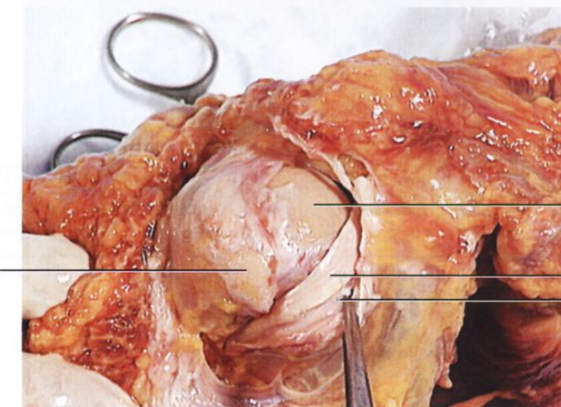
Posterior
margin of the
rotator cuff tear

C



Acromial erosion
at site of
coracoacromial
ligament

D



Massive cuff
tear with bald
humeral head

Biceps tendon

Lesser tuberosity

E

FIGURE 1-66C-E CONTINUED

Acromion

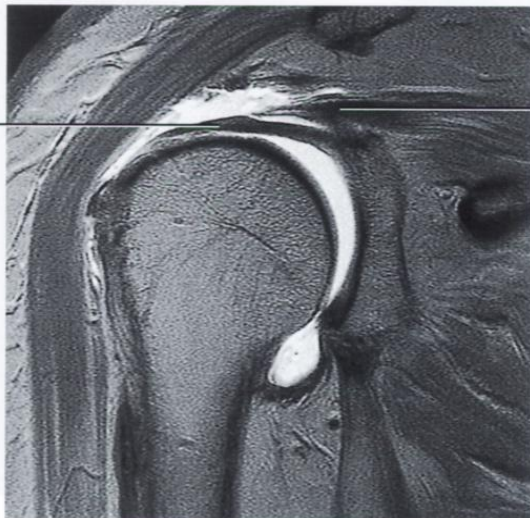


Supraspinatus
tendon tear with
proximal retraction

A

Rách gân trên gai
với co rút đầu gân

Biceps
tendon



Conjoined tendon
tear with proximal
retraction

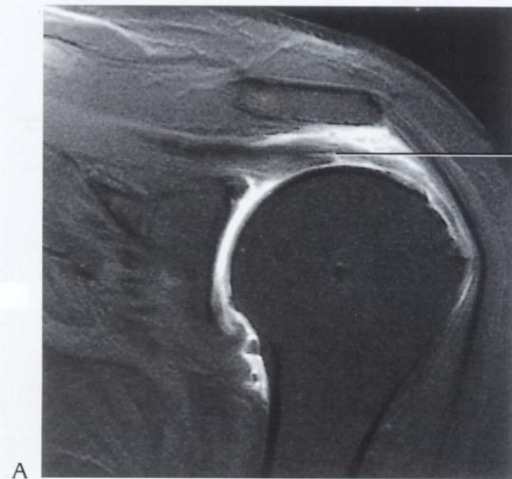
B

Rách gân kết
hợp với co rút
đầu gân

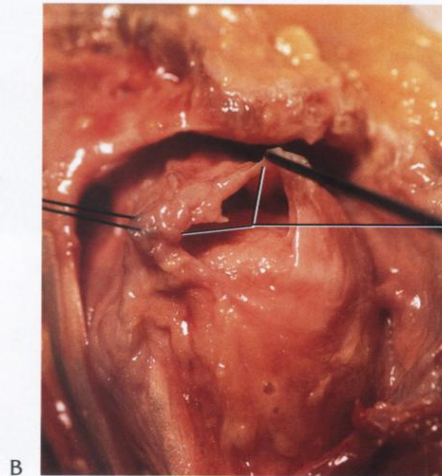
FIGURE 1-66A,B

Complete rotator cuff tear. Cuff retraction to the level of the glenoid can be seen on anterior (A) and more posterior (B) T1-weighted coronal oblique MR arthrograms. The posterior margin of the cuff tear (C) and acromial erosion (D) are shown on corresponding arthroscopic views. (E) The corresponding gross specimen demonstrates the massive cuff tear exposing the intraarticular passage of the biceps tendon.

Chớp xoay



Rách gân trên gai
với co rút



Rách chớp xoay
dày toàn bộ

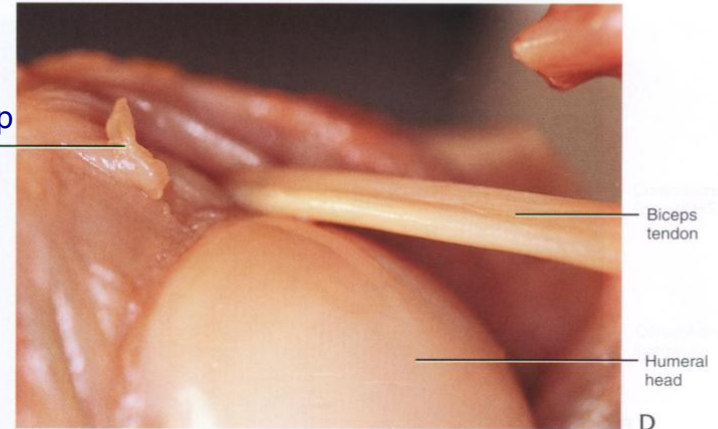
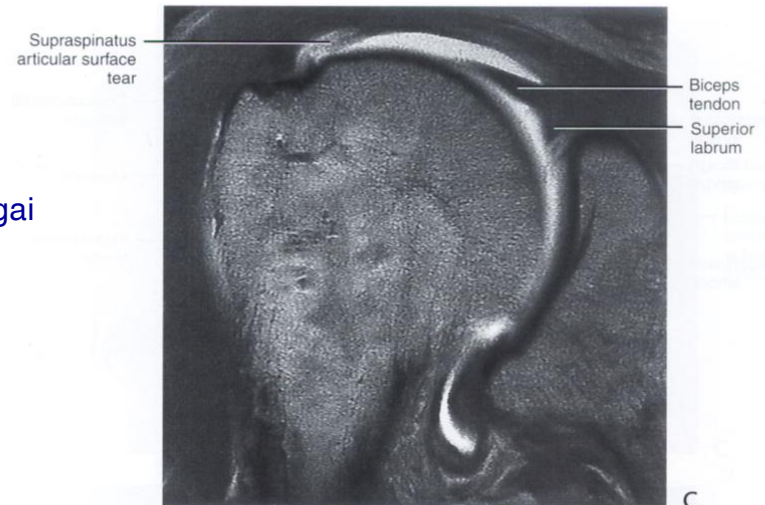


FIGURE 1-67A,B

(A) Supraspinatus tendon tear with partial retraction on a fat-suppressed T1-weighted coronal oblique MR arthrogram. (B) Corresponding cuff defect on gross specimen.

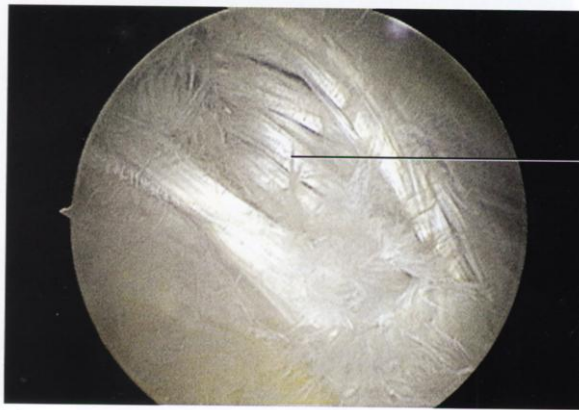
FIGURE 1-67C,D CONTINUED

(C) Partial thickness articular surface tear on a T1-weighted coronal oblique MR arthrogram. (D) Articular surface irregularity on the undersurface of the cuff. The long head of the biceps tendon is intact.

Dây chằng quạ mỏm mỏm



A



B

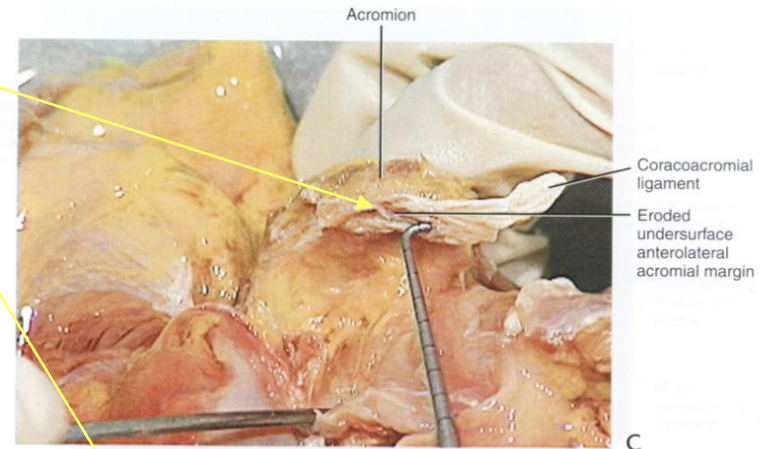
FIGURE 1-68A,B

(A) Normal attachment of the coracoacromial ligament to the inferior surface of the acromion on a T1-weighted sagittal oblique MR arthrogram. (B) Arthroscopic view from the subacromial space showing the fascicles of the coracoacromial ligament as they attach to the inferior aspect of the acromion. The coracoacromial ligament attaches to the anterior, lateral, and inferior surfaces of the acromion and originates as a triangular band of two fascicles from the lateral aspect of the coracoid. (C) The corresponding coracoacromial ligament has been cut, with the acromial attachment intact. There are erosive changes on the undersurface of the anterolateral acromial margin. (D) A separate gross specimen highlighting the anatomy of the coracohumeral and coracoacromial ligaments.

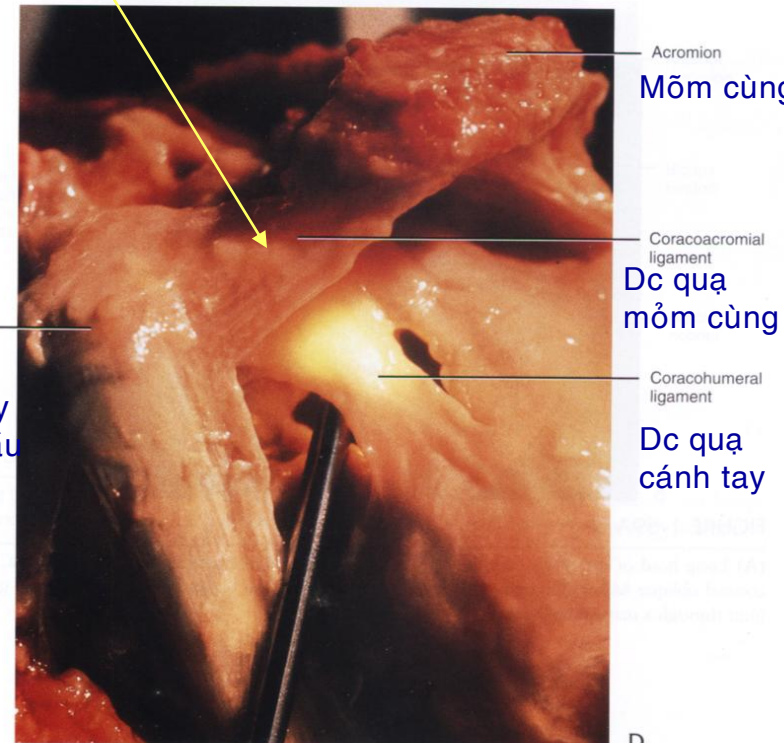
Dc quạ mỏm cùng

Dc quạ mỏm cùng

Gân quạ cánh tay và đầu ngắn 2 đầu



C

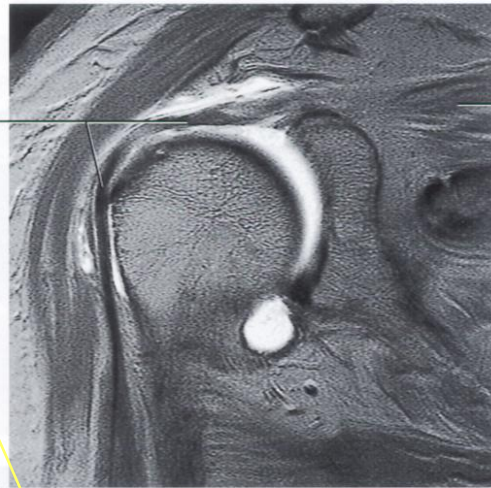


D

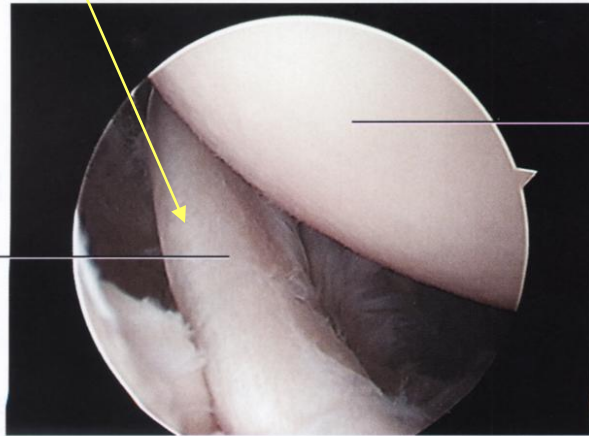
FIGURE 1-68C,D CONTINUED

Gân nhị đầu

Cơ trên gai bị rút lại



A



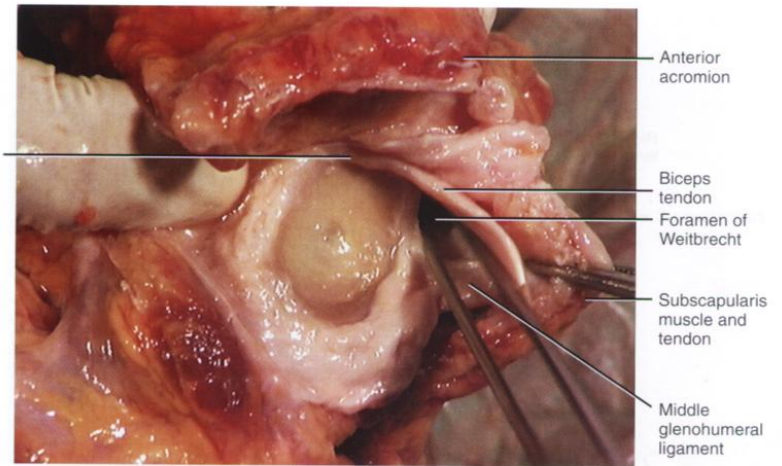
B

FIGURE 1-69A,B

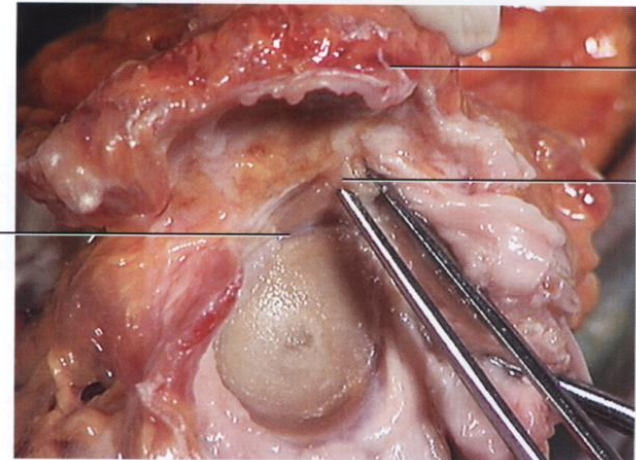
(A) Long head of the biceps tendon with complete absence of overlying cuff tendons on a T1-weighted coronal oblique MR arthrogram. (B) Arthroscopic view of the biceps tendon entering the glenohumeral joint through a massive cuff tear.

Phức hợp sụn viền nhị đầu

Type I biceps labral complex



Type I biceps labral complex



Mòm cùng trước

Gân nhị đầu

FIGURE 1-69C,D CONTINUED

(C) The long head of the biceps tendon attaches to the supraglenoid tubercle and contributes to the biceps labral complex. (D) The cut long head of the biceps tendon is mobilized to show the superior pole of the glenoid.

Gân nhị đầu

Gân nhị đầu

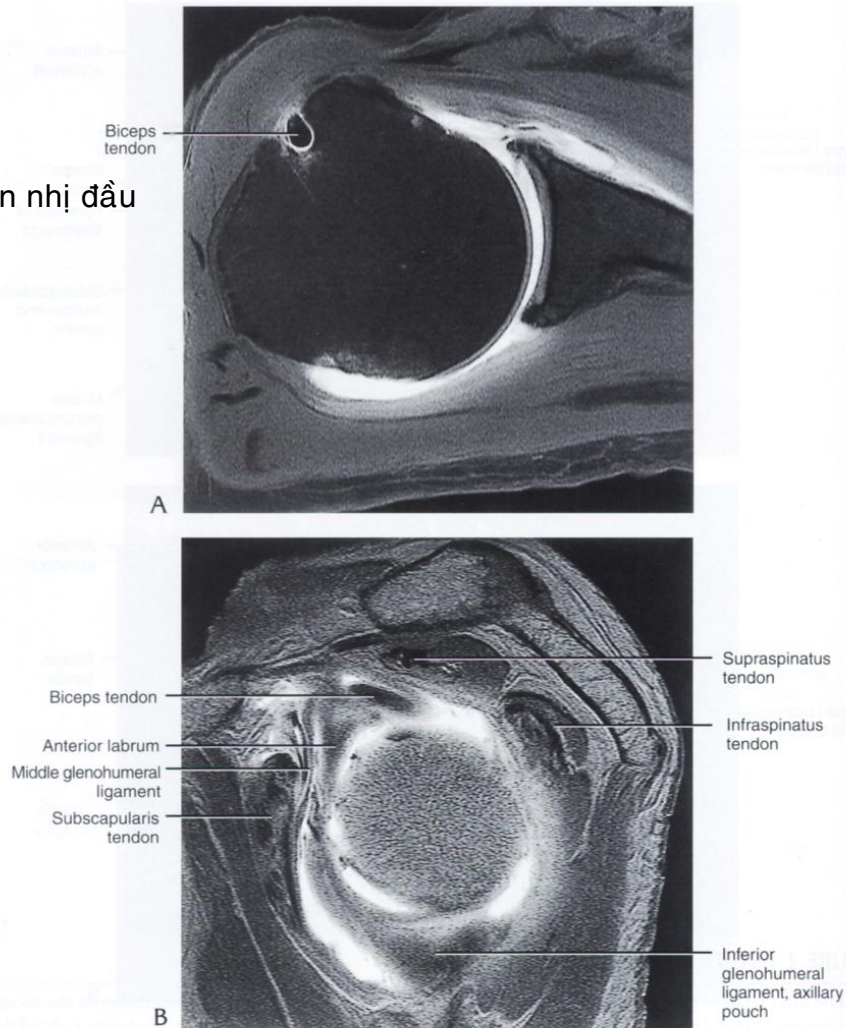


FIGURE 1-70A,B

The long head of the biceps tendon on a fat-suppressed T1-weighted axial MR arthrogram (A) and a T1-weighted sagittal oblique MR arthrogram (B).

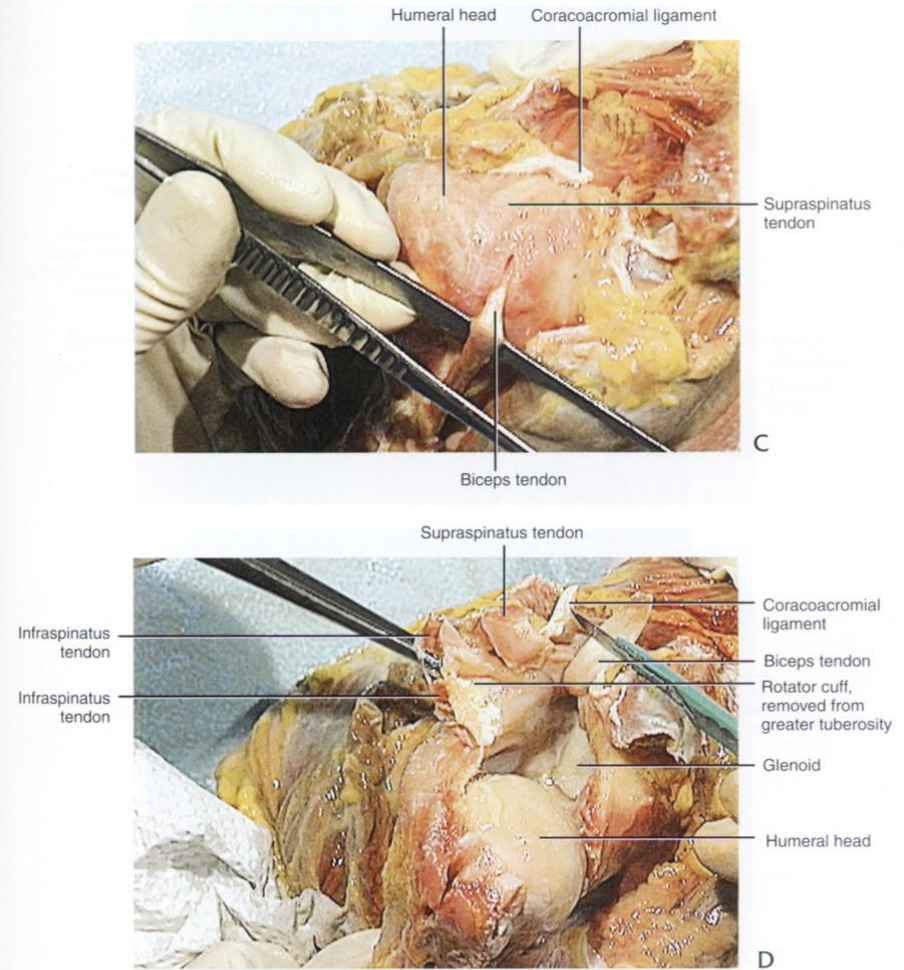


FIGURE 1-70C,D CONTINUED

(C) The extraarticular portion of the long head of the biceps tendon in the bicipital groove in the hiatus between the subscapularis and supraspinatus tendons. (D) The relationship of the long head of the biceps tendon is shown relative to the rotator cuff and coracoacromial ligament. Fibers of the biceps contribute to the posterior and superior labrum. The long head of the biceps, with the biceps labral complex, centralizes and stabilizes the joint, as does the rotator cuff.

Không có gân nhị đầu

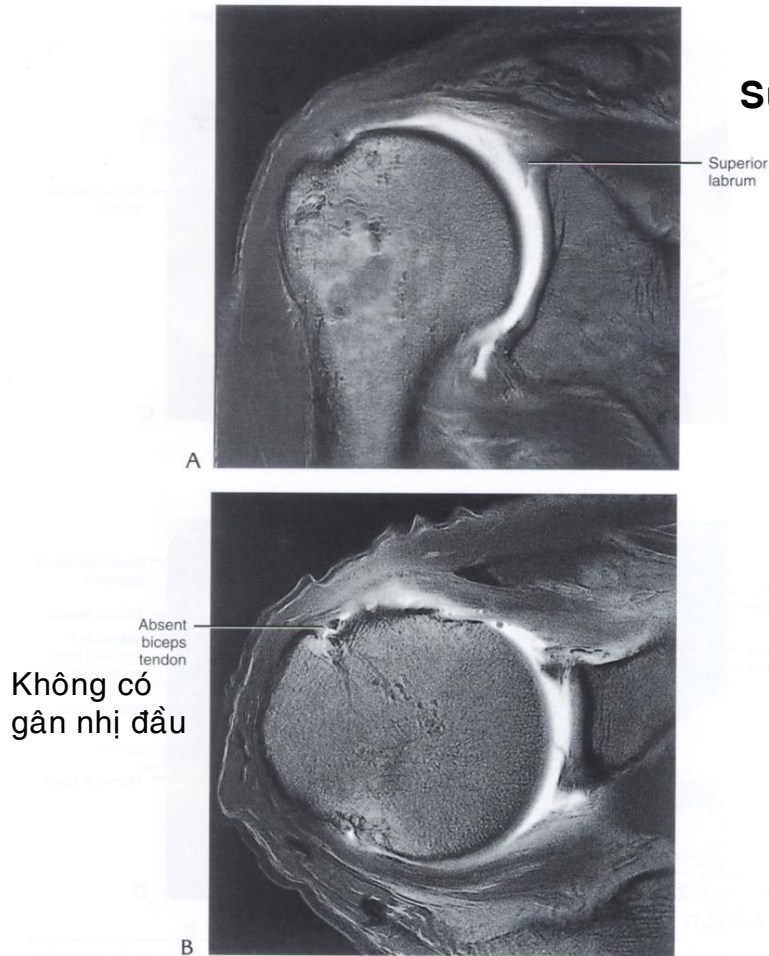


FIGURE 1-71A,B

Absent biceps tendon on T1-weighted coronal oblique (**A**) and T1-weighted axial (**B**) MR arthrograms. The superior labrum is shown in part **A** without a biceps attachment.

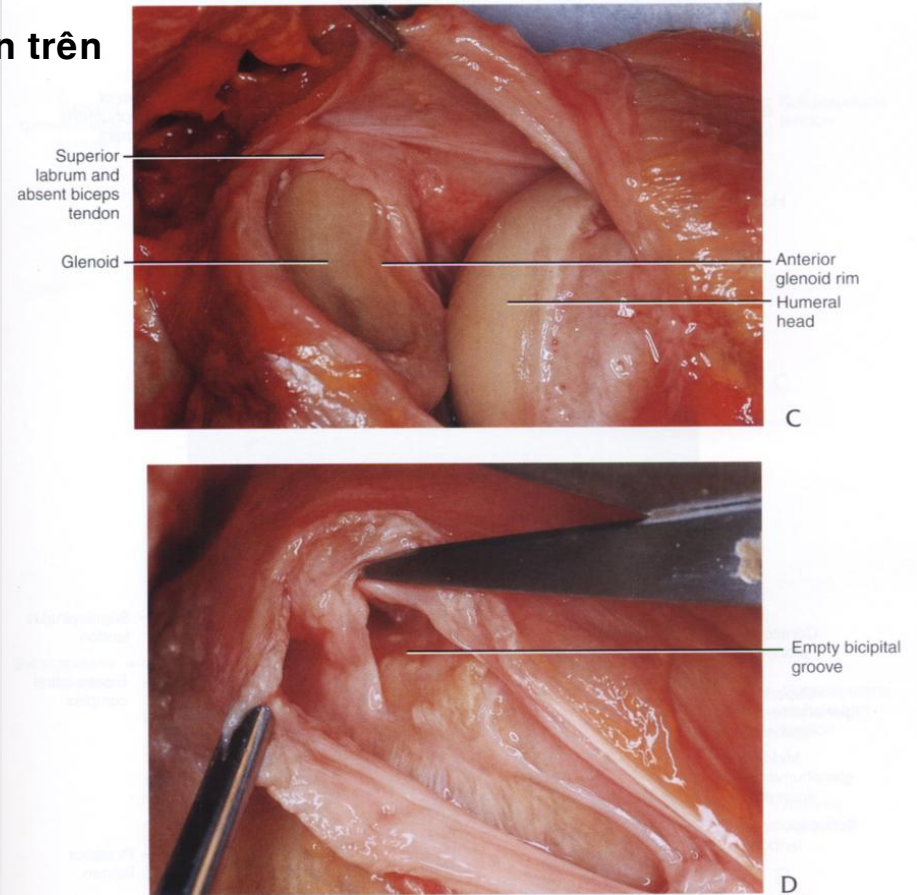
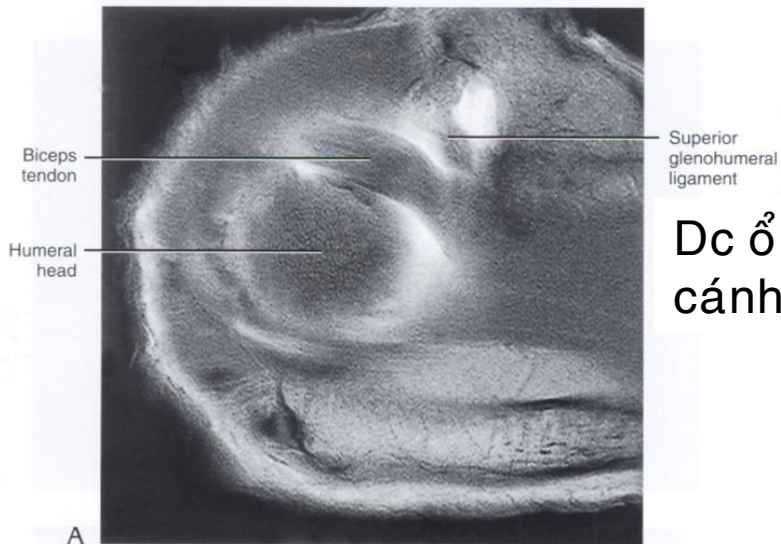


FIGURE 1-71C,D CONTINUED

(**C** and **D**) Corresponding specimens displaying the intraarticular absence of the biceps tendon (**C**) and an empty bicipital groove (**D**).

Dây chằng ổ chảo cánh tay trên và gân dưới vai



Dc ổ chảo
cánh tay trên

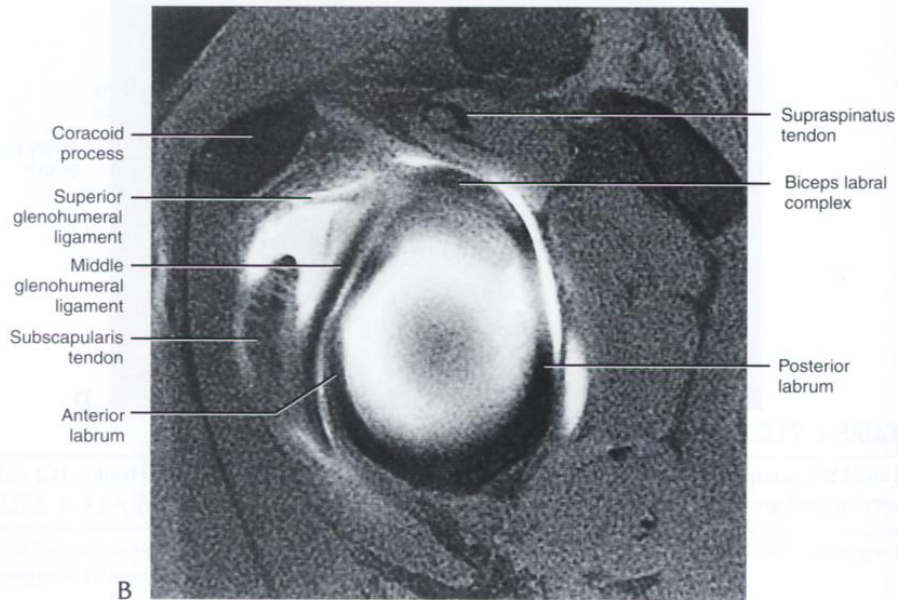
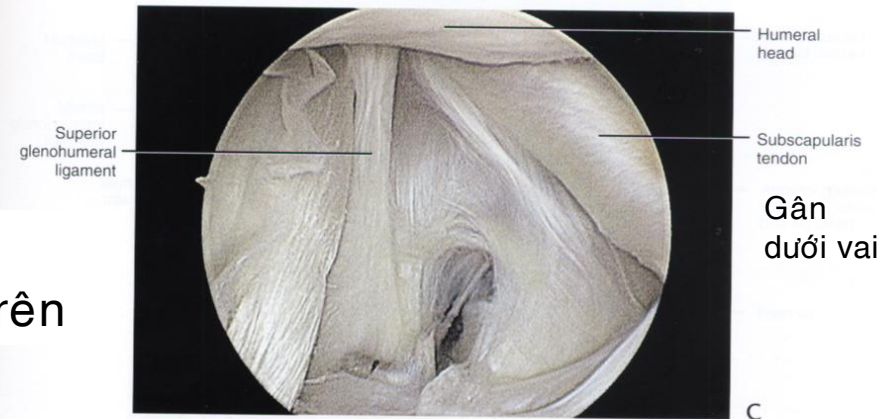


FIGURE 1-72A,B



Gân
dưới vai

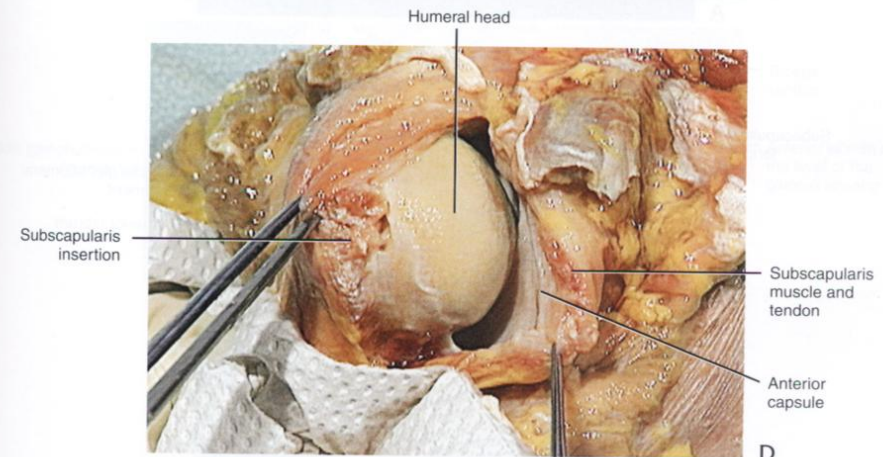
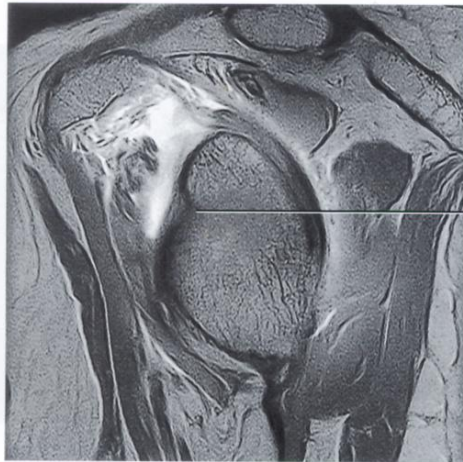


FIGURE 1-72C,D CONTINUED

(A) The long head of the biceps tendon and more medially located superior glenohumeral ligament are shown on a T1-weighted MR arthrogram through the superior aspect of the glenohumeral joint. (B) The superior glenohumeral ligament and biceps labral complex are demonstrated on a T1-weighted sagittal oblique MR arthrogram. The size of the superior glenohumeral ligament varies, ranging from a thin, thread-like thickening of the capsule to a more substantial ligament. The insertion of the superior glenohumeral ligament is superior to the lesser tuberosity in the region of the bicipital groove. The superior glenohumeral ligament has attachments to the middle glenohumeral ligament, biceps tendon, and labrum. (C) Posterior arthroscopic view showing the subscapularis tendon and the superior glenohumeral ligament. (D) Corresponding gross specimen with the subscapularis tendon lying on the anterior aspect of the anterior capsule. The superior portion of the subscapularis tendon is intraarticular (see part C). The subscapularis tendon insertion on the lesser tuberosity is also identified.

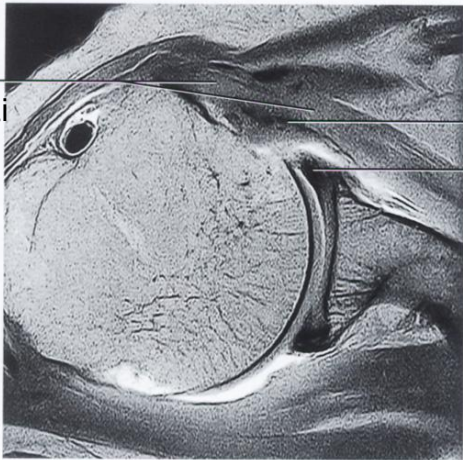
Bao khớp trước và ổ chảo

Mặt cắt dọc ổ chảo



A

Gân dưới vai

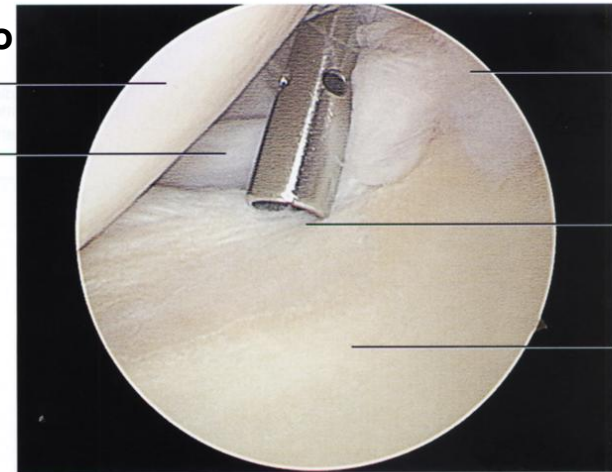


B

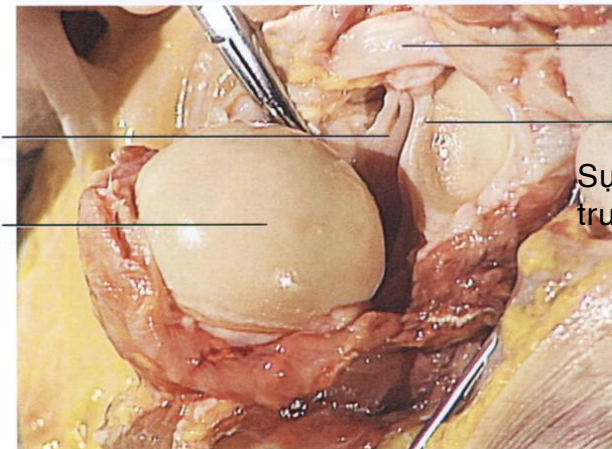
Dc ổ chảo cánh tay
giữa

Sụn viền trước

Middle glenohumeral
ligament
Humeral head



C



D

Sụn viền
trước

FIGURE 1-73C,D CONTINUED

(C) Arthroscopic view of the anterior glenoid indentation at the nine o'clock position of the equator. (D) Corresponding gross specimen with the middle glenohumeral ligament and anterior labrum at the glenoid equator.

FIGURE 1-73A,B

(A) The equator of the glenoid corresponding to the epiphyseal line of the glenoid fossa is demonstrated on a T1-weighted sagittal oblique MR arthrogram. (B) The subscapularis tendon, the middle glenohumeral ligament, and the anterior labrum shown on a T1-weighted axial MR arthrogram at the level of the equator.

Dây chằng ổ chảo cánh tay giữa

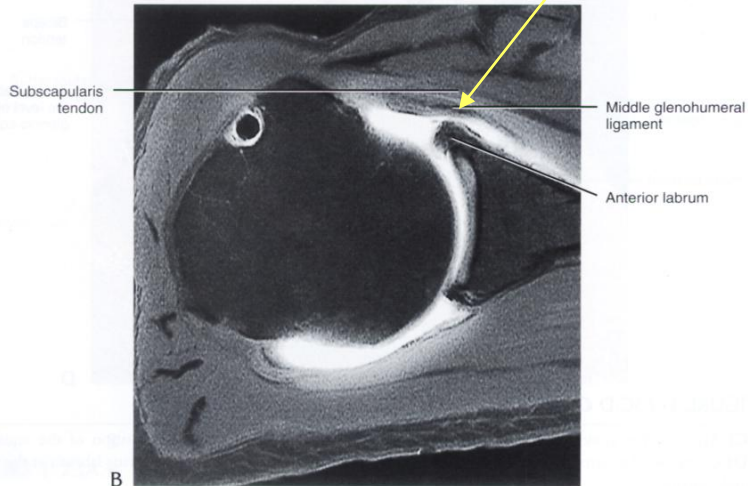
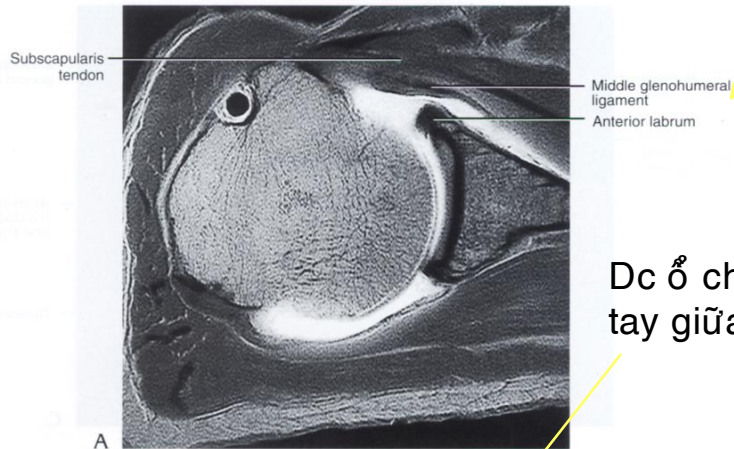


FIGURE 1-74A,B

Middle glenohumeral ligament (MGL). T1-weighted (A) and fat-suppressed T1-weighted (B) MR arthrograms showing the MGL between the subscapularis tendon and the anterior labrum. The MGL, which may present as thin ligamentous tissue or a more cordlike structure, has a role in the stability of the shoulder joint from 0° to 45° of abduction. It demonstrates a more vertical orientation with internal rotation and courses horizontally (elongates) with external rotation. The MGL is seen passing across the subscapularis tendon on corresponding arthroscopic (C) and gross (D) specimens.

Dc ổ chảo cánh tay giữa

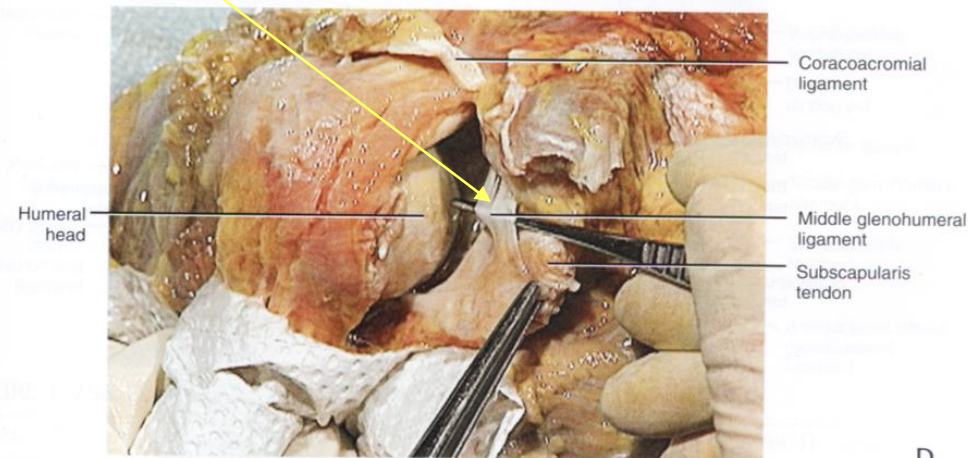
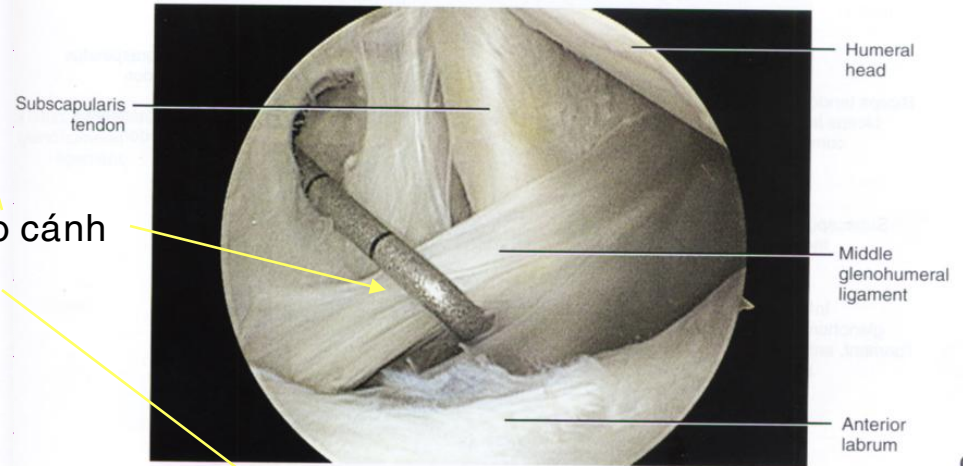
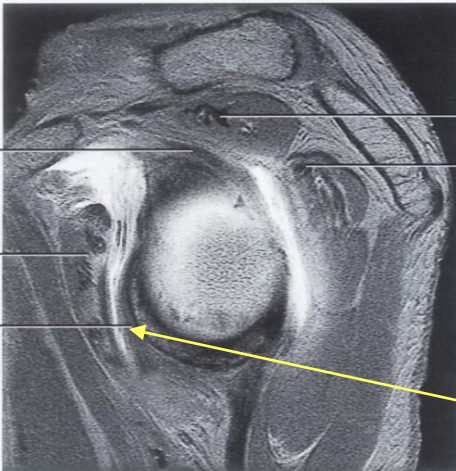


FIGURE 1-74C,D CONTINUED

Dây chằng ổ chảo cánh tay dưới

Gân nhị đầu ở phức hợp sụn viền nhị đầu

Gân dưới vai



A

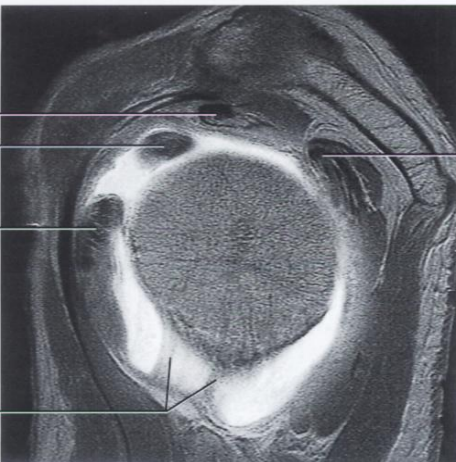
Gân trên gai

Supraspinatus tendon

Infraspinatus tendon

Gân dưới gai

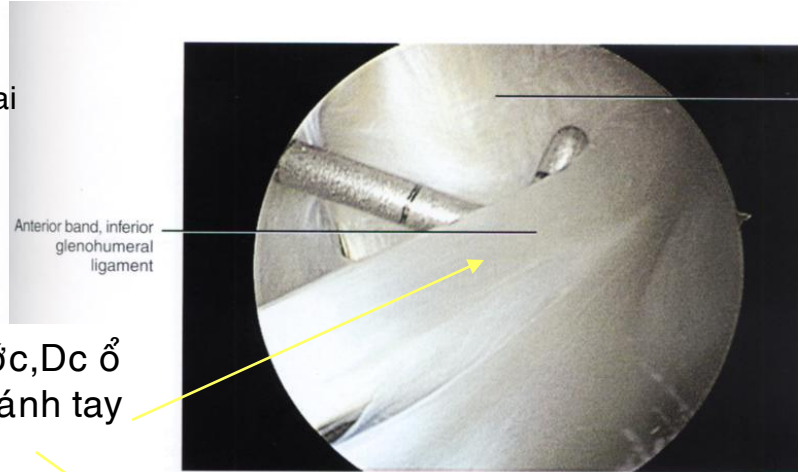
Bó trước, Dc ổ chảo cánh tay dưới



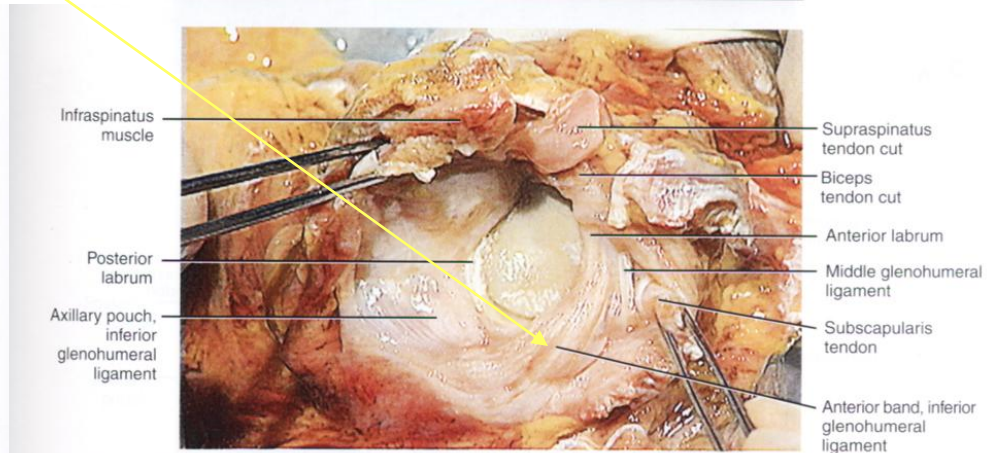
B

FIGURE 1-75A,B

T1-weighted sagittal oblique MR arthrograms showing the anterior band (A) and the axillary pouch (B) of the inferior glenohumeral ligament. The inferior glenohumeral ligament is lax in the adducted position. As it tightens with increasing abduction, the anterior and posterior bands move superiorly with respect to the humeral head. At 90° of abduction, the inferior glenohumeral ligament is the primary restraint for anterior and posterior dislocations.



C



D

FIGURE 1-75C,D, CONTINUED

(C) An arthroscopic view showing the anterior band of the inferior glenohumeral ligament. The anterior band forms the anterior labrum at the medial attachment of the inferior glenohumeral ligament to the glenoid. The posterior band contributes to the formation of the posterior labrum. (D) The well-defined anterior band and axillary pouch are demonstrated on this corresponding gross specimen with the humeral head removed. The origin of the anterior band is located near the three o'clock position on the glenoid.

Dây chằng ổ chảo cánh tay dưới (Dc occt dưới)

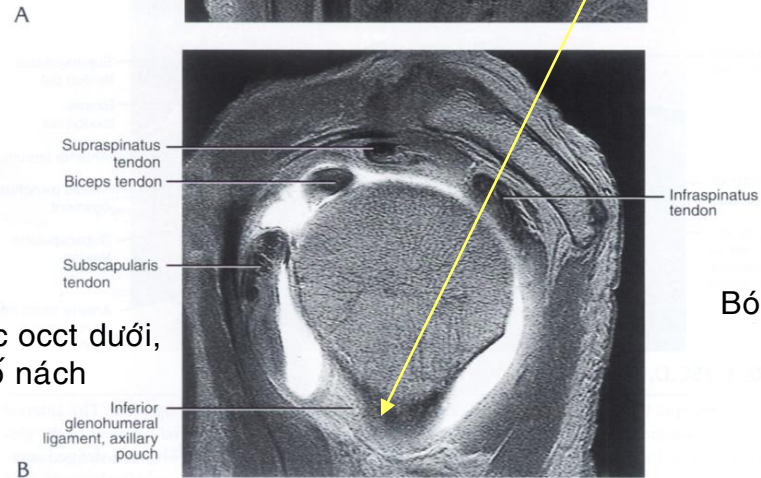
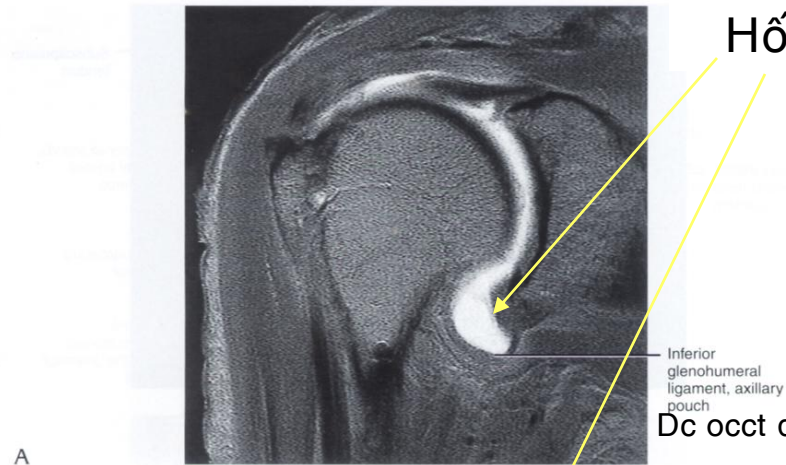


FIGURE 1-76A,B

(A) T1-weighted coronal oblique MR arthrogram showing the axillary pouch of the inferior glenohumeral ligament, which extends inferior to the glenohumeral joint as a redundancy of thickened capsular tissue. (B) T1-weighted sagittal oblique MR arthrogram showing the inferior glenohumeral ligament complex, which inserts onto the anatomic neck of the humerus either as a collar-like attachment or as a V-shaped attachment.

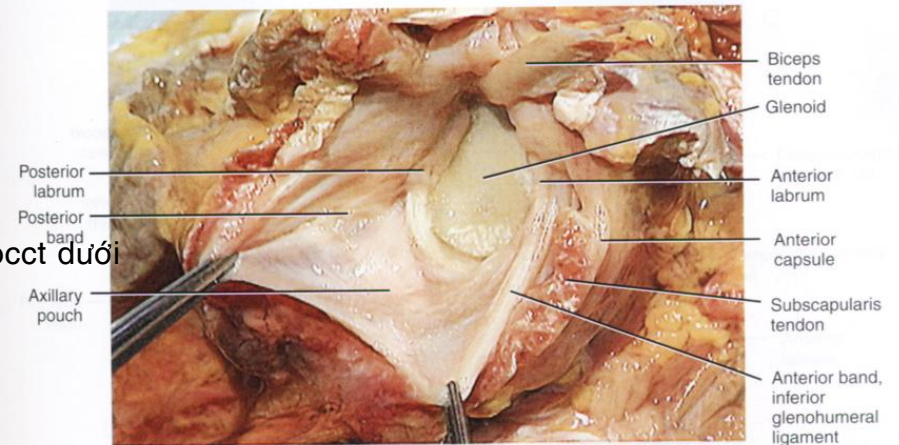
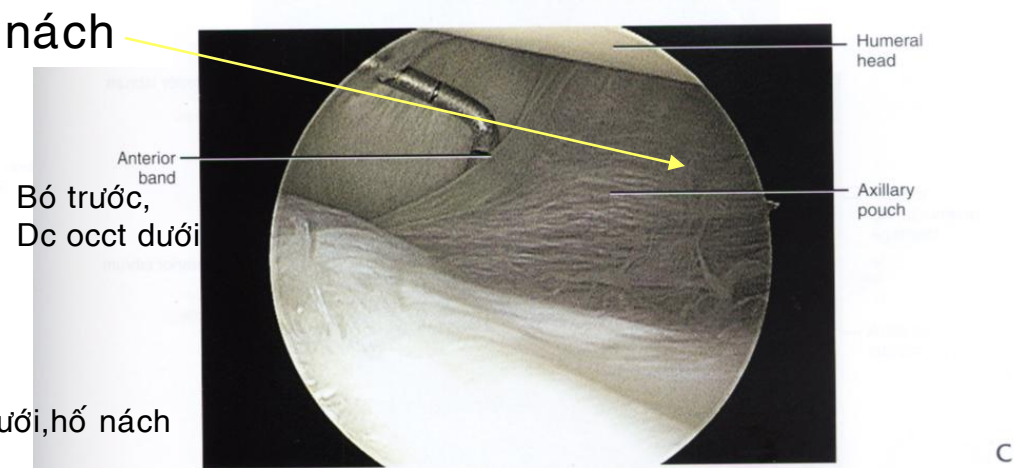
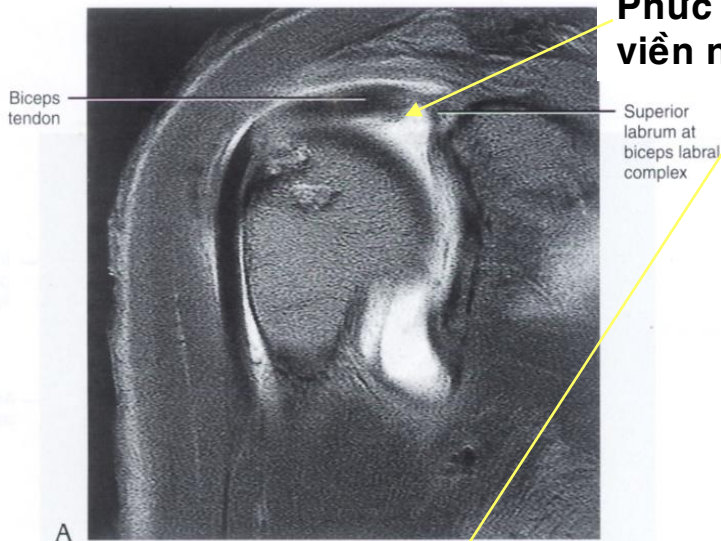


FIGURE 1-76C,D CONTINUED

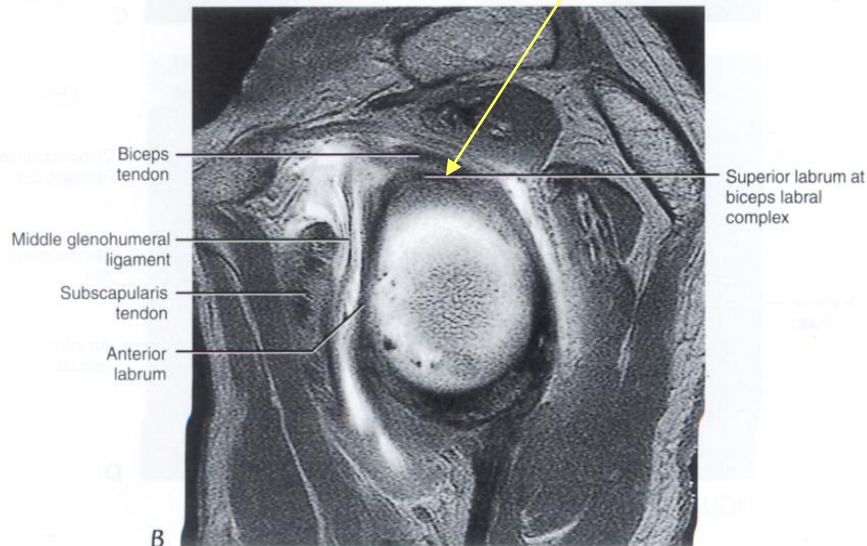
(C and D) The inferior glenohumeral ligament complex shown on corresponding arthroscopic (C) and gross (D) views. Note that the posterior band of the inferior glenohumeral ligament is not as well-defined as the anterior band.

Bó trước, Dc occt dưới

Phức hợp sụn viên nhị đầu



A



B

FIGURE 1-78A,B

The biceps labral complex on T1-weighted coronal oblique (A) and sagittal oblique (B) MR arthrograms. The superior labrum functions in conjunction with the biceps tendon to form the biceps labral complex (BLC). The BLC corresponds to the labrum above the equator (epiphyseal line) and represents the upper one-third of the glenoid labrum. (C and D) Arthroscopic views of the BLC. (E) Corresponding dissection with the BLC shown at the level of the superior pole of the glenoid.

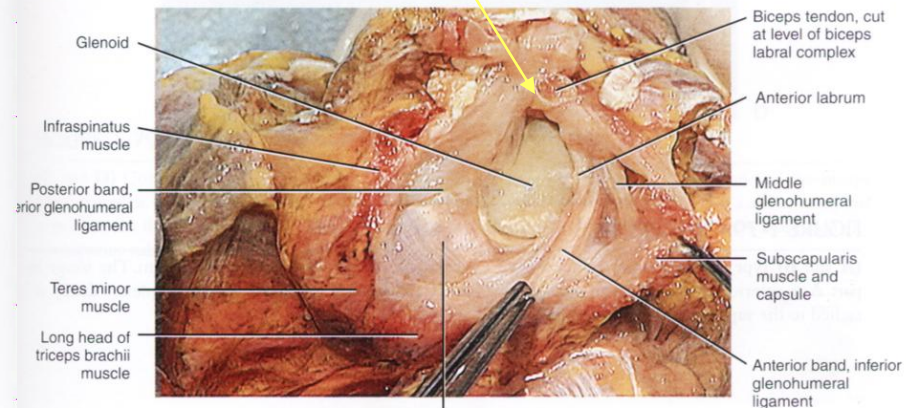
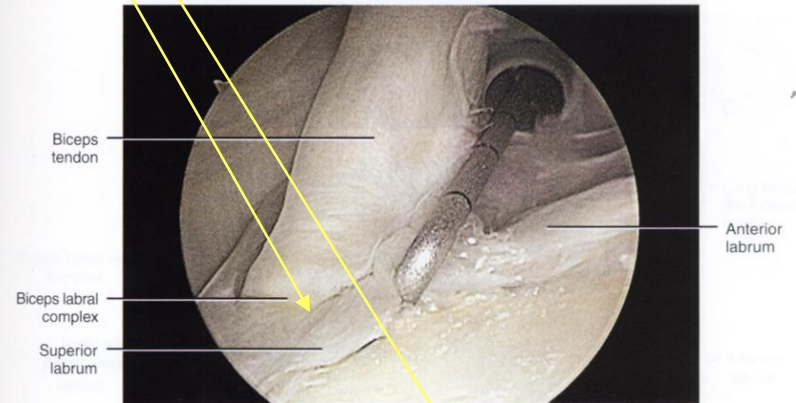
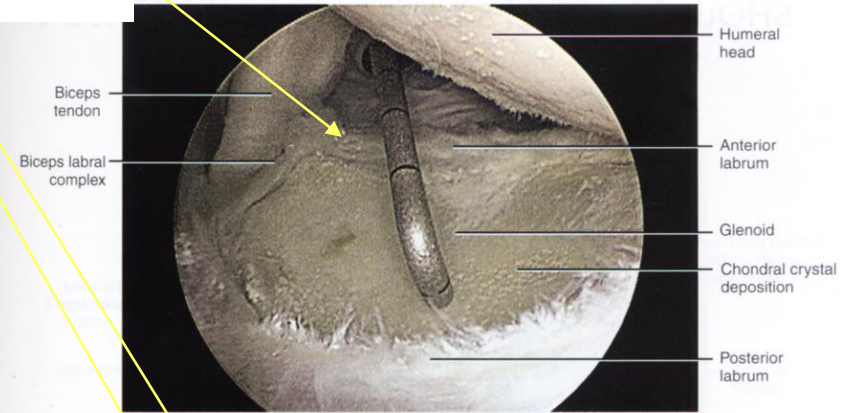


FIGURE 1-78C-E CONTINUED

Phức hợp sụn viên nhị đầu loại 1

Biceps
tendon

Biceps labral
complex, type 1

A

Biceps labral
complex, type 1

B

FIGURE 1-79A,B

(A and B) Type 1 biceps labral complex on T1-weighted coronal oblique MR arthrogram. The image in part A is anterior to the image in part B. In a Type 1 attachment, the biceps labral complex is firmly attached to the superior pole of the glenoid.

Posterior
labrum

Glenoid

Long head of
the biceps
tendon

Anterior
labrum

C

Biceps labral
complex

Posterior
labrum

Long head of
the biceps
tendon

Anterior
labrum

D

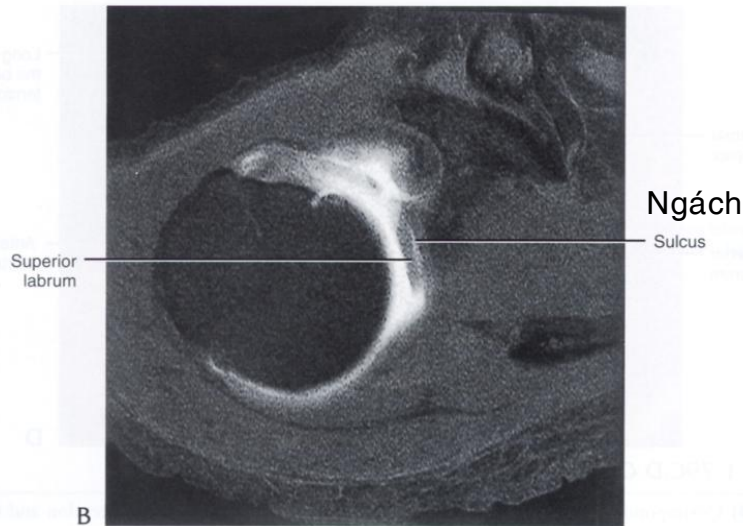
FIGURE 1-79C,D CONTINUED

(C and D) Corresponding gross specimens identifying the long head of the biceps tendon and the biceps labral complex. The superior labrum is adherent to the superior pole of the glenoid, and a sulcus does not exist between the superior labrum and the glenoid articular cartilage. In addition, there is no associated anterosuperior sublaxal foramen in this type of biceps labral complex.

Phức hợp sụn viền nhị đầu loại 2



A



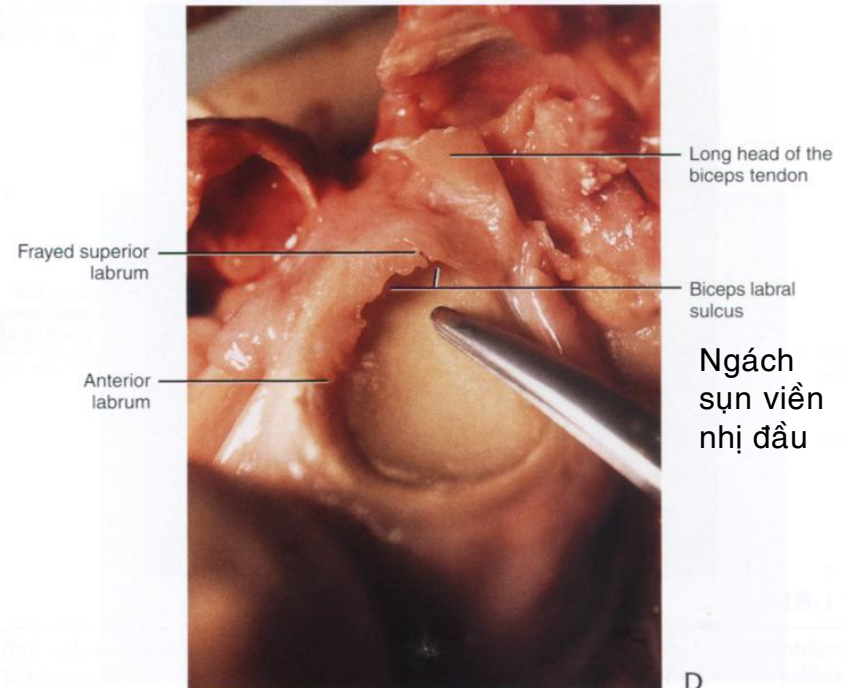
B

FIGURE 1-80A,B

Type 2 biceps labral complex with the biceps attached to the superior labrum lateral to the superior glenoid. The biceps tendon continues medially and attaches to the supraglenoid tubercle. (A) A fat-suppressed T1-weighted coronal oblique MR arthrogram showing the fluid-filled sulcus that formed at the superior pole of the glenoid. (B) A fat-suppressed T1-weighted axial image, obtained through the biceps labral sulcus, shows a layer of fluid interposed between the labrum and glenoid corresponding to the sulcus. This could be mistaken for a SLAP (superior labrum from anterior to posterior) lesion. The frayed superior labrum and sulcus are demonstrated on a corresponding fat-suppressed T1-weighted sagittal oblique MR arthrogram (C) and a lateral view of glenoid dissection (D).



C



D

FIGURE 1-80C,D CONTINUED

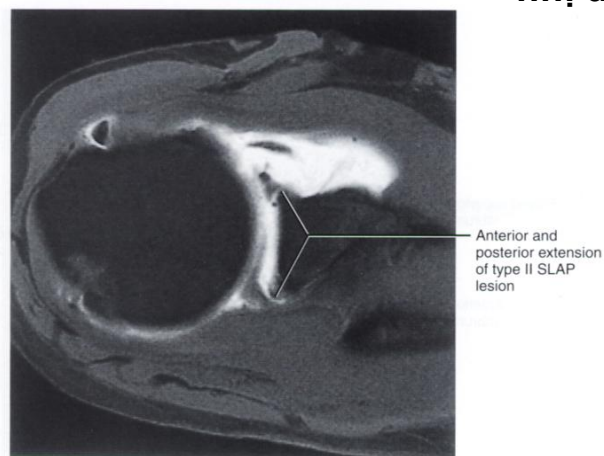
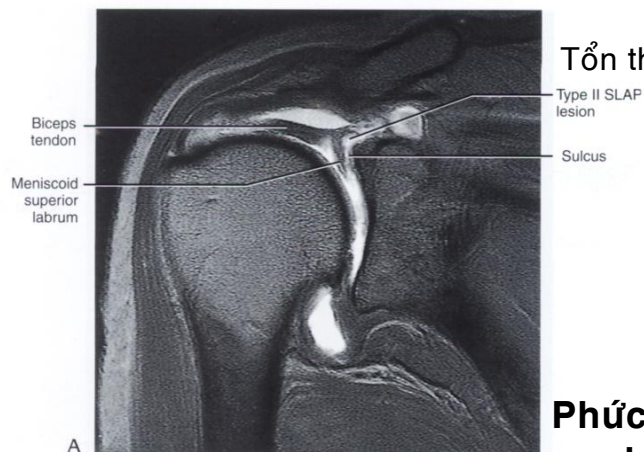


FIGURE 1-81A,B

(A) T1-weighted coronal oblique MR arthrogram illustrating a Type 3 biceps labral complex with a large sulcus extending underneath a meniscoid superior labrum. This meniscoid labrum has an associated Type II SLAP (superior labrum from anterior to posterior) lesion with detachment of the superior labrum and biceps tendon expansion (when present the finding of intralabral signal intensity can be used to differentiate a true SLAP lesion from a normal biceps labral sulcus). (B) Fat-suppressed T1-weighted axial MR arthrogram identifying the anterior to posterior extension of the Type II SLAP lesion. The Type II SLAP lesion and meniscoid labrum with posterior superior labral tear is shown on a T1-weighted sagittal MR arthrogram (C) and on a corresponding gross specimen (D).

Phức hợp sụn viền nhị đầu loại 3

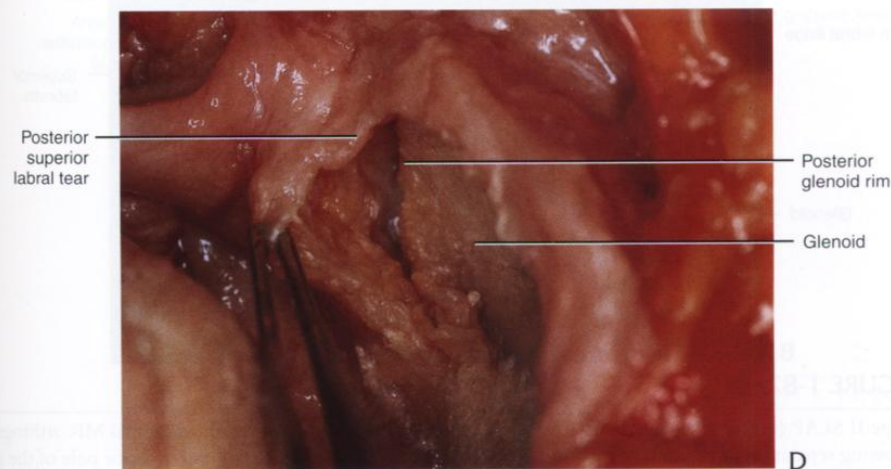
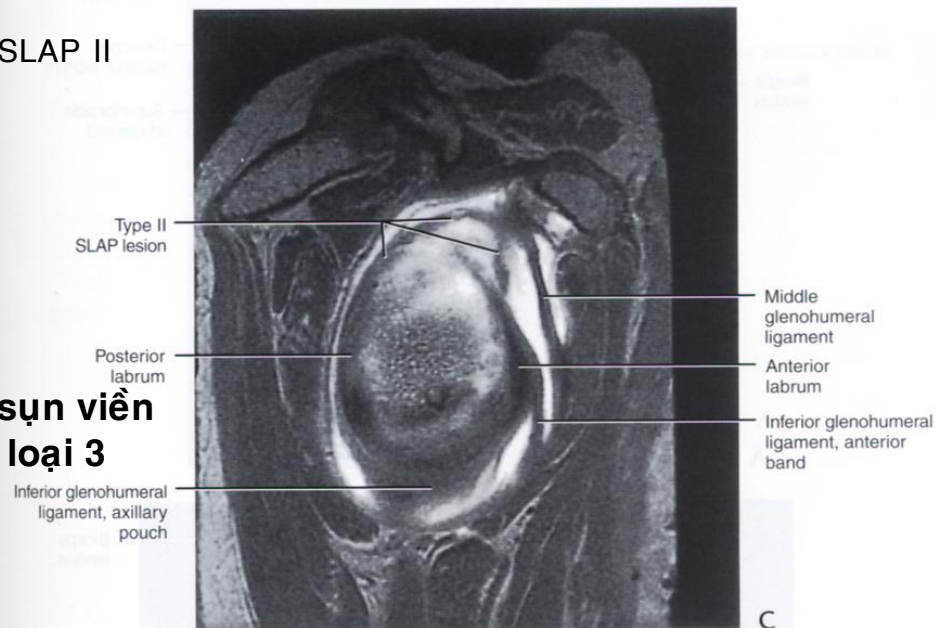
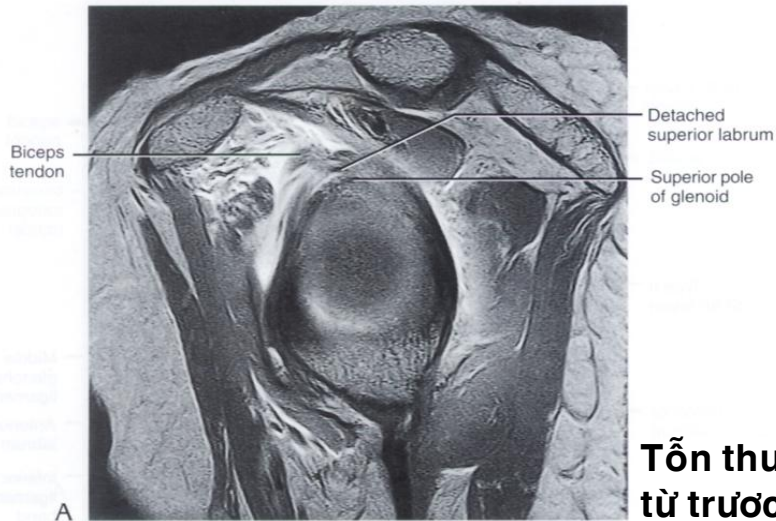


FIGURE 1-81C,D CONTINUED



Tổn thương sụn viền trên từ trước ra sau (SLAP)

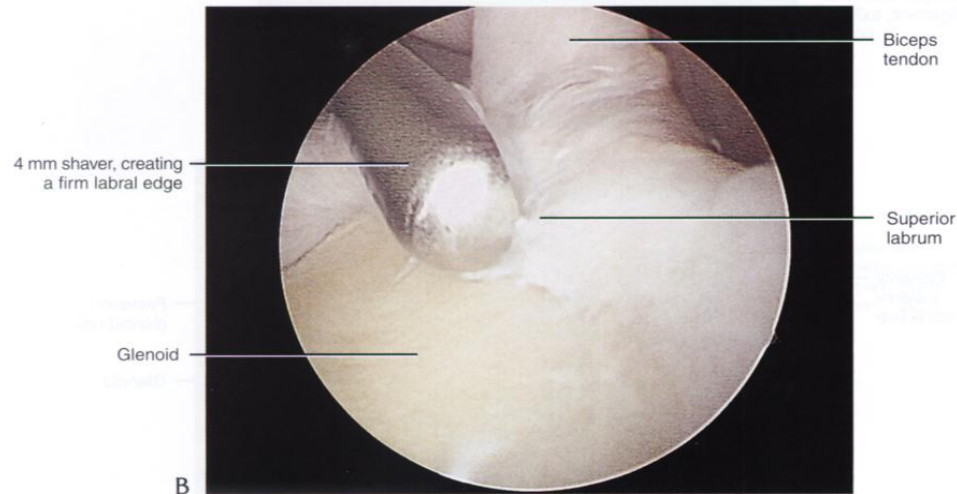
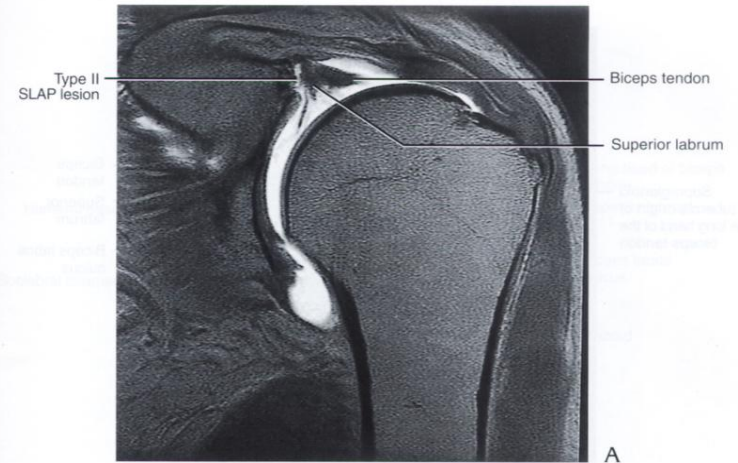


FIGURE 1-82A,B

Type II SLAP (superior labrum from anterior to posterior) lesion. (A) T1-weighted sagittal MR arthrogram showing separation of the superior labrum and biceps anchor (expansion) from the superior pole of the glenoid. (B) Arthroscopic view of a 4.0 mm shaver creating a firm edge to the superior labrum at the site of detachment.



SLAP II

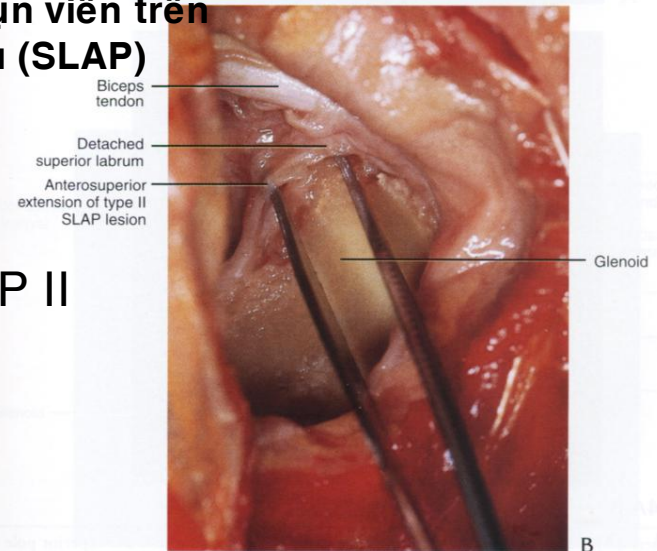
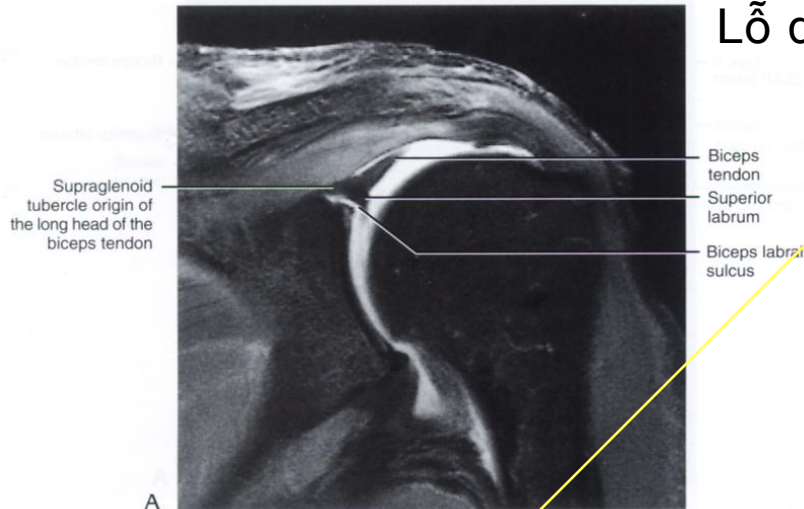


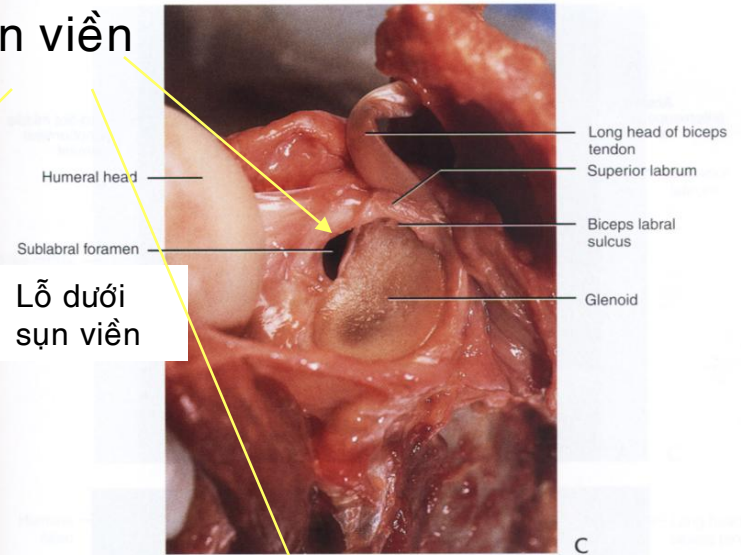
FIGURE 1-83A,B

Type II SLAP (superior labrum from anterior to posterior) lesion. A T1-weighted coronal oblique MR arthrogram (A) and a corresponding gross dissection (B) identifying superior labral and biceps tendon detachment. The term biceps expansion should be used to replace the torn biceps anchor since the origin of the biceps tendon from the supraglenoid tubercle is not involved. The biceps tendon has a separate expansion or attachment directly to the anterior and posterior glenoid labrum. Except for the frayed appearance of the superior labrum this SLAP lesion could be mistaken for a prominent biceps labral sulcus on the coronal oblique MR image.

Lỗ dưới sụn viền



Lỗ dưới sụn viền



Sụn viền trên trước

Anterosuperior labrum

Sublabral foramen

Lỗ dưới sụn viền

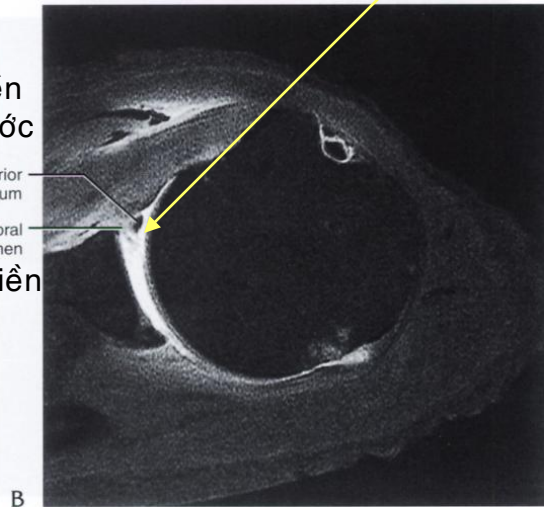
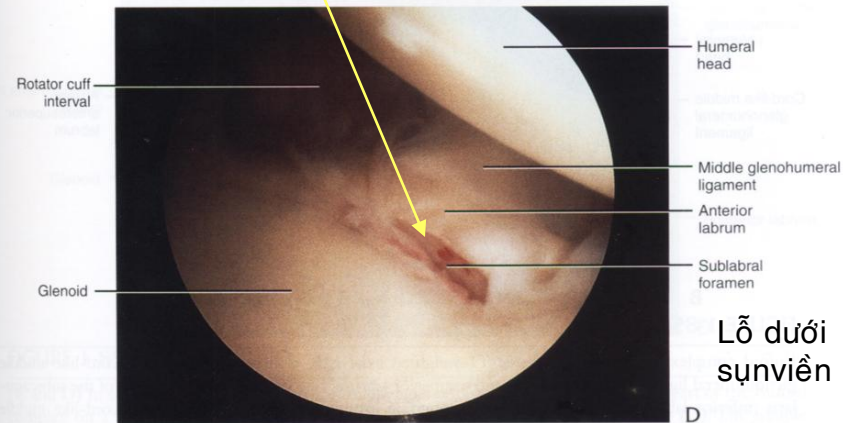


FIGURE 1-84A,B

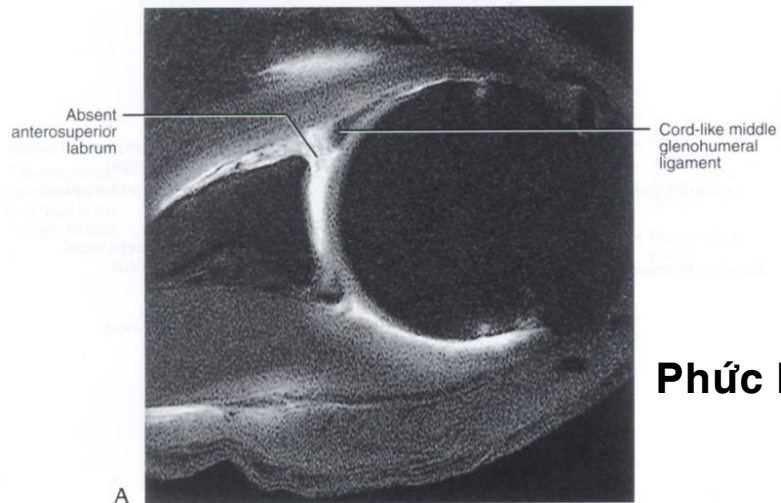
Sublabral foramen. (A) The biceps labral sulcus between the superior labrum and the superior pole of the glenoid is not the sublabral foramen. (B) The sublabral foramen is shown with fluid undermining the anterosuperior labrum.



Lỗ dưới sụn viền

FIGURE 1-84C,D CONTINUED

(C) Corresponding gross specimen has both an anterosuperior sublabral foramen and a superior biceps labral sulcus. This is a common association in a meniscoid superior labrum. (D) An arthroscopic photograph of a separate specimen showing a sublabral foramen with an absent anterior labral attachment above the epiphyseal line of the glenoid.



Phức hợp Buford

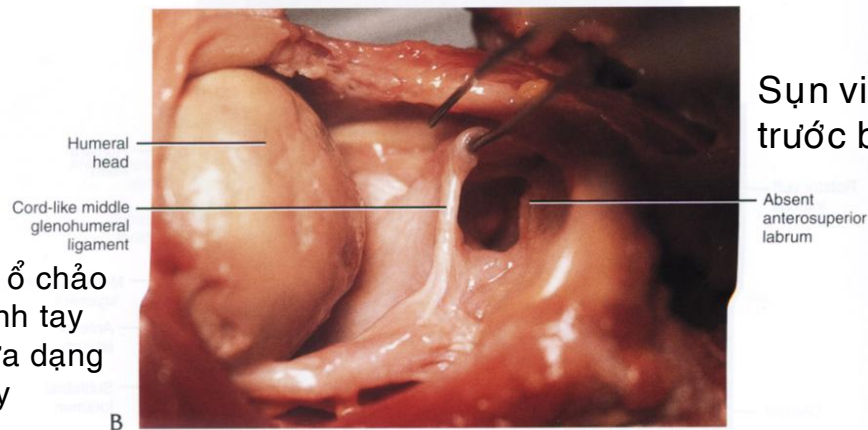


FIGURE 1-85A,B

Buford complex. (A) A fat-suppressed T1-weighted axial MR arthrogram showing a cord-like middle glenohumeral ligament with an absent anterosuperior labrum. The labrum below the level of the subscapularis (inferior labrum) is normal. (B) Corresponding gross specimen demonstrates the cord-like middle glenohumeral ligament, which attaches directly to the superior labrum.

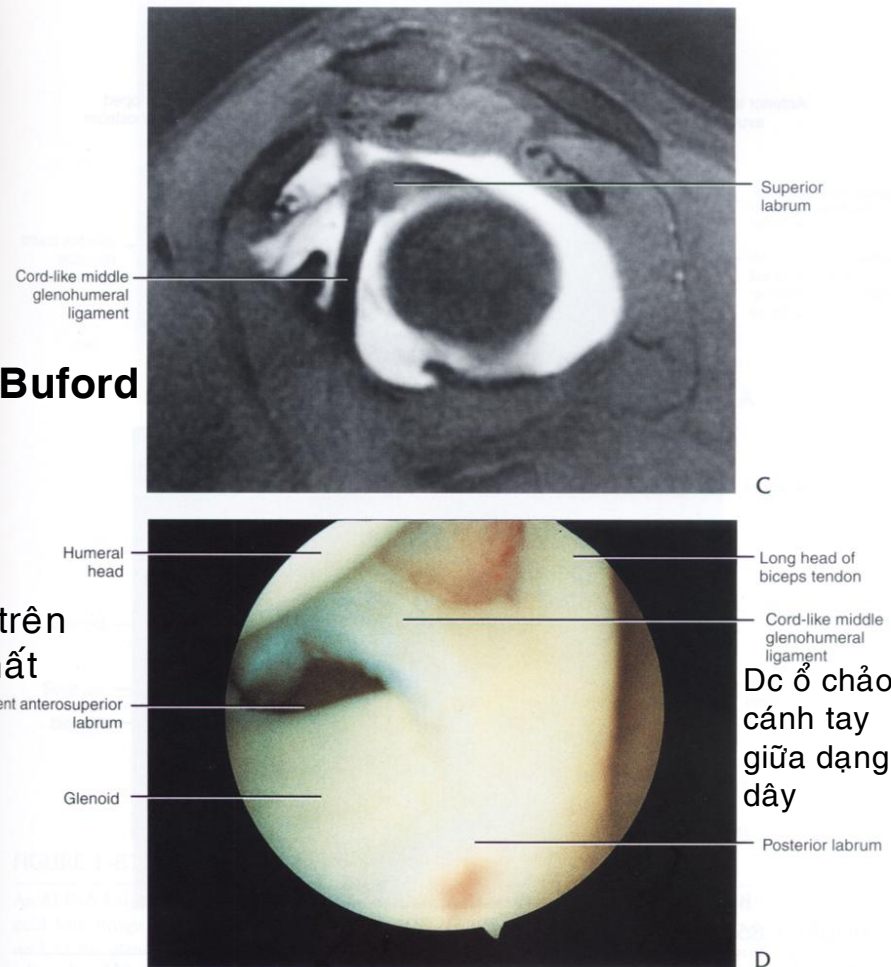
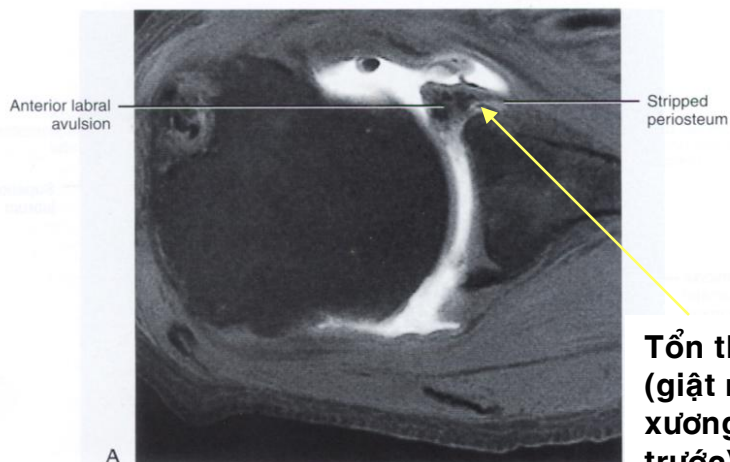


FIGURE 1-85C,D CONTINUED

(C and D) In a separate specimen, a cord-like middle glenohumeral ligament is shown as part of the Buford complex on a fat-suppressed T1-weighted sagittal image (C) and an arthroscopic view (D). The middle glenohumeral ligament can be seen to be directly attached to the superior labrum at the base of the biceps anchor.

Dc ổ chảo
cánh tay
giữa dạng
dây

Dc ổ chảo
cánh tay
giữa dạng
dây



**Tổn thương ALPSA
(giật rứt trượt màng
xương dc sụn viền
trước)**

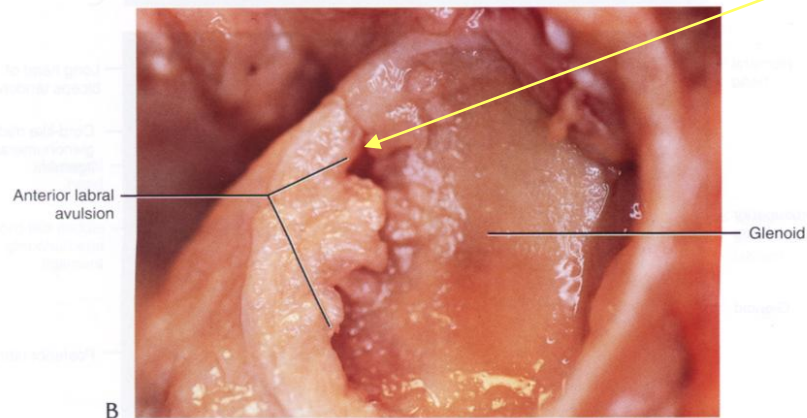


FIGURE 1-86A,B

(A and B) Anterior labral avulsion shown on a fat-suppressed T1-weighted MR arthrogram (A) and on the corresponding glenoid dissection (lateral view) (B).

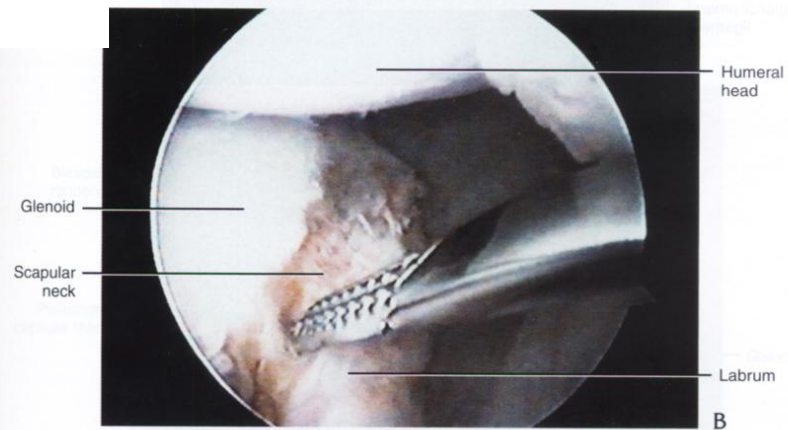
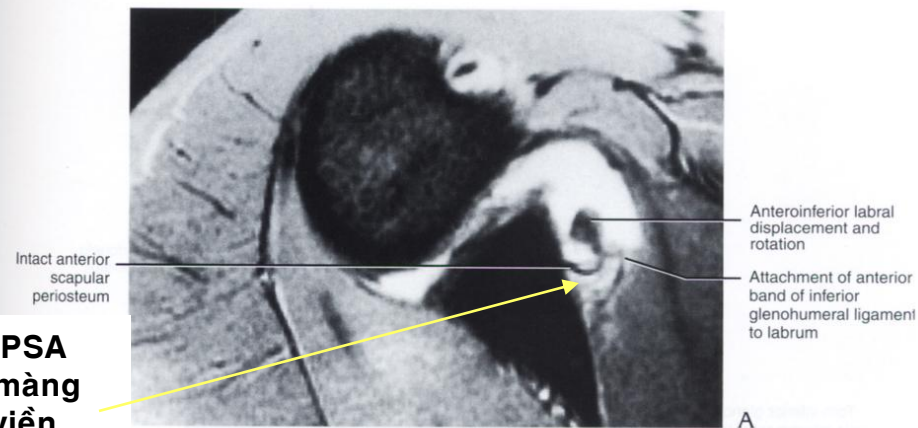


FIGURE 1-87A,B

An ALPSA lesion (anterior labroligamentous periosteal sleeve avulsion) is demonstrated on a T2*-weighted axial MR image (A) and an arthroscopic view (B). The labrum is displayed medially along the anterior neck of the glenoid. The associated inferior rotation of the labrum produces a blunted morphology as appreciated on the axial MR image in part A.

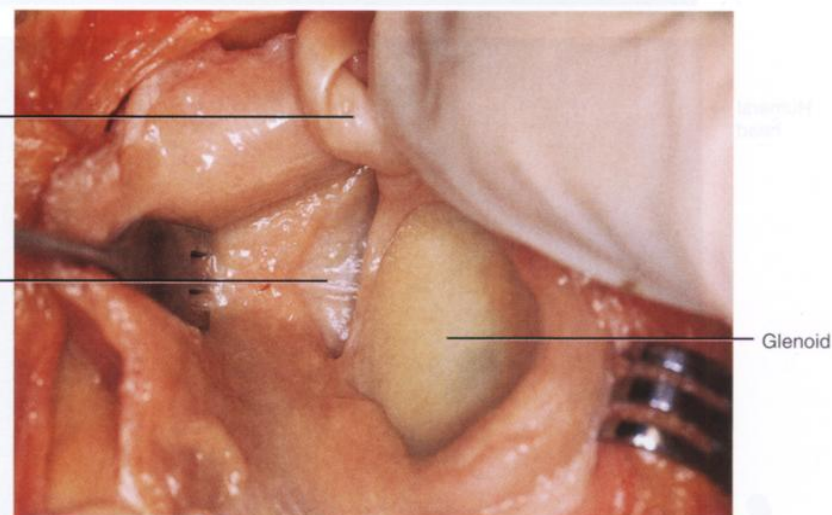
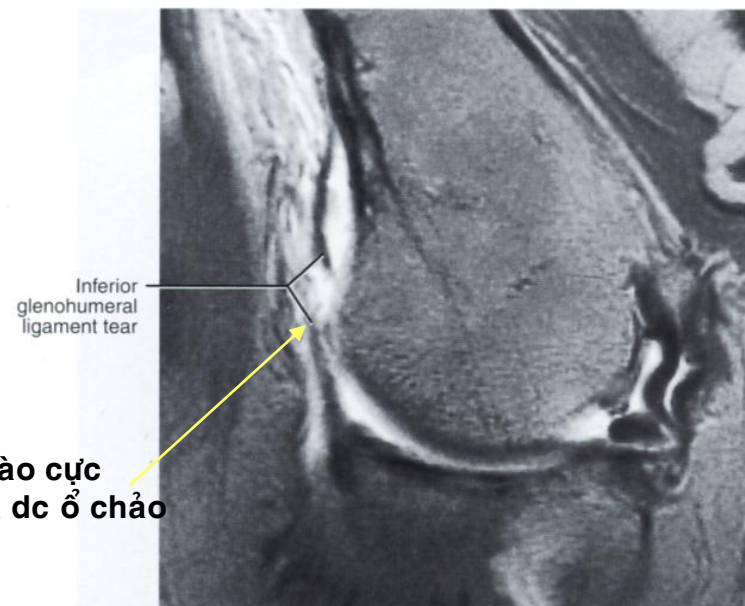
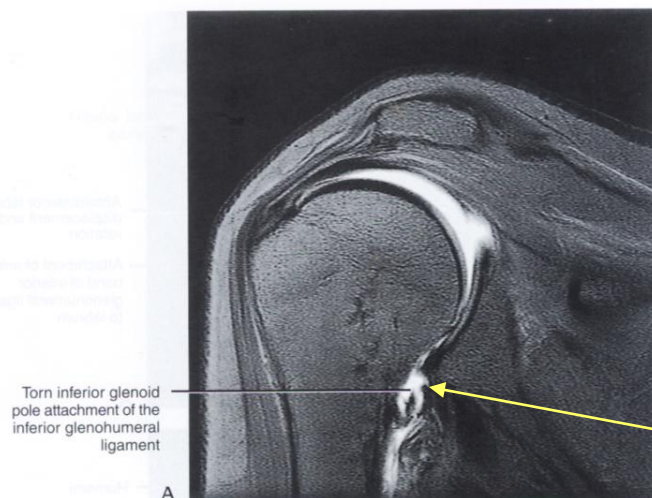


FIGURE 1-88A,B

A posterior capsule tear with an inferior glenohumeral ligament defect is shown on a T1-weighted posterior coronal oblique MR arthrogram (A), a fat-suppressed T1-weighted axial MR arthrogram (B), and an external rotation and abduction (ABER) MR arthrogram (C). (D) The corresponding capsular defect is shown on the gross dissection.

Rách nơi bám vào cực dưới ổ chảo của dc ổ chảo cánh tay dưới

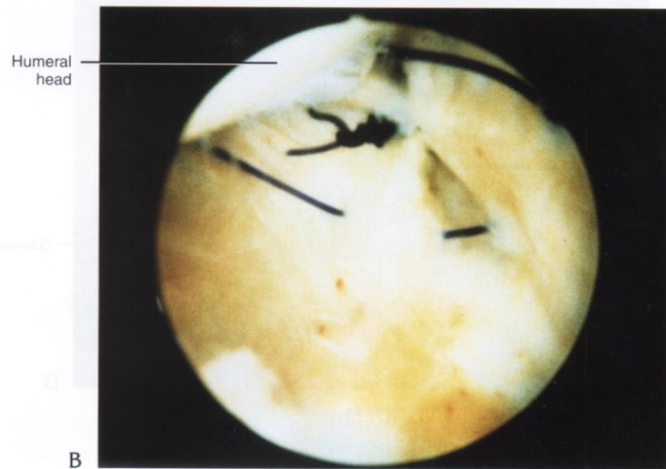
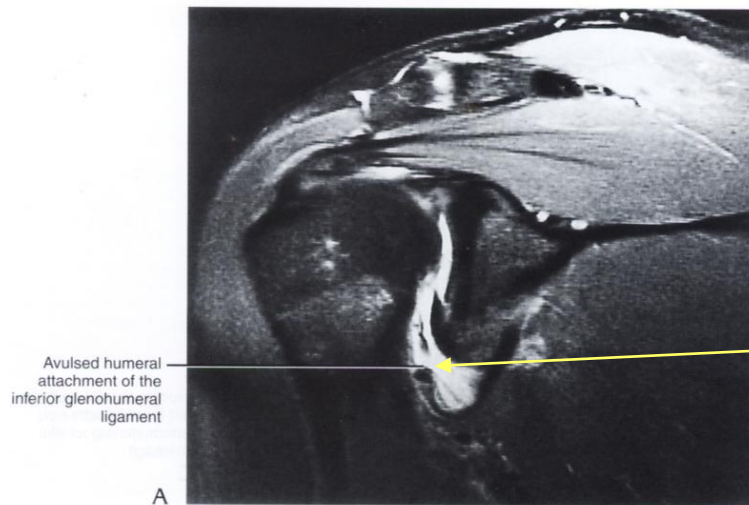


FIGURE 1-89A,B

Humeral avulsion of the glenohumeral ligament (HAGL lesion). (A) A fat-suppressed T2-weighted fast spin-echo coronal oblique MR arthrogram showing tearing of the humeral attachment of the inferior glenohumeral ligament. (B) The corresponding arthroscopic view showing suturing with coaptation of the detached portion of the inferior glenohumeral ligament.

**Tổn thương HAGL:
giật rứt ở chỏm
cánh tay của dc ổ
chảo cánh tay dưới**

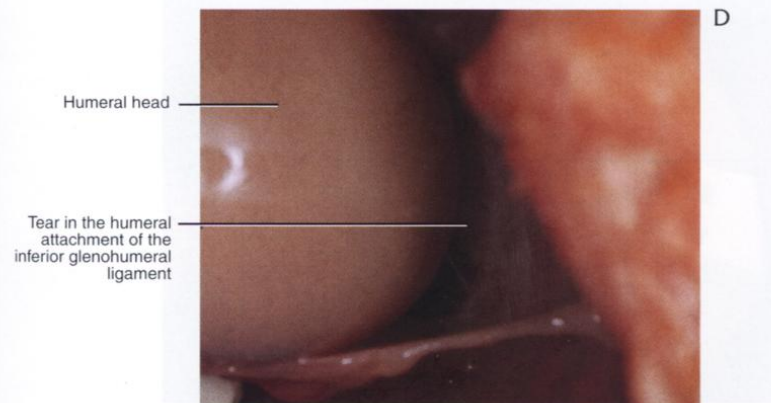
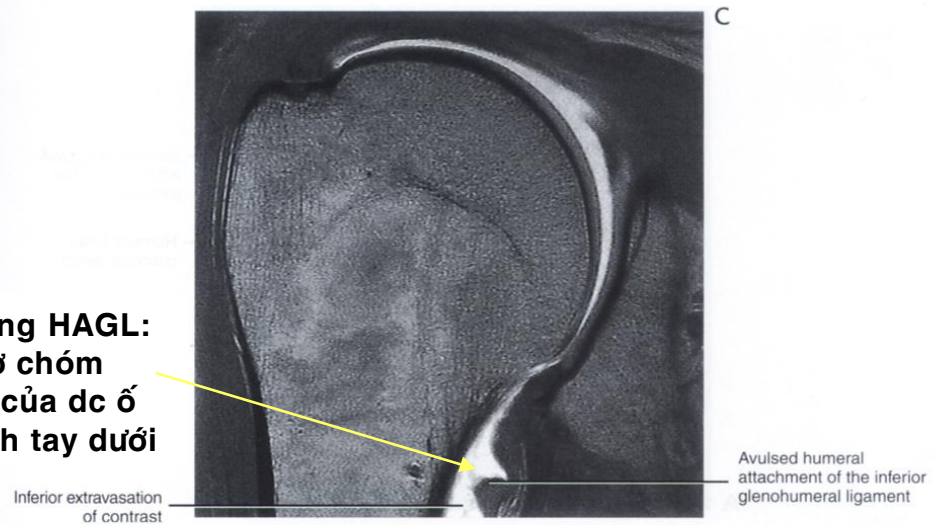
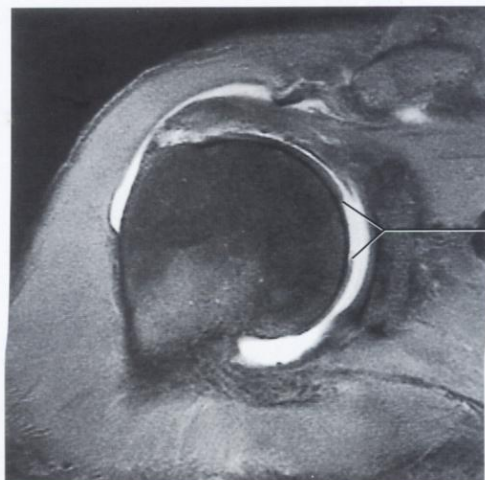


FIGURE 1-89C,D CONTINUED

(C and D) In a separate case, the T1-weighted coronal oblique MR arthrogram (C) and gross specimen (D) demonstrate the defect in the humeral attachment of the inferior glenohumeral ligament. The HAGL lesion may exist in patients with anterior instability with or without an associated anterior labral tear.

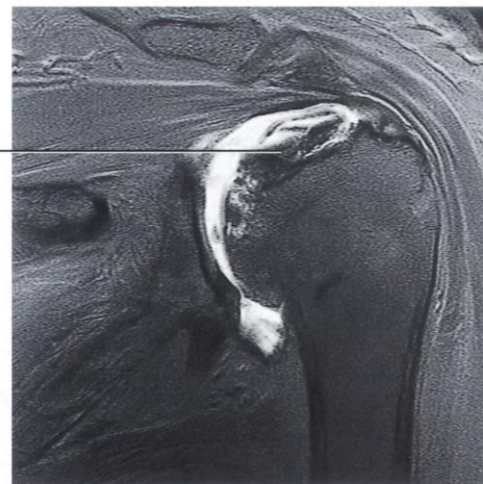


A

Humeral head
chondral defect

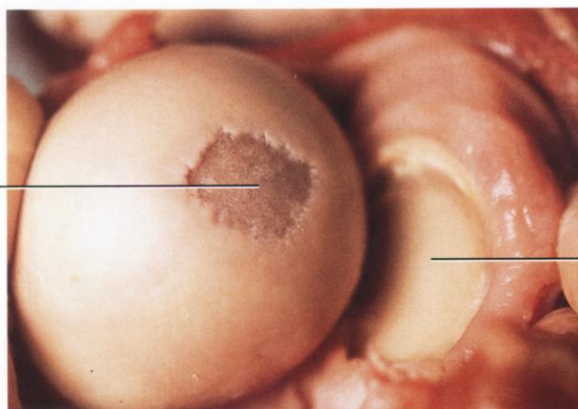
**Hại tử vô mạch với
xẹp dưới sụn**

**Mất sụn chỏm
xương cánh tay**



Avascular necrosis
with subchondral
collapse

A



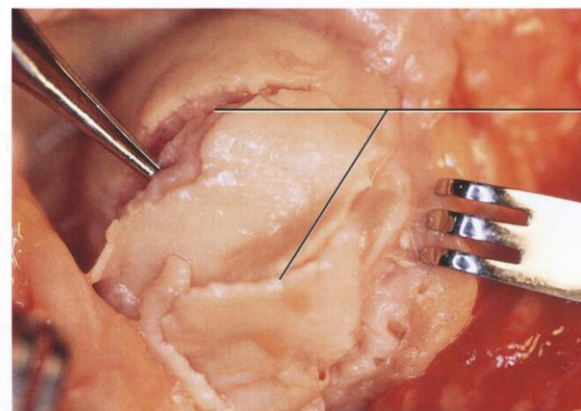
B

Humeral head
chondral defect

Glenoid

FIGURE 1-90A,B

Articular cartilage loss of the humeral head in osteoarthritis. **(A)** Fat-suppressed T1-weighted coronal oblique MR arthrogram. **(B)** Gross dissection of the disarticulated humeral head.



B

Subchondral collapse in
avascular necrosis of the
humeral head

FIGURE 1-91A,B

(A and B) A fat-suppressed T1-weighted coronal oblique MR arthrogram **(A)** and a humeral head superior view **(B)** demonstrate extensive subchondral collapse producing flattening of the humeral head in avascular necrosis.