Shoulder arthroscopy

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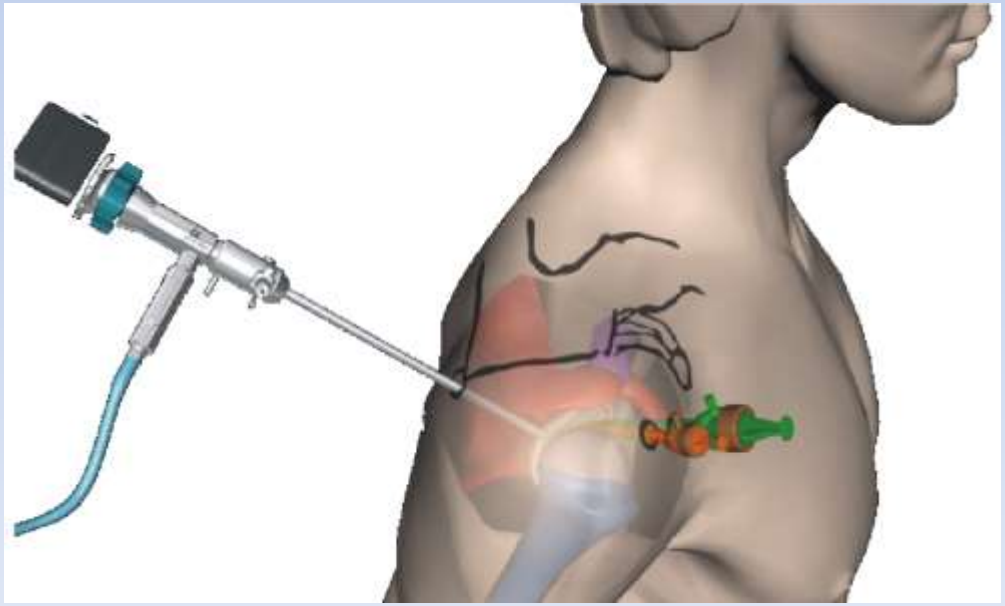
Fellowship in shoulder and arthroscopic surgery

Shoulder arthroscopy

- Evolve understanding of anatomy and pathophysiology of shoulder
- This technology, allow to treat a broader variety of shoulder diseases



Equipments

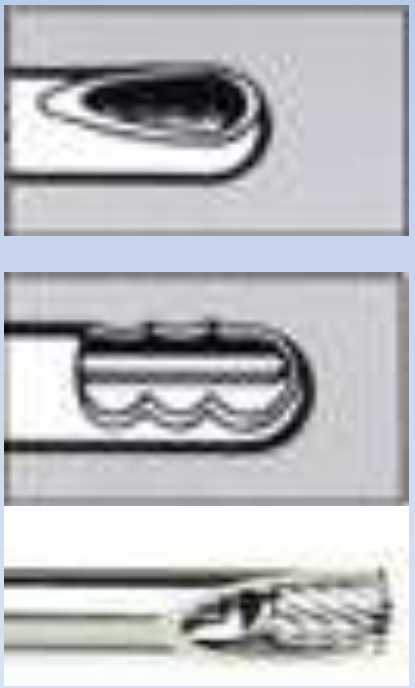
- standard operating room table
- continuous distention with a fluid medium (Normal saline)
  - static (i.e., gravity-assisted)
  - arthroscopic pump systems
- mechanical instrumentation (shavers, burr)
- electrocoagulation and cautery

Equipments

- standard operating room table

Equipments

- **mechanical instrumentation (shavers, burr)**
- electrocoagulation and cautery



Equipments

- mechanical instrumentation (shavers, burr)
- **electrocoagulation and cautery**

Equipments

- mechanical instrumentation (shavers, burr)
- **electrocoagulation and cautery**

	Coblation-based Devices	Conventional Electrosurgical Devices
Temperatures	40°C to 70°C	MORE THAN 400°C
Thermal Penetration	Minimal	Deep
Effects on target tissue	Gentle removal, dissolution	Rapid heating, charring, burning, cutting
Effects on surrounding tissue	Minimal dissolution	Inadvertent charring or burning

Equipments

- continuous distention with a fluid medium (Normal saline)
  - static (i.e., gravity-assisted)
  - arthroscopic pump systems

advantages of gravity-based systems are :

-Safety

- Simplicity

- Low cost

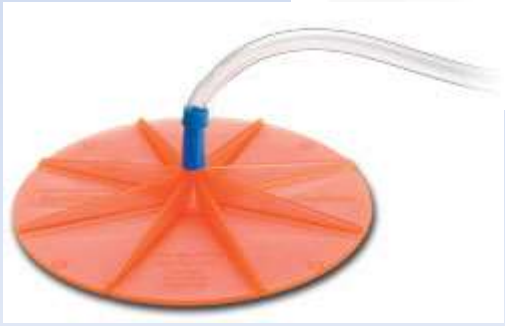
- Visualization may be affected by fluctuations in the entry flow, making it necessary to temporarily interrupt surgery

Equipments

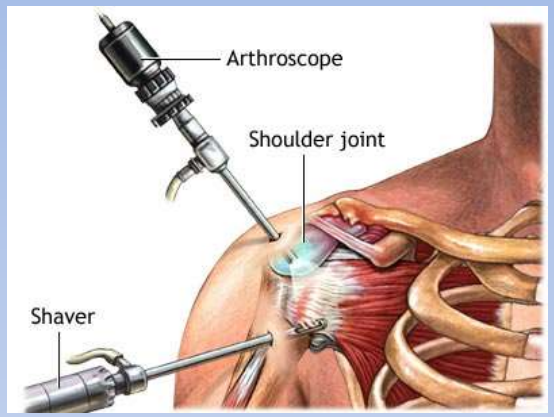
- continuous distention with a fluid medium (Normal saline)
  - static (i.e., gravity-assisted)
  - arthroscopic pump systems

Types of pumps:

1- pumps with pressure controls
2- pumps with independently modifiable pressure and flow controls

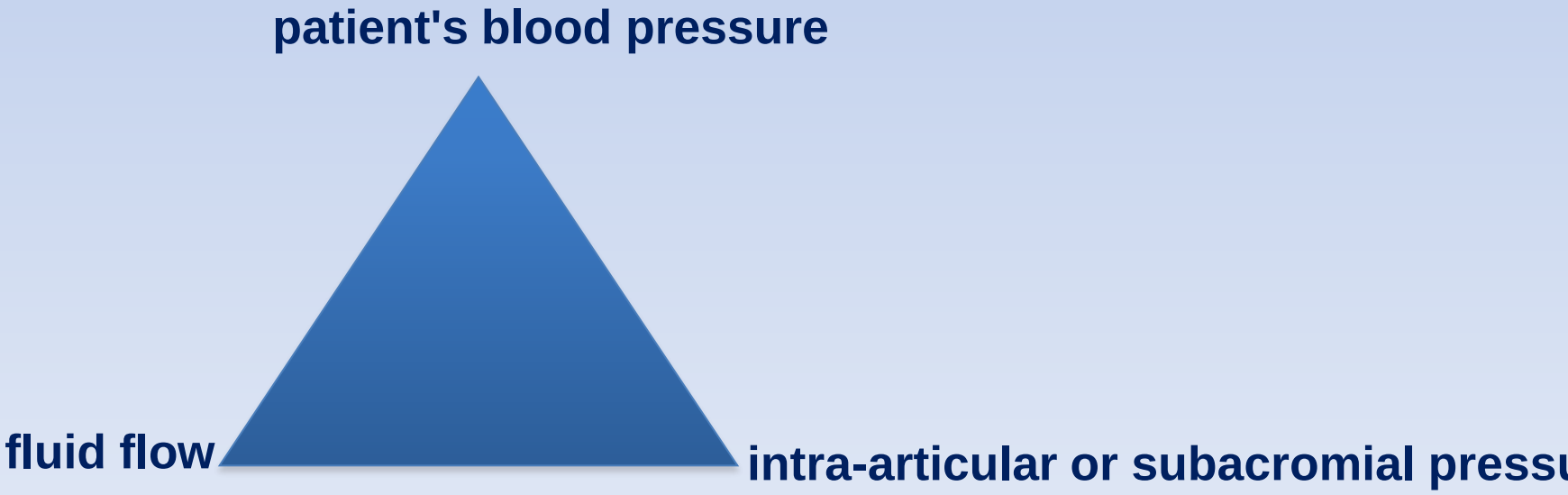


Arthroscopic surgery similar to open surgery



- exposure is everything

  → you can't fix what you can't see
- Bleeding during surgery can inhibit visualization



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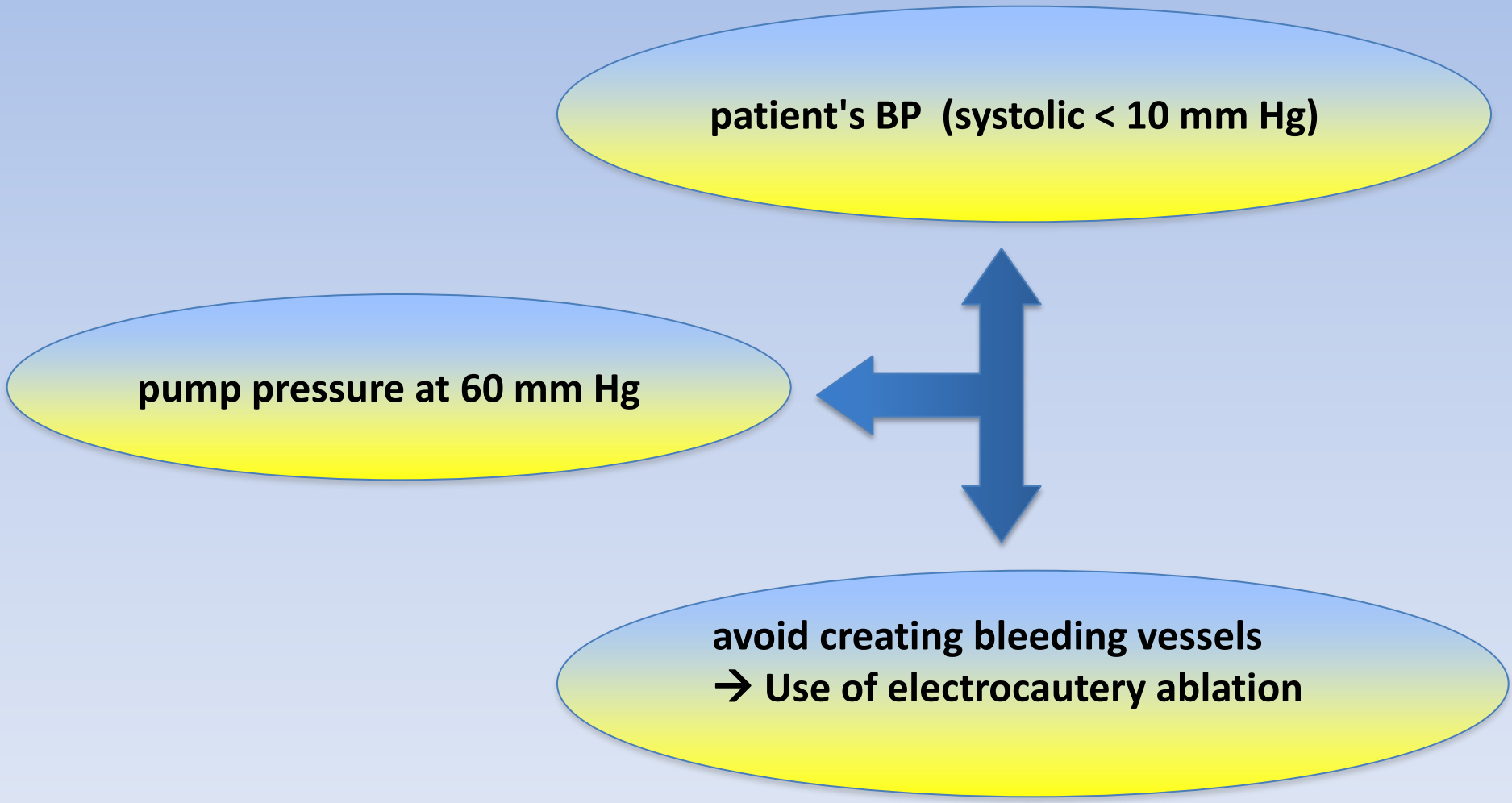
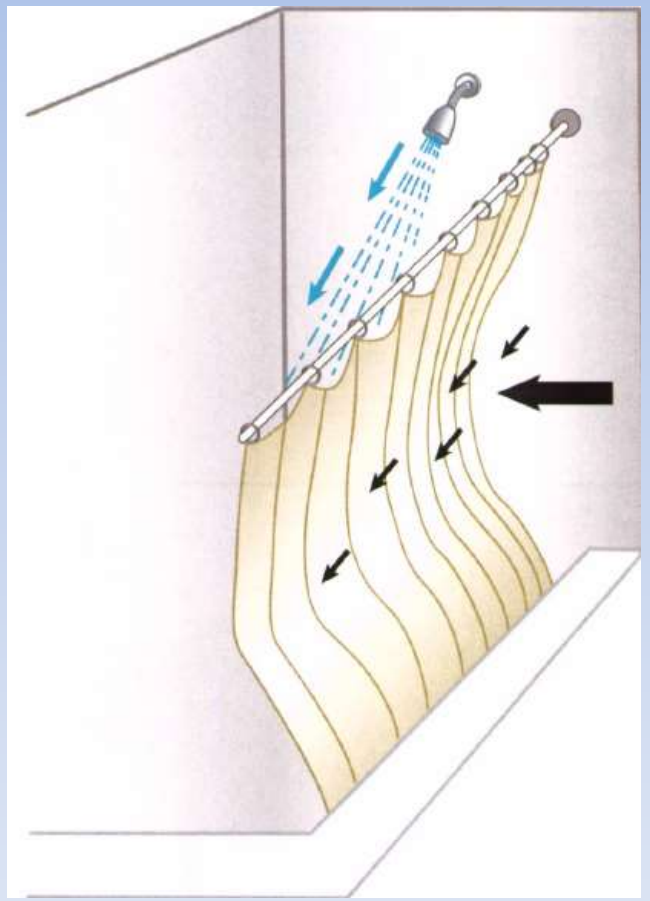
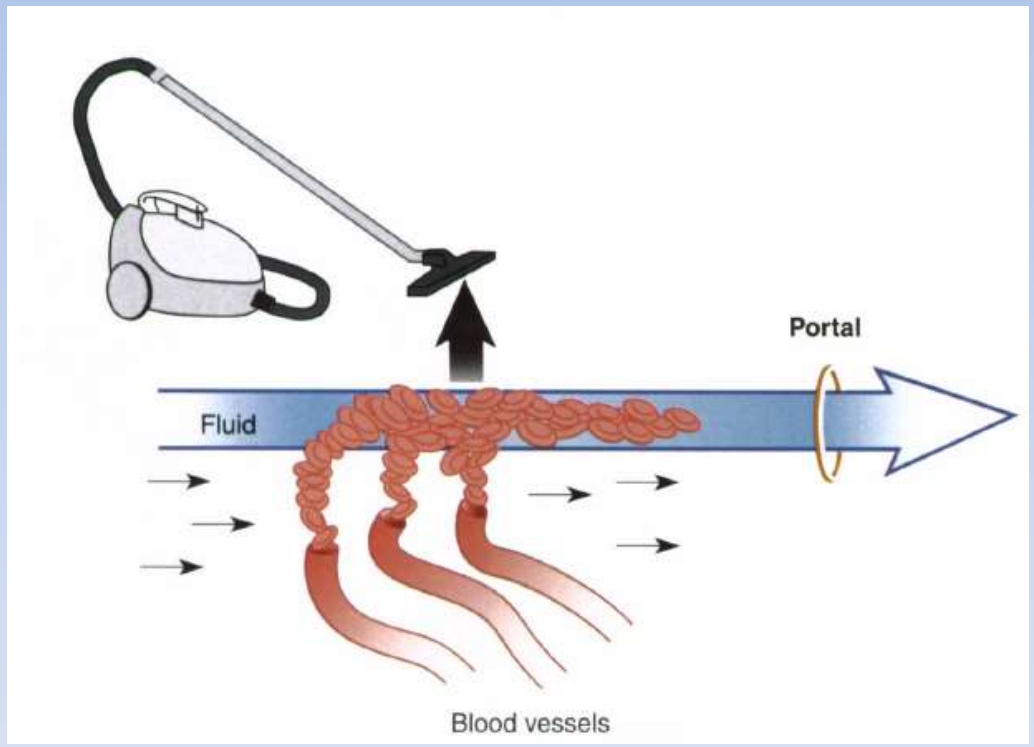
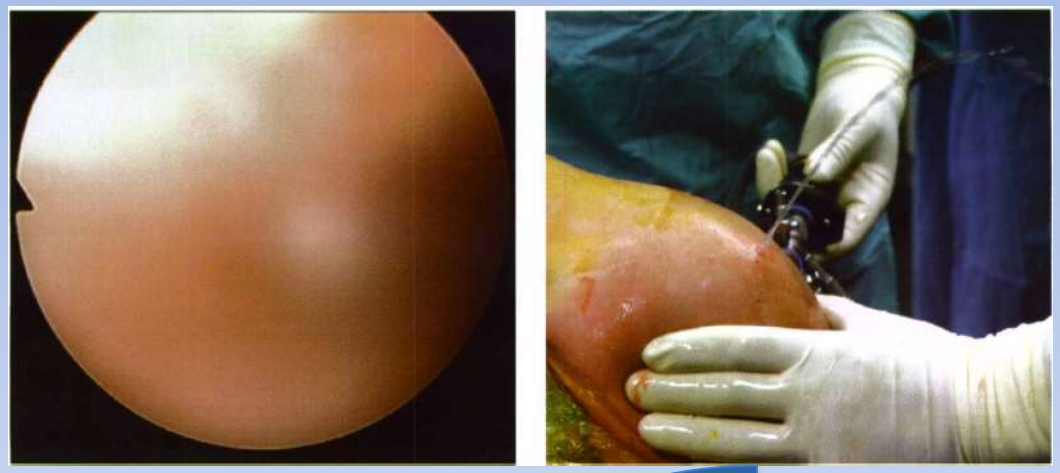


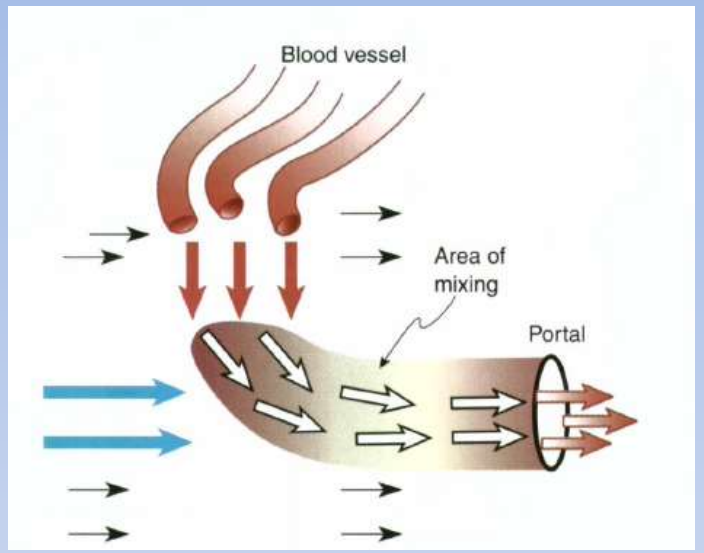
Bernoulli Effect





Controlling turbulence

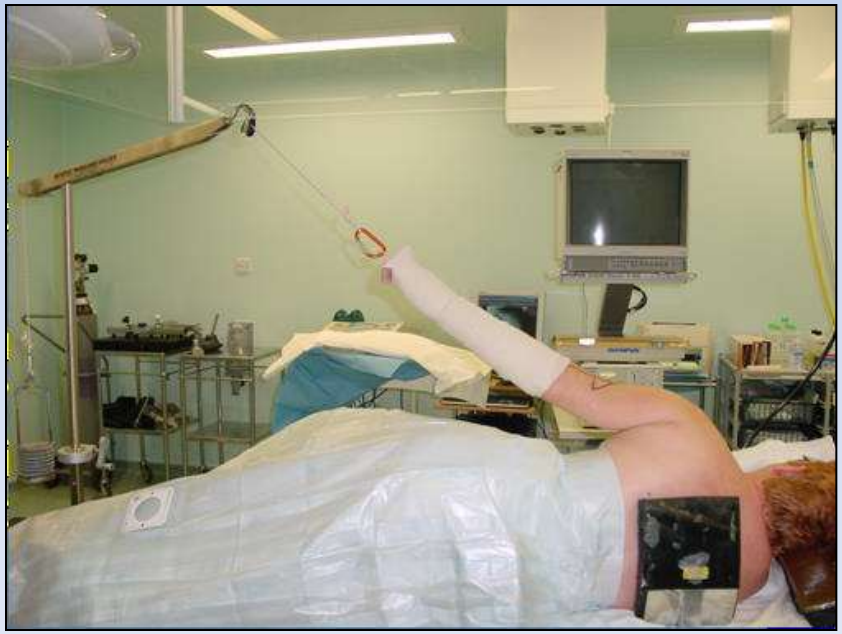




position

lateral decubitus position

- continuous traction allows easier GH & subacromial arthroscopy

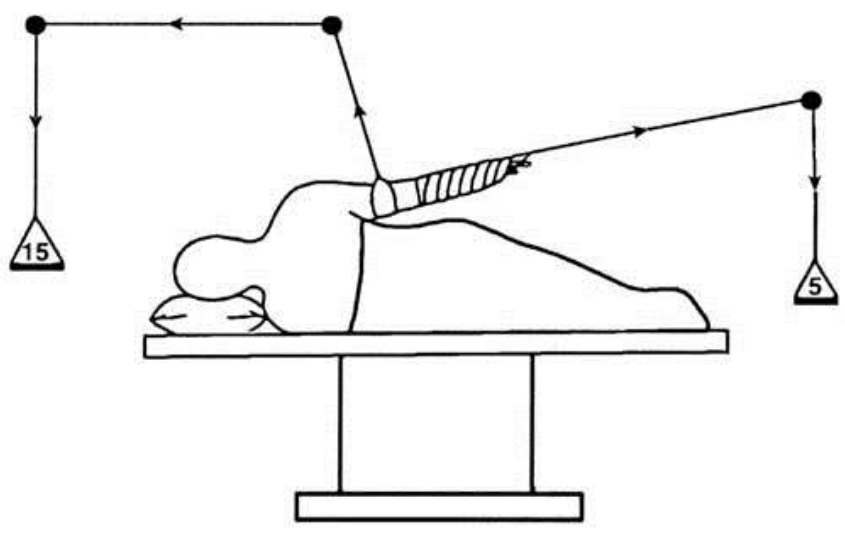


beach-chair position

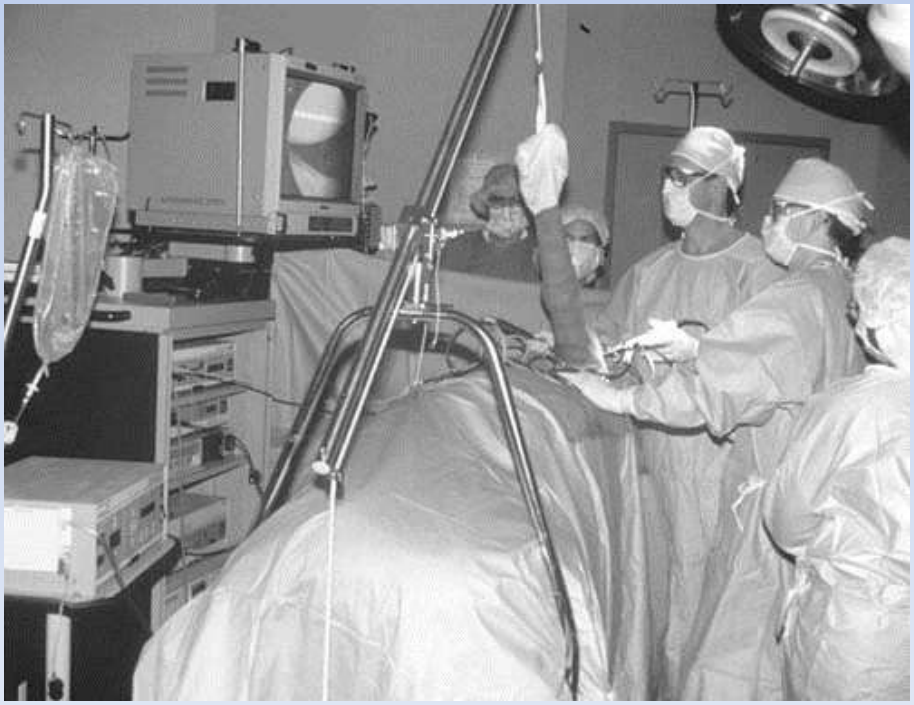
- more convenient for regional anesthesia and converting to open procedures

lateral decubitus position

- < 10–15 lbs longitudinal traction
- position of the arm
  - 45˚ to 70˚ of abduction
  - 20˚ to 30˚ of forward flexion



Hennrikus et al. (Am J Sports Med 23:444, 1995.)

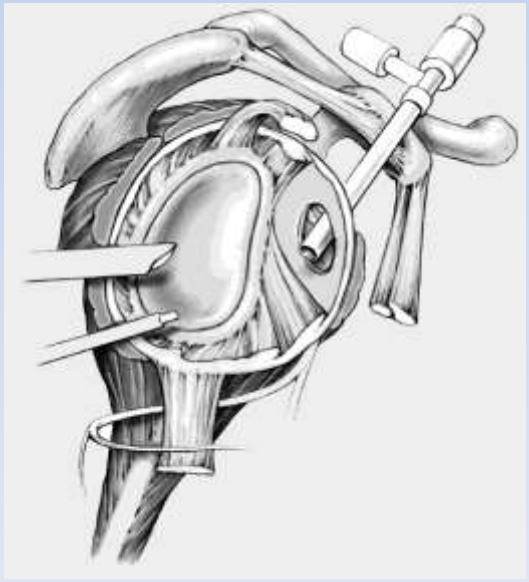


beach-chair position

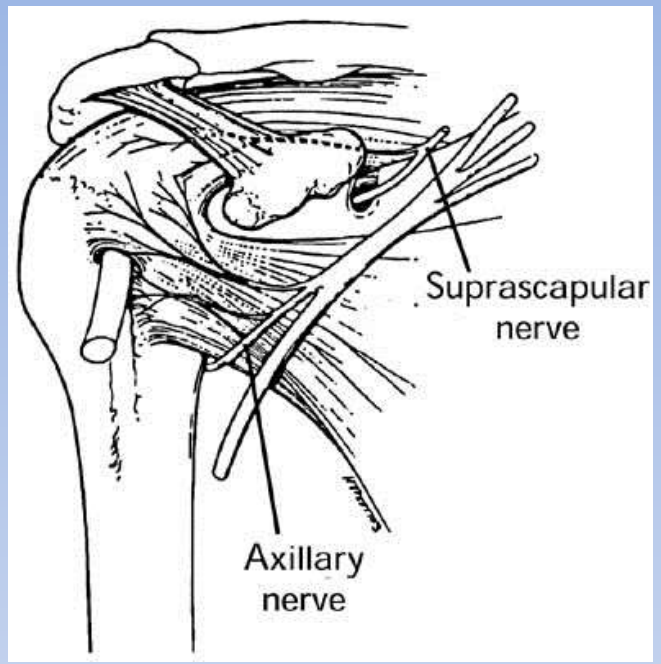
- Anatomical
- Convert to Open surgery
- Move arm
- Less Nerve injury

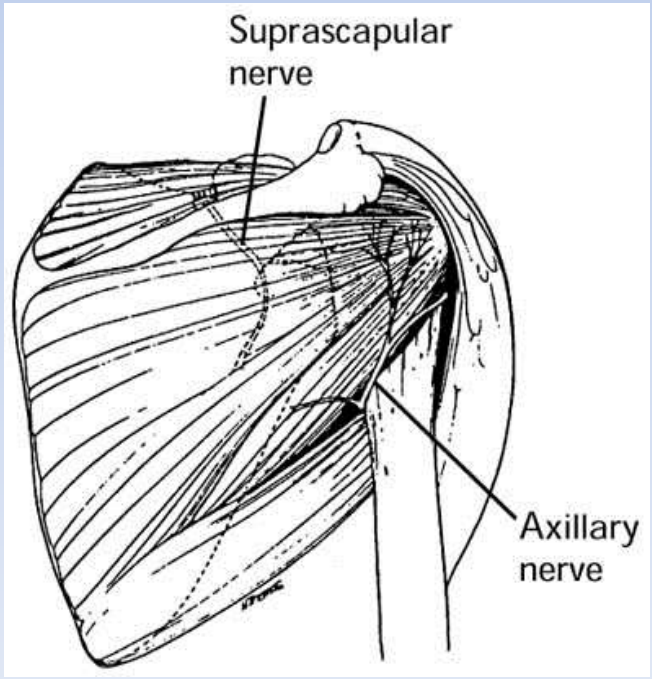
portals

- Glenohumeral Joint
  - posterior portal
  - anterior portal
    - Anterosuperior, anteroinferior
  - superior portal
- Subacromial Space
  - Subacromial (posterior) portal
  - lateral portal
    - Anterolateral, mid-lateral, posterolateral portals



portals


Suprascapular
nerve
Axillary
nerve

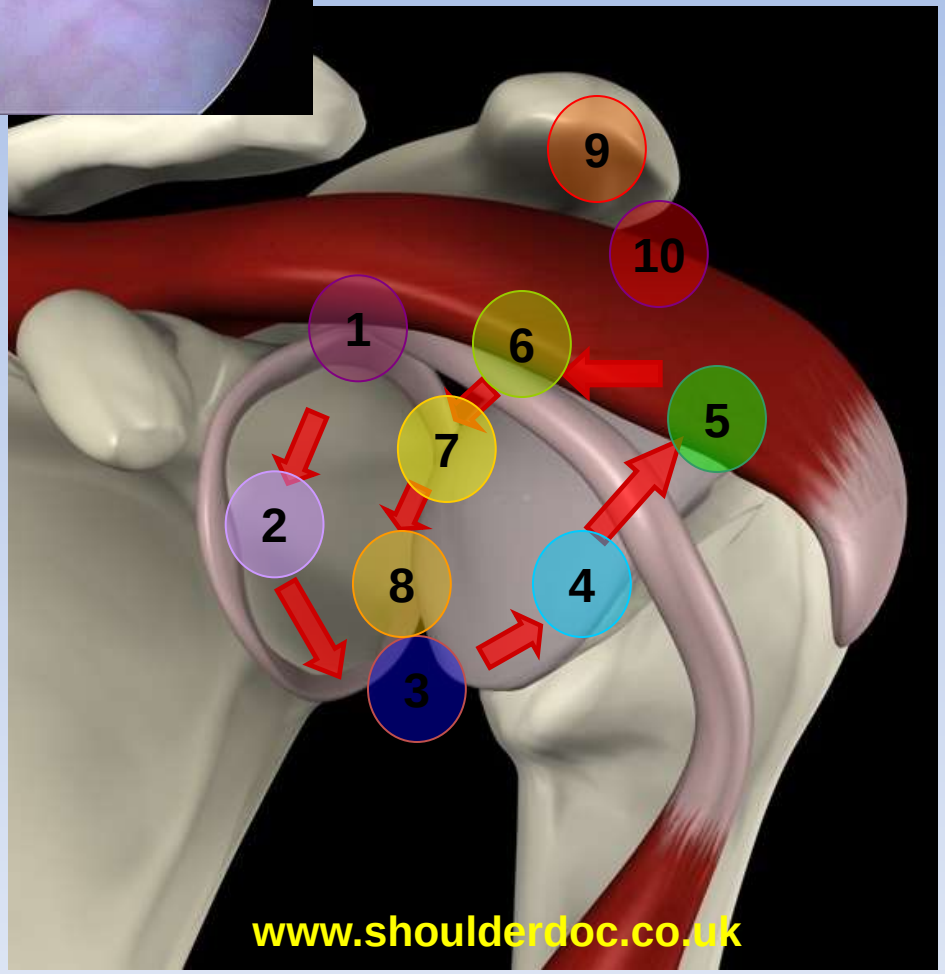

Suprascapular
nerve
Axillary
nerve

"To perform arthroscopic surgery on the shoulder ….
a thorough knowledge of
normal anatomy and its variants
are especially important
in order to differentiate
normal from pathological findings"

Hulstyn & Fadale, 1995

10 Point Shoulder Arthroscopy

Lennard Funk



GLENOHUMERAL JOINT:

1 – LHB (SLAP, tear)

2 – Glenoid & Posterior Labrum

3 – Inferior Recess

4 – Humeral Head, Bare area, Posterior Cuff

5 – Anterosuperior Cuff

6 – Rotator Interval (pulley, LHB in groove, SGHL)

7 – Subscap, MGHL, anterior labrum

8 – AnteroInferior labrum, IGHL

SUBACROMIAL BURSA:

9 – CAL & Acromion

10 – Rotator Cuff - Bursal side

Glenoid Labrum

- Loosely Attached:
  - Superior
  - Anterosuperior
- Firmly Attached:
  - Inferior

Superior Labrum

Triangular

Bumper

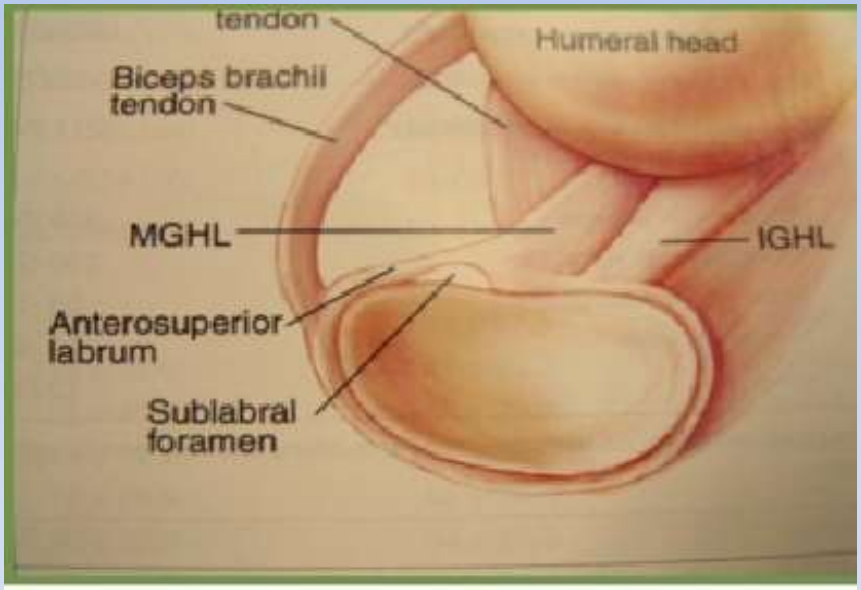
Meniscoid

Mobile

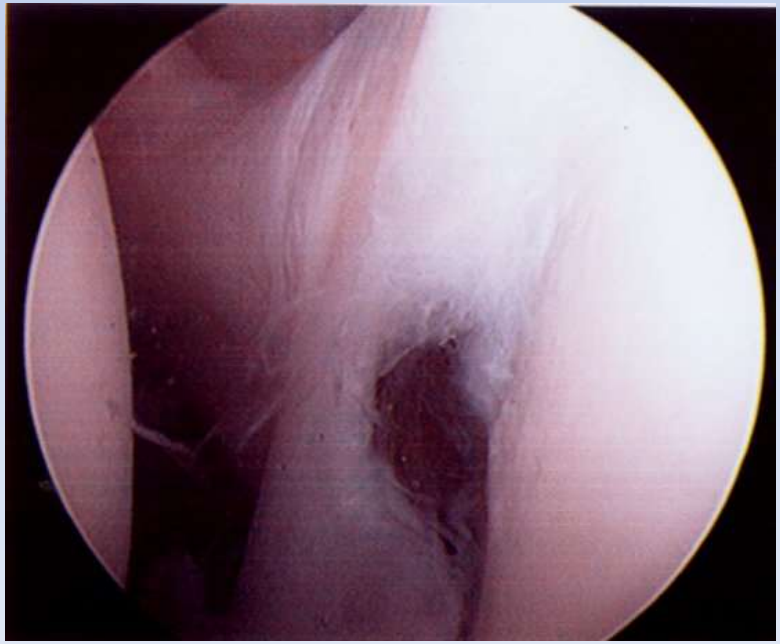
Sublabral Foramen

Atraumatic detachment of the labrum from the underlying glenoid

Prevalence → 10 -20% in arthroscopy



Sublabral Foramen / MGHL Tear



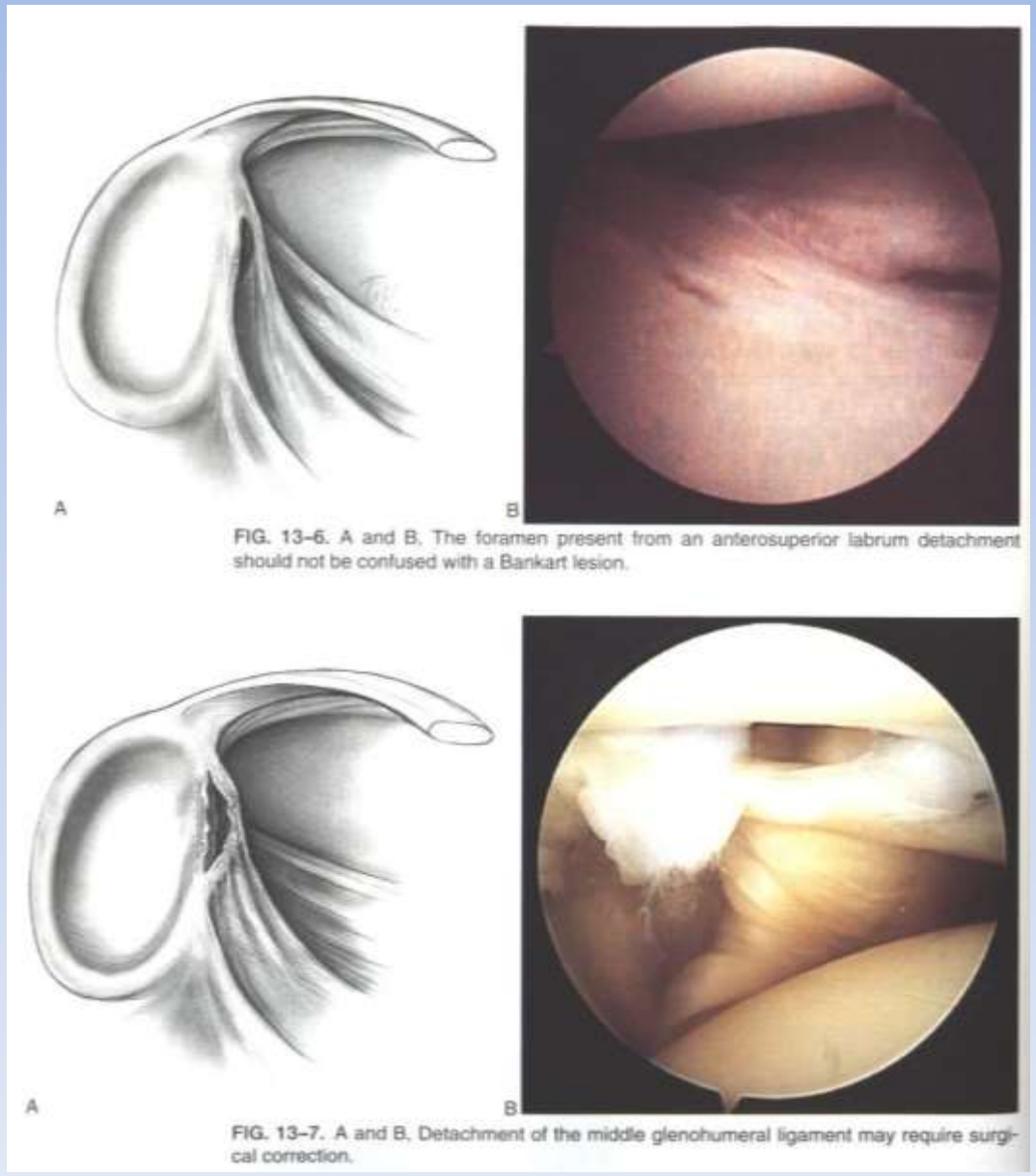


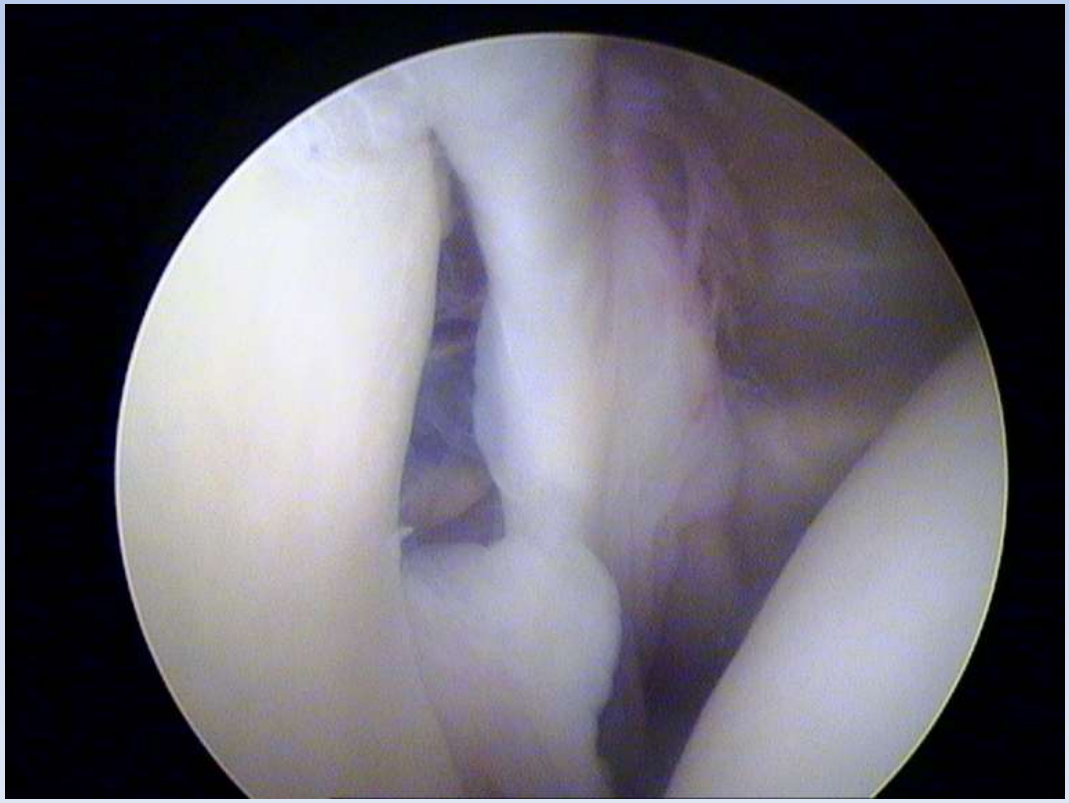
FIG. 13–6. A and B. The foramen present from an anterosuperior labrum detachment should not be confused with a Bankart lesion.

FIG. 13–7. A and B. Detachment of the middle glenohumeral ligament may require surgical correction.

Buford Complex

Sublabral Foramen + Cord-like MGHL

1 – 6% prevalence in Arthroscopic study



Superior GHL

- Poor Visualisation
- Present in 40%-100%
- > 2mm diameter in 65%

Middle GHL

- Present in 60-100%
- Cord-Like = 20%
- Thin Veil
- Bifid

Anterior Band IGHL

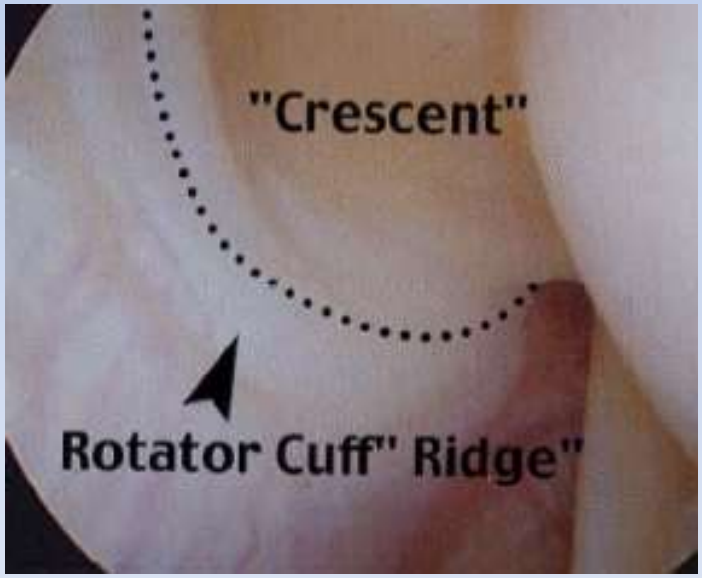
- Present in 75-100%

Biceps Pulley

- Tendoligamentous Sling

Rotator Cuff Ridge

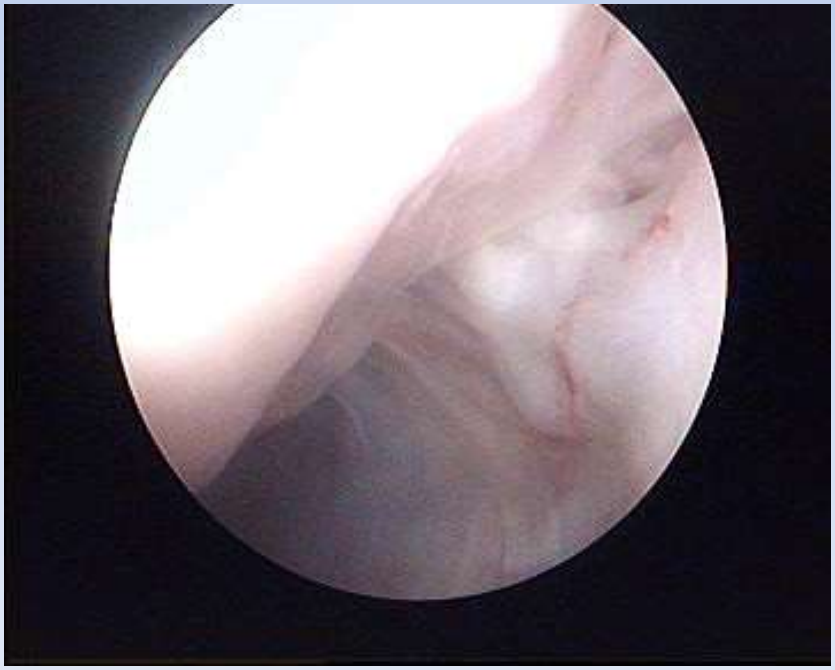
- Capsular Band under Rotator Cuff
- Perpendicular to LHB
- Encloses the Rotator Cuff Crescent



✘ Joint Side Partial Thickness Cuff Tear

Humeral Head Bare Area

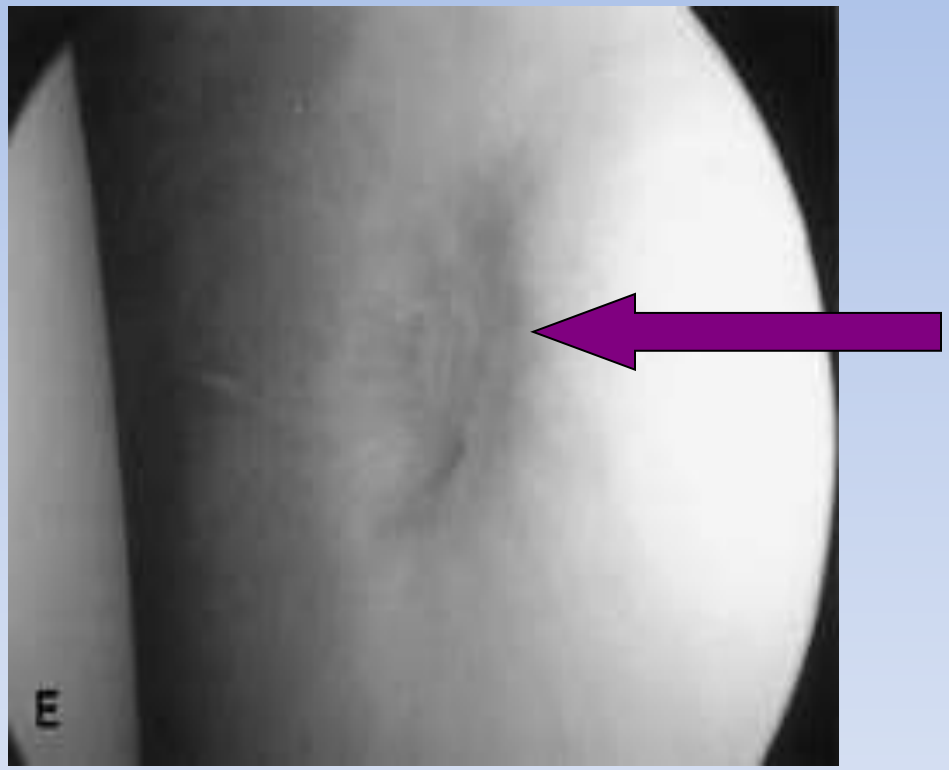
- Increase in size with age (DePalma)
- Size
  - 6 – 12mm (Cadaver)
  - Few mm – 20mm
- Fenestrations
- Vascular Pits



✘ **Hill-Sachs Lesion**

Glenoid – Bare Area

- Younger > Old
- ? Incidence



✘ **Osteochondral Lesions**

Pathological Lesions

SLAP Tear

Rotator Cuff Tear

Bony Bankart

Bankart Tear

Posterior Labral Tear

www.shoulderdoc.co.uk

Summary

- **Shoulder arthroscopy is a less invasive surgery if :**
  - **Good equipments**
  - **Good visualization**
  - **Good knowledge & experience**

Thank you for attention