KEYS TO A COMPLETE DIAGNOSTIC SHOULDER EXAM

Part 3: Arthroscopic Cases Training and Conclusions

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Beach Chair Portal Locations and Bony Landmarks

1 = Posterior
2 = Anterior Central
6 = Anterior Superior
9 = Neviaser Portal
10 = Portal of Wilmington
11 = Trans Rotator Cuff Portal
<table>
<thead>
<tr>
<th>Lateral Decubitus</th>
<th>Beach Chair</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Advantages</strong></td>
<td></td>
</tr>
<tr>
<td>1. Traction increases space in joint and subacromial space</td>
<td>1. Upright, anatomical position</td>
</tr>
<tr>
<td>2. Traction accentuates lateral rotors</td>
<td>2. Ease of examination under anesthesia</td>
</tr>
<tr>
<td>3. Operating room table patiens head not in the way of posterior and superior shoulder</td>
<td>3. Arm not hanging in the way of anterior portal</td>
</tr>
<tr>
<td>4. Gastroesophageal reflux not an issue</td>
<td>4. No need for reposition or re-drace to convert to open procedure</td>
</tr>
<tr>
<td>5. Increased risk of hypotenstion, radiculopathy, better cerebral perfusion</td>
<td>5. Can use regional anestheas has a</td>
</tr>
<tr>
<td>6. Mobiltiy of operative arm</td>
<td>6. Mobility of operative arm</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Disadvantages</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Non-anatomic orientation</td>
<td>1. Potential mechanical block to use of scopes in posterior or superior portals</td>
</tr>
<tr>
<td>2. Must reach around arm for anterior portal</td>
<td>2. Increased risk of hypotenstion, brachial plexus, brachial plexus complications</td>
</tr>
<tr>
<td>3. Must reposition and redrape to convert to open procedure</td>
<td>3. Gastroesophageal reflux not an issue</td>
</tr>
<tr>
<td>4. Patients do not tolerate regional anestheas</td>
<td>4. Fluid can fog camera</td>
</tr>
<tr>
<td>5. Traction can cause neurovascular and soft tissue injury</td>
<td>5. Thrombosis and increased risk of air embolism</td>
</tr>
<tr>
<td>6. Increased risk of injury to axillary and musculocutaneous nerves when placing anterolateral portals</td>
<td>6. Expensive equipment using beach chair attachment with or without mechanical arm holder</td>
</tr>
</tbody>
</table>

Thank you Dr. Esch for your passion and teaching us shoulder arthroscopy
5 cadavers  Lateral Decubitus Position

- Portals
  - Posterior
  - Posterior Lateral
  - Anterior
  - Anterior Superior
  - 5 O Clock
  - Portal of Wilmington

All NV Structures > 20mm away from portals
Portals Outside In Unlikely to Produce Neurologic Injury
Cephalic Vein at Risk 5 o’clock portal Outside In Right Angle of Approach to do the Intraarticular Procedures
Always do EUA
OR Setup Lateral Decubitus move anesthesia out of the way
Make sure instruments you need are on your table. Create home court advantage.
switch al and pl
Keys to Success

- Proper Portal Placement
  - Adjust your portals Based on
    - Size of Patient
    - Work to be Done
- Use outside in Needle Localization
- Systematically View all Intraarticular Structures
- First Through Posterior Portal

Outside In Needle Localization. Angle and Portal Location Based on What You Have to Fix
Posterior and Anterior Central Portals are the most Used
Create Outside In Portals Under Direct Visualization With Correct Angle and Spot to Perform the Specific Procedure(s) You Will Perform

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Posterior</th>
<th>Anterior Central</th>
<th>Anterolateral</th>
<th>Posterolateral</th>
<th>5 O’clock</th>
<th>Anteroinferior</th>
</tr>
</thead>
<tbody>
<tr>
<td>Posterior cuff repair</td>
<td>Common</td>
<td>Common</td>
<td>Common</td>
<td>Common</td>
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<tr>
<td>Subacromial decompression</td>
<td>Common</td>
<td>Common</td>
<td>Common</td>
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<tr>
<td>Anterior labrum repair</td>
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<td>Common</td>
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<td>—</td>
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<tr>
<td>IGHL repair</td>
<td>Common</td>
<td>Common</td>
<td>—</td>
<td>—</td>
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<tr>
<td>Multidirectional instability</td>
<td>Common</td>
<td>Common</td>
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<tr>
<td>SLAP repair</td>
<td>Common</td>
<td>Common</td>
<td>Rare</td>
<td>Rare</td>
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<tr>
<td>Loose coracoid osteotomy</td>
<td>Common</td>
<td>Common</td>
<td>Common</td>
<td>Common</td>
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<tr>
<td>Distal clavicle excision</td>
<td>—</td>
<td>Common</td>
<td>Common</td>
<td>Common</td>
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<tr>
<td>SNN release</td>
<td>Common</td>
<td>Common</td>
<td>Common</td>
<td>Common</td>
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<td>—</td>
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<tr>
<td>Latarjet</td>
<td>Common</td>
<td>Common</td>
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<td>—</td>
<td>—</td>
<td>Common</td>
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<tr>
<td>Irrigation and débridement</td>
<td>Common</td>
<td>Common</td>
<td>—</td>
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</tr>
</tbody>
</table>

IGHL = Inferior glenohumeral ligament, SLAP = superior labral anterior-posterior, SNN = suprascapular nerve
Left Shoulder
Subscapularis

Biceps

Rotator Interval
Biceps Tendon Left Shoulder
Left Shoulder
Anterior
Scope Posterior
SLAP Tear
Buford Complex

Right Shoulder
Scope Posterior
Instability and SLAP Repairs:
Start Anterior Inferior
Tie as you go
Do SLAP last

Ring Around The Rosie
NOT Child’s Play!
Make Working Portals Away from Each Other and At Different Angles

Left Shoulder
Anterior
Scope Posterior

Avoid Crowding
Rotator Cuff Portals

- Adjust portal based on pattern/location of tear
- Trans Rotator Cuff Portal
- Portal of Wilmington: 1cm Anterior and Lateral to PL Edge of Acromion (Morgan)
Lateral Deltoid Portal - Scope Posterior

- Think Perpendicular Orientation
- Dead Man’s Angle for Anchor Insertion
70° Advantages

RC Repairs:
- Subscapularis
- Supraspinatus

Anterior Instability:
- Medial Viewing
- Ant 2nd Portal
Synovitis, partial subscap tear, normal biceps tendon

Don’t miss subscapularis tears
May need 70 scope
Can be difficult to see at footprint/insertion
United Kingdom - OPAT Shoulder

- 145 Orthopaedic Residents
- 5 Training Regions
- Inter-rater reliability = 0.60
- Intra-rater reliability = 0.82
- 82% of residents agree OPAT useful tool
- 72% of residents agree should introduce into residency
- OPAT can be used with other assessment tools for training/evaluation of residents
Beware of new drugs, implants and devices which seem to be too good to be true.

- Charles Dickens

“Take nothing on its looks. Take everything on evidence. There is no better rule.”
Know the History of Shoulder Surgery
What Has Worked and Complications
Avoid Metal Implants in Shoulder Arthroscopy

Broken screw s/p Bristow procedure

Lanny Johnson
Shoulder Staple
1986 Arthroscopy Removal Loose Body
Subscapularis Recess

Hiding place hasn’t changed
Scope picture quality has!
What hasn’t changed is anatomy. . . Know the anatomy, open and arthroscopic.
Historical Giants in Shoulder Arthroscopy

Caspari  Andrews  Johnson  Esch
Inside out portal straight shot

Wissinger Rod
You are now a fellow! Enjoy your societies.
Thank You!

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