

# Location of Shoulder Glenoid Labral Tears: A Study of 1763 Consecutive Patients

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# Disclosures



- Dr. Nammour: No Disclosures
- Damaris Mohr: No Disclosures
- Dr. Arner: Receives research and educational support from Arthrex and is a board or committee member for AOSSM, AANA, and ASES
- Dr. Bradley: Receives royalties from Arthrex and receives consulting fees from DJO

# Background



- Labral tears are commonly classified by their location on the glenoid including anterior, posterior and superior with multiple SLAP subtypes.
- Historically anterior labrum tear patterns have been cited to be responsible for 90% of shoulder instability.
  - Cordasco FA, Steinmann S, Flatow EL, Bigliani LU. Arthroscopic treatment of glenoid labral tears. Am J Sports Med 1993.
- Recent studies have reported posterior labrum involvement maybe more common than previously recognized
  - Sheehan et al (Arthroscopy 2020), Alexeev et al (JSES 2021), Kibler et al (JSES 2021), Javed et al (AJSM 2019), Song et al (JSES 2015), Woodmass et al (2016)

# Background

- Alexeev et al (JSES 2021)
  - 280 patients over 7 year period underwent arthroscopic or open labral repair
    - 10 distinct categories of labral tear locations (90 degree quadrants)
    - Involvement of posterior labrum 74%
- Kibler et al (ASMR 2021)
  - 167 arthroscopic labral repairs
    - Isolated posterior injuries highest frequency (26.3%), followed by A+P (24.5%) and SLAP VIII (22.2%)
    - Posterior labrum involved 86.6%, superior 46.1%, anterior 44.3%

# Background

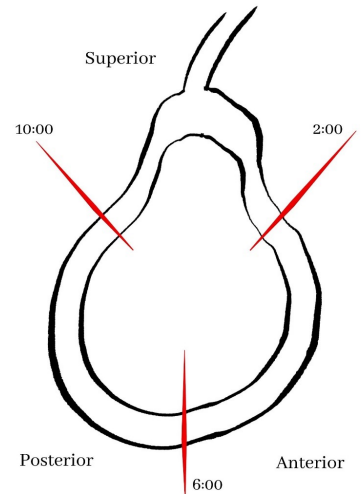
- Purpose: To examine a large consecutive series of patients by the senior author for the location of surgically repaired labral tears.
- Hypothesis: There would be a variety of labral tear patterns with the incidence of posterior labral and combined pathology being the most prevalent

# Methods

- Retrospective review of 1763 consecutive patients
  - Open or arthroscopic labral repair from April 2000 to April 2023
- Single surgeon
- Exclusion criteria included:
  - Isolated shoulder manipulation
  - Glenohumeral joint debridement
  - Labral debridement without repair

# Methods

- Age, sex, hand dominance, sport, level of sport, number of anchors and revision rate examined
- Intraoperative glenoid labral tears observed were categorized:
  - Isolated
    - Superior labrum tears
    - Anterior labrum tears
    - Posterior labrum tears
  - Combined
    - SLAP V → (superior + anterior)
    - SLAP VIII → (superior + posterior)
    - Anterior + Posterior
    - Circumferential (superior + anterior + posterior)



# Results

Level of Athletes	n=1237	
Junior high	21	1.7%
High school	603	48.8%
Collegiate	332	26.9%
Former collegiate	35	2.8%
Professional	36	2.9%
Recreational athlete	210	17.0%

Hand Dominance	Laterality		total
	Right	Left	
Right HD	917	470	1387
Left HD	14	92	106

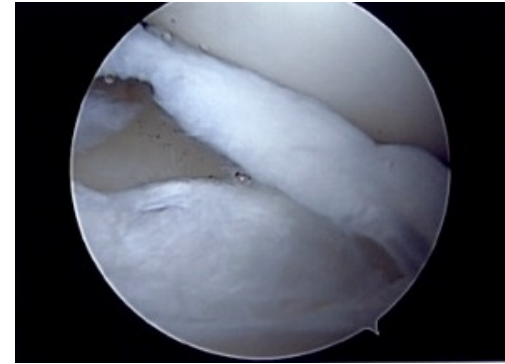


# Results

Glenoid Labrum Tear Location	Overall	Percentage%
	n=1763	
Isolated superior (SLAP II)	391	22.2%
Isolated anterior	163	9.3%
Isolated posterior	347	19.7%
<b>Total isolated</b>	<b>901</b>	<b>51.1%</b>
Anterior/Posterior	201	11.4%
Superior/Anterior (SLAP V)	64	3.6%
<b>Superior/Posterior (SLAP VIII)</b>	<b>524</b>	<b>29.7%</b>
Panlabral (SLAP IX)	72	4.01%
<b>Total Combined</b>	<b>862</b>	<b>48.9%</b>

# Results

- Involvement of Superior Labrum (n=1051)
  - 59.6%
- Involvement of Anterior Labrum (n=501)
  - 28.4%
- **Involvement of Posterior Labrum (n=1145)**
  - **65%**



# Results

	SLAP type II repair	SLAP type V repair	SLAP type VIII repair	Anterior Labral repair	Posterior Labral Repair	Anterior / Posterior	Panlabral
Average # Of anchors	2.9	6.0	4.6	3.8	3.8	5.5	6.9

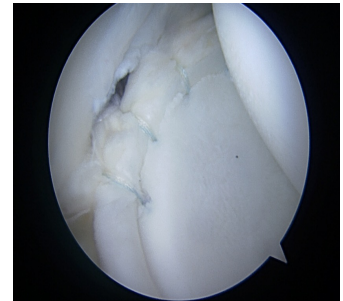
- More anchors used for combined injuries

# Results

Revisions based on labral pattern type	Total	Percentage
Isolated superior (SLAP II)	30/391	7.7%
<b>Isolated anterior</b>	<b>3/163</b>	<b>1.8%</b>
Isolated posterior	14/347	4.0%
Total isolated	47/ 901	5.2%
<b>Combined</b>		
Anterior/Posterior	8/201	4.0%
<b>Superior/Anterior (SLAP V)</b>	<b>7/64</b>	<b>11.0%</b>
Superior/Posterior (SLAP VIII)	47/524	9.0%
Panlabral (SLAP IX)	5/72	7.0%
Total Combined	67/862	7.8%
<b>Total # of revisions</b>	<b>164/1763</b>	<b>9.3%</b>

# Discussion

- Combined injuries were common accounting for 49% of injuries
  - More anchors used for combined injuries
- Large consecutive case series showing variety of tear patterns
- Posterior labrum involvement was most common (65%) → Superior (60%) → Anterior (28%)
- SLAP VIII most common tear pattern
- Total revision rate 9.3%



# Conclusion

- The variety of tear patterns and high rate of involvement of multiple locations on the glenoid labrum highlight the need for complete evaluation of all portions of the labrum during arthroscopy
- Our results are consistent with more recent literature showing labral tear patterns occur in a variety of locations with the posterior labrum being the most commonly involved structure

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