Int. J. Morphol.,
43(4):1253-1259, 2025.

Anatomical Characteristics of the Glenoid Labrum and Glenoid Cavity in the Shoulder Joint of Vietnamese Adult

Características Anatómicas del Labrum Glenoideo y la Cavidad Glenoidea en la Articulación Glenohumeral de Adultos Vietnamitas

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MINH TRI, B. D.; HA NGOC, N.; QUOC VIET, T.; DUC THANH, B. & THANH VAN, N. Anatomical characteristics of the glenoid labrum and glenoid cavity in the shoulder joint of Vietnamese adult. *Int. J. Morphol., 43(4)*:1253-1259, 2025.

SUMMARY. The glenoid labrum is a fibrocartilaginous structure surrounding the rim of the glenoid cavity, playing a crucial role in stabilizing the shoulder joint by deepening the glenoid fossa and increasing the contact area with the humeral head. This study aimed to determine the morphological and anatomical characteristics of the glenoid labrum and glenoid cavity in the shoulder joint of adult Vietnamese cadavers, as well as to assess the differences between sexes and between the right and left sides. The sample consisted of 30 shoulder joints (22 males and 8 females) from 15 adult cadavers, preserved at the Department of Anatomy, Pham Ngoc Thach University of Medicine, Ho Chi Minh City, Vietnam. The parameters, including the width and height of the glenoid labrum and the anteroposterior and superoinferior dimensions of the glenoid cavity, were measured using a caliper with an accuracy of 0.01 mm and processed using SPSS v.26.0 software. The results showed that the average superoinferior dimension of the glenoid cavity was 29.00 ± 3.92 mm, and the average anteroposterior dimension was 16.27 ± 3.08 mm. The most common morphological shape of the glenoid cavity was oval (66.7 %). The average width of the glenoid labrum at the 6 o'clock position was significantly higher in males than in females ($p = 0.002$). However, there was no significant difference in the average height of the glenoid labrum between sexes ($p > 0.05$). The most common attachment site of the long head of the biceps tendon (LHB) was at the 11 o'clock position (56.7 %). The superior glenohumeral ligament was most commonly attached from the 12 o'clock to 1 o'clock position (66.7 %). These findings provide important information to support clinical research and surgical reconstruction of the shoulder joint.

KEY WORDS: Glenoid Labrum; Shoulder Joint; Anatomy.

INTRODUCTION

The shoulder joint is a shallow ball-and-socket joint with the widest range of motion in the human body. The joint capsule, ligaments, tendons, and glenoid labrum maintain its stability. Among these structures, the glenoid labrum is a fibrocartilaginous ring surrounding the glenoid cavity of the scapula, playing a crucial role in deepening the glenoid fossa, increasing the contact surface with the humeral head, and serving as the attachment site for several important ligaments (Barthel etal., 2003).

Glenoid labrum injuries, particularly at the attachment site of the long head of the biceps tendon (LHB), can lead to Superior Labrum Anterior to Posterior (SLAP) lesions. These injuries are commonly observed in overhead athletes, such as baseball pitchers, tennis players, and weightlifters, or individuals who frequently perform repetitive overhead motions. SLAP lesions can result in shoulder instability and significantly impair shoulder function and mobility (Brockmeyer et al., 2016; Stathellis et al., 2018). Research on the glenoid labrum and its associated structures not only enhances the understanding of injury mechanisms but also plays a crucial role in the diagnosis, treatment, and rehabilitation of shoulder joint disorders (Almajed et al., 2022).

In addition to the glenoid labrum, the morphology of the scapular glenoid cavity and the glenohumeral ligament system exhibit interindividual variations, which directly

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Received: 2025-03-11 Accepted: 2025-05-15

influence shoulder joint stability (Almajed et al., 2022). Previous studies have classified the glenoid cavity into various morphological types and established a correlation between these variations and the risk of shoulder instability (Chen et al., 2023). Therefore, investigating the morphological characteristics and anatomical dimensions of the glenoid cavity is of great significance in clinical practice, particularly in shoulder reconstruction surgery (Tankala et al., 2023).

Although numerous studies have explored the morphology and function of the glenoid labrum, glenoid cavity, and glenohumeral ligaments worldwide, detailed anatomical investigations on adult Vietnamese cadaveric specimens remain limited. Establishing specific morphological data on the glenoid labrum, glenoid cavity, and glenohumeral ligament system in the Vietnamese population is crucial for shoulder injury management, particularly in reconstructive surgery and arthroscopic treatment of SLAP lesions. Given this context, we conducted this study to provide accurate scientific data on the anatomy of the shoulder joint, contributing to shoulder reconstruction surgery and treating shoulder injuries in Vietnam.

MATERIAL AND METHOD

Study Subjects. This study was conducted on 15 adult Vietnamese cadavers, which were cold-preserved at the Department of Anatomy, Pham Ngoc Thach University of Medicine, Ho Chi Minh City, from January 2019 to March 2022. A total of 30 shoulder joints (15 right, 15 left) were collected and analyzed.

Inclusion criteria: Specimens with intact shoulder joints, donor age ≥18 years, and no evident damage to the glenoid labrum.

Exclusion criteria: Cadavers presenting structural damage to the shoulder joint upon dissection, shoulder deformities, a history of shoulder surgery, or pathological conditions affecting shoulder joint morphology were excluded.

Research Methodology. This study was conducted using a cross-sectional descriptive method on dissected cadavers. The specimens were positioned in the supine position, and dissectionwas performed following the Tank P.W. method (Tank & Grant, 2012), to expose the shoulder joint and related anatomical structures.

Measured Parameters

Glenoid labrum: Thickness, height, superior-to-inferior distance, and anterior-to-posterior distance.

Glenoid morphology: Shape classification based on Prescher & Klümpen (1997) includes three types: pear-shaped with a deep notch, pear-shaped with a shallow concave curve, and oval-shaped.

The glenohumeral ligaments (GHL) were identified and classified based on their attachment sites, including the superior, middle, and inferior anterior/posterior ligaments, using the 12-hour clock-face system on the glenoid. The glenoid was divided into 12 clock-face segments in a clockwise manner, with the highest point designated as 12 o'clock, the lowest point as 6 o'clock, the most anterior point as 3 o'clock, and the most posterior point as 9 o'clock. The attachment sites of each ligament were determined by direct observation of the anatomical specimens within the predefined segments (Fig. 1).

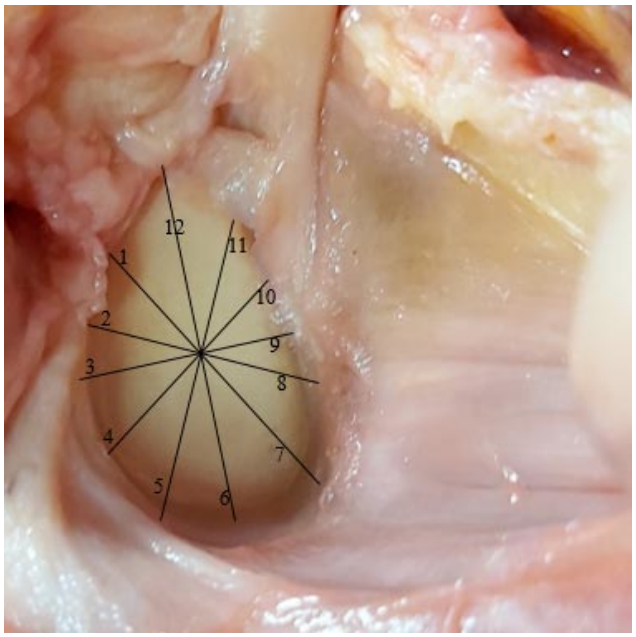

Fig. 1. Standardized anatomical regions of the glenoid and labrum.

The long head of the biceps tendon (LHB): The attachment site was classified according to the system proposed by Vangsness Jr. et al. (1994).

All measurements were performed using a caliper with an accuracy of 0.01 mm and were repeated three times to ensure precision.

Data Analysis Methods. The collected data were processed using SPSS v.26.0 software, including descriptive statistics: mean, standard deviation, minimum, and maximum values. The Student's t-test was applied to assess statistically significant differences between groups (male vs. female, left vs. right). The results were presented in tables and graphs. All p-values less than 0.05 were considered statistically significant.

RESULTS

The study sample consisted of 15 adult cadavers, totaling 30 shoulder joints (15 right, 15 left). Males accounted for a higher proportion than females (73.33 % vs. 26.67 %). The mean age of the sample was 67.46 ± 16.52 years, ranging from 21 to 88 years.

Results from Table I indicate that the mean superior-inferior glenoid labrum distance was 36.77 ± 4.52 mm, which was significantly greater in males (38.46 ± 3.57 mm) than in females (32.13 ± 3.56 mm) ($p < 0.001$). The mean anteroposterior glenoid labrum distance was 21.27 ± 3.48 mm, also higher in males (22.41 ± 2.74 mm) compared to females (18.13 ± 3.52 mm), with a statistically significant difference ($p < 0.05$).

There were no significant differences in the mean width and height of the glenoid labrum between sexes at various positions ($p > 0.05$). The continuity rate of the glenoid labrum was 80.0 %, while the firm attachment rate to the glenoid cavity was 96.7 %.

Table II shows that the mean superior-inferior dimension of the glenoid cavity was 29.00 ± 3.92 mm, with a significantly greater value in males (30.68 ± 2.72 mm) compared to females (24.38 ± 2.88 mm) ($p < 0.001$). The mean anteroposterior dimension of the superior glenoid was 16.27 ± 3.08 mm, which was larger in males (17.27 ± 2.93 mm) than in females (13.50 ± 1.31 mm), with a statistically significant difference ($p < 0.05$). The mean anteroposterior dimension of the inferior glenoid was 20.47 ± 3.19 mm, higher in males (21.68 ± 2.28 mm) than in females (17.13 ± 3.04 mm), with a statistically significant difference ($p < 0.001$). Regarding glenoid morphology, the oval shape was the most common (66.7 %), followed by the pear shape (30.0 %) and the pear shape with a deep notch (3.3 %). No significant differences were observed between the right and left shoulders ($p > 0.05$).

Table I. Anatomical characteristics of the glenoid labrum.

Parameters	Male (n=22)	Female (n=8)	Total (n=30)	p-value
Superior-inferior glenoid labrum distance (mm)	38.46 ± 3.57	32.13 ± 3.56	36.77 ± 4.52	< 0.001
Anteroposterior glenoid labrum distance (mm)	22.41 ± 2.74	18.13 ± 3.52	21.27 ± 3.48	0.002
Mean width of the glenoid labrum (mm)				
2 o'clock	4.88 ± 1.13	4.44 ± 1.14	4.76 ± 1.14	0.188
4 o'clock	5.67 ± 1.33	5.65 ± 1.24	5.67 ± 1.30	0.962
6 o'clock	6.29 ± 0.97	5.21 ± 1.54	6.00 ± 1.28	0.078
8 o'clock	3.88 ± 1.09	3.06 ± 0.67	3.73 ± 1.02	0.092
10 o'clock	2.90 ± 1.02	3.13 ± 1.35	2.96 ± 1.10	0.139
The mean height of the glenoid labrum (mm)				
2 o'clock	2.67 ± 1.03	2.49 ± 0.77	2.62 ± 0.96	0.526
4 o'clock	3.86 ± 1.09	3.06 ± 0.67	3.73 ± 1.02	0.092
6 o'clock	2.90 ± 1.02	3.13 ± 1.35	2.96 ± 1.10	0.139
Continuous labrum (%)	16/22 (72.7 %)	8/8 (100.0 %)	24/30 (80.0 %)	0.155
Firmly attached labrum (%)	21/22 (95.5 %)	8/8 (100.0 %)	29/30 (96.7 %)	1.0

Table II. Morphological characteristics of the glenoid cavity of the shoulder joint.

Parameters	Male (n=22)	Female (n=8)	Total (n=30)	p-value
Superior-inferior glenoid	30.68 ± 2,72	24.38 ± 2.88	29.00 ± 3.92	<0.001
Anteroposterior distance of the	17.27 ± 2.93	13.50 ± 1.31	16.27 ± 3.08	0.002
Anteroposterior distance of the	21.68 ± 2.28	17.13 ± 3.04	20.47 ± 3.19	<0.001
Glenoid Morphology				
Oval shape	14 (63.6%)	6 (75.0%)	20 (66.7%)	
Pear shape	7 (31.8%)	2 (25.0%)	9 (30.0%)	1.0
Pear shape with a deep notch	1 (4.5%)	0 (0.0%)	1 (3.3%)	

Our study findings indicate that the most common attachment site of the long head of the biceps brachii on the glenoid labrum is at the 11 o'clock position, accounting for 56.7 % (17/30 shoulders). Table III presents the classification of the long head of the biceps brachii attachment according to Vangsness Jr. al. (1994). Type 1 was the most prevalent (63.3 %), followed by Type 3 (20.0 %), Type 2 (13.3 %), and Type 4 (3.3 %). No significant differences were observed between the right and left shoulders ($p > 0.05$).

The most common attachment site of the glenohumeral ligament was between the 12 o'clock and 1 o'clock positions for both the superior glenohumeral ligament (66.7 %) and the middle glenohumeral ligament (66.7 %). The anteroinferior glenohumeral ligament was predominantly attached between the 4 o'clock and 5 o'clock positions (83.3 %), while the posteroinferior glenohumeral ligament was most frequently located between the 7 o'clock and 8 o'clock positions (83.3 %). No significant differences were observed between the right and left shoulders, with p-values >0.05 (Table IV).

Table III. Characteristics related to the attachment of the long head of the biceps brachii muscle.

Types	Left shoulder (n, %)	Right shoulder (n, %)	Total (n, %)	p-value
Type 1 (Entirely attached to the posterior glenoid)	10 (33.3)	9 (30.0)	19 (63.3)	0.750
Type 2 (Primarily attached to the posterior glenoid with a partial anterior	1 (3.3)	3 (10.0)	4 (13.3)	
Type 3 (Evenly attached to both the anterior and posterior glenoid)	3 (10.0)	3 (10.0)	6 (20.0)	
Type 4 (Primarily attached to the anterior glenoid with a partial posterior	1 (3.3)	0 (0.0)	1 (3.3)	

Table IV. Characteristics of the glenohumeral ligament.

Ligament Types	Common attachment sites	Left shoulder (n, %)	Right shoulder (n, %)	Total (n, %)	p-value
Superior glenohumeral ligament	12 o'clock – 1 o'clock	10 (33.3)	10 (33.3)	20 (66.7)	1.0
Middle glenohumeral ligament	12 o'clock – 2 o'clock	10 (33.3)	10 (33.3)	20 (66.7)	1.0
Anteroinferior glenohumeral ligament	4 o'clock – 5 o'clock	13 (43.3)	12 (40.0)	25 (83.3)	1.0
Posteroinferior glenohumeral ligament	7 o'clock – 8 o'clock	13 (43.3)	12 (40.0)	25 (83.3)	1.0

DISCUSSION

Characteristics of the glenoid labrum

- Superior-inferior dimension of the glenoid labrum

In our study, the superior-inferior dimension of the glenoid labrum in the glenohumeral joint ranged from 27 mm to 46 mm, with a mean value of 36.76 ± 4.51 mm. There was no statistically significant difference between males and females. Several studies have investigated the superior-inferior dimension of the glenoid labrum. For example, Hata et al. (1992), conducted a dissection study on 31 cadaveric Japanese shoulders and reported a mean superior-inferior labral dimension of 46.2 ± 5.8 mm, with a range from 36.5 mm to 59.0 mm, and no significant difference between genders. Additionally, the labrum was found to increase the glenoid length by 38 %. The superior-inferior dimension of the glenoid labrum represents the largest contact area between the humeral head and the labrum-glenoid complex. Variations in this dimension can lead to anatomical and functional alterations of both the labrum and the glenoid. In surgical procedures, it is crucial to restore not only the shape of the glenoid labrum but also key morphometric parameters, such as the superior-inferior dimension, to maintain joint stability and function.

- Anterior-posterior dimension of the glenoid labrum

In our study, the inferior anterior-posterior dimension of the glenoid labrum ranged from 18.0 mm to 32.0 mm, with a mean value of 25.63 ± 3.60 mm, showing no statistically significant difference between males and females. The superior anterior-posterior dimension of the labrum ranged from 14.0 mm to 27.0 mm, with an average measurement of 21.26 ± 3.48 mm. Hata et al. (1992), conducted a dissection study on 31 cadaveric Japanese shoulders, reporting that the inferior anterior-posterior dimension of the glenoid labrum ranged from 28.2 mm to 48.0 mm, with a mean value of 35.2 ± 4.1 mm. The anterior-posterior

dimension, also referred to as the transverse diameter, represents the horizontal contact surface between the glenoid labrum and the humeral head.

- *Width and height of the glenoid labrum*

Our findings on glenoid labrum width align with those of previous studies. Koga et al. (2020) investigated 62 cryopreserved cadaveric shoulders and found that the mean width at the 7 o'clock position was 6.3 ± 1.0 mm, ranging from 4.6 mm to 9.4 mm. Similarly, Yoshida et al. (2015) examined 26 cryopreserved shoulder joints (11 males, 15 females) and found that the mean labral width at the 2, 4, 6, 8, 10, and 12 o'clock positions was 4.6 mm. Despite differences in study populations and sample sizes, these results align closely with our findings. A general pattern can be observed: The posterior labrum tends to be wider than the anterior labrum. The inferior labrum is generally wider than the superior labrum.

In our study, the mean labral height was 3.26 ± 1.85 mm. Specifically, at the 8 o'clock position, labral height ranged from 0.7 mm to 10.7 mm, with a mean value of 3.26± 1.85 mm. At the 10 o'clock position, labral height ranged from 1.3 mm to 5.1 mm, with a mean of 3.02 ± 1.09 mm. Hata et al. (1992) reported that the mean anterior labral height was 4.3 ± 1.7 mm, ranging from 2.0 mm to 9.2 mm.

- *Labral Integrity*

In our study, labral discontinuity was observed in 6 out of 30 shoulders (20 %), while 1 out of 30 shoulders (3.3 %) exhibited a gap between the labrum and the glenoid. A study by Bain et al. (2013), on 20 cadaveric shoulders reported that 5 shoulders (26 %) had a segmental labral discontinuity along the glenoid rim, while 17 shoulders (89 %) exhibited a gap between the labrum and the glenoid. Although the rate of labral discontinuity in our study is relatively comparable to that reported by Bain et al. (2013), there is a notable difference in the incidence of a gap between the labrum and the glenoid. This discrepancy can be attributed to variations in the definition of the labral-glenoid gap. In our study, a gap was defined as an actual space between the labrum and the glenoid, excluding cases where the space was filled with other connective tissues.

Characteristics of the glenoid

- Superior-inferior dimension of the glenoid

In this study, we aimed to determine the superior-inferior dimension (maximum height) of the glenoid in the scapulae of adult Vietnamese individuals using cadaveric specimens preserved through cold storage. Across 30 shoulders, the mean superior-inferior dimension of the glenoid, considering both sexes, was 29.000 ± 3.921 mm.

Several studies have measured the dimensions of the glenoid using similar research models across different populations. These measurements have been conductedthrough various methods, including direct measurement of dry scapulae, direct measurement of fresh or formalin-fixed cadaveric specimens, computed tomography (CT) imaging of dry scapulae, or CT imaging of living patients. For instance, McPherson et al. (1997), conducted a study on 101 scapular specimens from American individuals without scapular pathology, reporting a mean glenoid height of 33.9 ± 3.9 mm. Similarly, Mizuno et al. (2017), examined 100 Japanese and 100 French individuals (50 males and 50 females in each group, matched for age) using 3D CT imaging. Their findings showed a mean superior-inferior glenoid dimension of 33.3 ± 2.6 mm (range: 28.5-38.7 mm) in Japanese individuals and 35.4 ± 2.7 mm (range: 29.4-42.6 mm) in French individuals.

- *Shape of the glenoid*

In this study, based on the classification by Prescher & Klümpen (1997), we identified all three morphological types of the glenoid. Among them, Type 3 (oval shape) was the most common, found in 20 out of 30 shoulders (66.7 %). Type 2 was observed in 9 out of 30 shoulders (30 %), while Type 1 was the least frequent, identified in only 1 shoulder (3.3 %). The difference between the right and left shoulders was not statistically significant ($p > 0.05$).

A study by Anetzberger & Putz (1996), conducted on 343 scapulae, reported that Type 1 was present in 59 % of glenoids, Type 2 in 29 %, and Type 3 in 12 %. Type 2 was more frequently observed in females, whereas the other two types were more common in males. Additionally, glenoid morphology was found to be independent of laterality. Understanding the shape and dimensions of the glenoid is crucial for designing and implanting components in shoulder joint reconstruction. By comparing our findings with previous studies, we observed that the distribution of glenoid types in our study is consistent with findings from other authors.

Characteristics of the Long Head of the Biceps Brachii (LHB)

Understanding the relative position of the LHB attachment on the labrum and glenoid is essential for identifying the location of SLAP (Superior Labrum Anterior

to Posterior) lesions. These injuries may not be limited to the superior glenoid but can extend from the 10 o'clock to the 1 o'clock position. According to the classification by Vangsness Jr. et al. (1994), the attachment of the LHB to the labrum and glenoid is categorized into four types. Numerous studies have utilized this classification system to categorize the LHB attachment.

Table V demonstrates considerable variability in findings across different studies. However, overall, a general conclusion can be drawn: a predominant proportion of LHB attachment sites correspond to Type I and Type II, indicating that the attachment is predominantly located at the posterosuperior region of the glenoid labrum. Conversely, type IV exhibits the lowest prevalence across all investigations. Furthermore, both prior studies and our current research consistently reveal that the association between the LHB attachment site and variables such as sex and laterality (right vs. left) lacks statistical significance.

Attachment of the Glenohumeral Ligament

In this study, the superior glenohumeral ligament (GHL) was primarily attached to the glenoid labrum from the 12 o'clock to the 2 o'clock position, with the highest concentration observed between 12 o'clock and 1 o'clock (66.7 %). This finding is consistent with the study by Dekker et al. (2020), which reported the primary attachment site ranging from 12:15 to 1:10. The SGHL plays a crucial role in shoulder joint stabilization, supporting biceps brachii function and maintaining the stability of the long head of the biceps tendon within the bicipital groove. Although the ligament has been extensively documented in anatomical studies, quantitative data on its morphological and structural characteristics remain limited.

The major limitations of our study are the small sample size and the limited representation of different age groups. Additionally, the study was conducted on cadaveric specimens, which may not fully reflect in vivo anatomical variations. Due to the clinical significance of understanding the morphology and dimensions of the glenoid labrum and shoulder joint, future research should aim to increase the sample size, incorporate a broader age range, and utilize imaging techniques to enhance the accuracy of anatomical assessments.

Table V. Comparison of the long head of the biceps brachii muscle (LHB) attachment based on the Vangsness C.T. classification.

Research	Type I	Type II	Type III	Type IV
Vangsness *et al*. (1994) (n=100)	22 (22 %)	33 (33 %)	37 (37 %)	8 (8 %)
Tuoheti *et al*. (2005) (n=101)	28 (27.7 %)	56 (55.4 %)	17 (16.8	0 (0 %)
Alashkham *et al*. (2018) (n= 130)	62 (47.7 %)	41 (31.5 %)	21 (16.2	6 (4.6 %)
Bain *et al*. (2013) (n=38)	21 %	42 %	32 %	5 %
Kim *et al*. *(*2003) (n=139)	74 %	21 %	0,7 %	4 %
In our study (n=30)	19 (63.3%)	4 (13.3%)	6 (20 %)	1 (3.3 %)

CONCLUSION

From this study, it can be concluded that the most prevalent morphology of the glenoid labrum is the oval shape (66.7 %), followed by the pear-shaped variant (30.0 %). Among males, the oval shape is the most prevalent, whereas among females, the pear shape is more commonly observed. The mean superior-inferior dimension of the glenoid was 29.00 ± 3.92 mm, while the mean anteroposterior dimension was 16.27 ± 3.08 mm. Our findings demonstrate significant sex-related differences in the dimensions of the glenoid labrum and glenoid cavity; however, no statistically significant differences were detected between the right and left shoulders. These data provide valuable insights into the morphological and anatomical dimensions of the glenoid labrum and glenoid cavity, contributing to clinical and surgical research related to the shoulder joint.

ACKNOWLEDGMENTS

The authors sincerely thank those who donated their bodies to science so that anatomical research could be performed. Results from such research can potentially increase mankind's overall knowledge which can then improve patient care. Therefore, these donors and their families deserve our highest gratitude.

MINH TRI, B. D.; HA NGOC, N.; QUOC VIET, T.; DUC THANH, B. & THANH VAN, N. Características anatómicas del labrum glenoideo y la cavidad glenoidea en la articulación glenohumeral de adultos vietnamitas. *Int. J. Morphol., 43(4)*:1253-1259, 2025.

RESUMEN: El labrum glenoideo es una estructura fibrocartilaginosa que rodea el margen de la cavidad glenoidea y desempeña un papel crucial en la estabilización de la articulación glenohumeral al profundizar la fosa glenoidea y aumentar el área de

contacto con la cabeza humeral. Este estudio tuvo como objetivo determinar las características morfológicas y anatómicas del labrum glenoideo y la cavidad glenoidea en la articulación glenohumeral de cadáveres vietnamitas adultos, así como evaluar las diferencias entre sexos y entre los lados derecho e izquierdo. La muestra consistió en 30 articulaciones de hombro (22 hombres y 8 mujeres) de 15 cadáveres de individuos adultos, preservados en el Departamento de Anatomía, Universidad de Medicina Pham Ngoc Thach, Ciudad Hochiminh, Vietnam. Los parámetros, incluyendo el ancho y la altura del labrum glenoideo y las dimensiones anteroposterior y superoinferior de la cavidad glenoidea, se midieron usando un calibrador con una precisión de 0,01 mm y se procesaron usando el software SPSS v.26.0. Los resultados mostraron que la dimensión superoinferior promedio de la cavidad glenoidea era de 29,00 ± 3,92 mm, y la dimensión anteroposterior promedio de 16,27 ± 3,08 mm. La forma morfológica más común de la cavidad glenoidea fue ovalada (66,7 %). El ancho promedio del labrum glenoideo en la posición de las 6 en punto fue significativamente mayor en hombres que en mujeres ($p = 0,002$). Sin embargo, no se observó una diferencia significativa en la altura promedio del labrum glenoideo entre sexos ($p > 0,05$). El sitio de inserción más común del tendón de la cabeza larga del músculo bíceps braquial (LHB) fue en la posición de las 11 en punto (56,7 %). El ligamento glenohumeral superior se insertó con mayor frecuencia entre las 12 en punto y la 1 en punto (66,7 %). Estos hallazgos proporcionan información importante para respaldar la investigación clínica y la reconstrucción quirúrgica de la articulación glenohumeral.

PALABRAS CLAVE: Labrum glenoideo; Articulación del hombro; Anatomía.

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