ORIGINAL RESEARCH PAPER

Volume-7 | Issue-6 | June-2018 | PRINT ISSN No 2277 - 8179

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

DYSMORPHIC GLENOID CAVITY ALONG WITH SHORT CORACOID PROCESS: A RARE ENTITY

Anatomy

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ABSTRACT

The scapula is one of the bones of shoulder girdle. It is a flat bone, triangular in shape and is situated in postero-lateral aspect of chest wall. On its lateral aspect, a pear shaped glenoid cavity is present which articulate with head of humerus. During research work on morphometry of acromion process and coracoid process, abnormal dry female scapula of right side was observed in the department of Anatomy. A stout coracoid process with large facet on its superior surface and abnormal glenoid cavity was observed unilaterally. The abnormal scapula is not common but when present, may create serious hindrance in day to day activity which is clinically important for orthopedic surgeons.

KEYWORDS

Scapula, Coracoid process, Glenoid cavity

INTRODUCTION

The scapula is a flat, triangular bone which forms the posterior aspect of the shoulder girdle, overlying the posterior chest wall opposite the 2nd to 7th rib.[1] Its lateral angle becomes truncated and broadened that bears the glenoid cavity which articulates with the head of humerus in the shoulder joint.

Anatomically, the glenoid cavity is considered to be head of scapula.[2] The long axis of glenoid cavity i.e. its vertical diameter is the longest and it is broader below than the above. The shoulder joint is one among the most commonly dislocated joints in the body. Various shapes of glenoid cavity is described earlier as; pear, round and oval or inverted comma.[3] Anatomical basis and variations in shape of glenoid cavity is fundamentally important in clinical practice. The fractures of glenoid with dislocations are very common in the trauma. Knowledge about shapes of glenoid cavity is essential in designing and fitting of glenoid components during total shoulder arthroplasty.[4]

The coracoid process is a part of the scapula and plays a important role in shoulder function. Congenital anomalies of coracoid process of the scapula are rare. Many of them are clinically not significant and do not cause serious disability. They are usually regarded as incidental finding. Several anomalies of coracoid process has been described in literature. As many as one percent of the population has coracoclavicular joint or bar which is abnormal connection between the coracoid process and clavicle. Other reports about anomalies of coracoid process include coracoid band, coracosternal vestigial bone, the costovertebral bone, and the double acromion and coracoid process. We report a case of stout coracoid process with abnormal glenoid cavity.

CASE REPORT

While during research work on morphometry of acromion process and coracoid process in 50 pairs of human scapula at Department of Anatomy, Pt. B.D. Sharma PGIMS, Rohtak, a female scapula of right side was observed with stout coracoid process and abnormal glenoid cavity. The morphometric parameters of Glenoid cavity, Coracoid process and Acromion process were measured using Digital vernier calipers accurate up to 0.01 mm.

1) Glenoid cavity:- The glenoid cavity was slightly enlarged with a slender crest in between. Vertical and antero-posterior diameter of glenoid cavity were observed as 44.50 mm and 27.26 mm respectively. The length and thickness of crest were observed as 25.46 mm and 3.08 mm respectively.

2) Coracoid process:- The length of Coracoid process was found to be 23.60 mm. The other parameters like width, height and thickness of coracoid process were 14.58 mm, 19.40 mm, and 9.80 mm respectively. The anatomical points chosen for taking these parameters were same as those of Verma et al.[5]

3) Acromion process:- The length, width and anterior thickness of Acromion process were found to be 44.63 mm, 23.89 mm and 6.89 mm respectively. The anatomical points chosen for taking these parameters were same as those of Singroha et al.[6]

The scapula of left side was found to be normal.

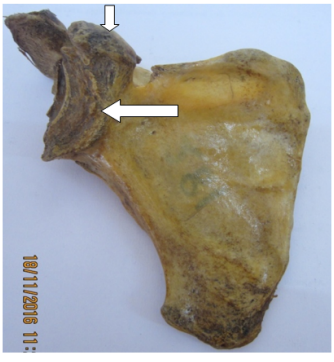

Figure:1- Anterior view of Right Scapula showing coracoid process and glenoid cavity

Figure:2- Lateral view of scapula (Large arrow shows Glenoid Cavity, Small Arrow shows Slender crest within glenoid cavity)

Figure:3- Arrow shows coracoid process of Right Scapula

DISCUSSION:

1) Glenoid cavity:- In the present study, vertical and antero-posterior diameter of glenoid cavity were observed as 44.50 mm and 27.26 mm respectively. The vertical diameter was found to be higher as compared to the study done by Iannotti et al[7] (1992) i.e. 39±3.5 mm, whereas the antero-posterior diameter of the glenoid cavity was almost similar to the studies done by Churchill et al[8] (2001) i.e. 27±1.6 mm.

2) Coracoid process:- The length of Coracoid process was found to be 23.60 mm in the present study, which was found to be very less in comparison to study done by Verma et al[5] (2017) i.e. 35.54 mm. In the present study, the other parameters like width, height and thickness of coracoid process were 14.58 mm, 19.40 mm, and 9.80 mm respectively. These parameters almost matched with the findings of Verma et al[5] (2017) i.e.14.5mm, 20.1 mm and 7.95 mm respectively.

3) Acromion process:- In the present study, the length, width and anterior thickness of Acromion process were found to be 44.63 mm, 23.89 mm and 6.89 mm respectively. These findings were found to be same as those of Singroha et al[6] (2017) i.e. 45.05 mm, 25.79 mm and 7.12 mm respectively.

The knowledge about the different shapes and dimensions of the glenoid are very important during designing and fitting of glenoid component for total shoulder arthroplasty and Bankart repair. It is also helpful during evaluation of different pathological conditions like rotator cuff disease, osteochondral defects and Bankart lesion.

References

1. Gray, H. (2000). Anatomy of the human body. Philadelphia: Lea & Feblger, 1918; Bartleby.com website. http://www.bartleby.com/107/50.html.
2. Pahuja, K., Singh, J. (2013). Morphology of coracoid process and glenoid cavity in adult human scapulae. Int J Analytical Pharmaceutical Biomed Sci, 2(2),19-22.
3. Mamtha, T., Pai, S.R., Murlimanju, B.V., Kalthur, S.G., Pai, M.M., Kumar, B. (2011). Morphometry of glenoid cavity. Online J Health Allied Sci, 10(3),7.
4. Shortt, Conor, P., Morrison, William, B., Shah, Suken, H.,.... John, A. (2009). Association of glenoid morphology and anterosuperior labial variation. J Computer Assisted Tomography, 33(4), 584-6.
5. Verma, U., Singroha, R., Malik, P., Rathee, S.K. (2017). A study on morphometry of coracoid process of scapula in north Indian population. Int J Res Med Sci, 5, 4970-4.
6. Singroha, R., Verma, U., Malik, P., Rathee, S.K. (2017). Morphometric study of acromion process in scapula of north Indian population. Int J Res Med Sci, 5, 4965-9.
7. Iannnotti, J.P., Gabriel, J.P., Schneck, S.L., Evans, B.G., Misra, S. (1992). The normal glenohumeral relationships: An anatomical study of one hundred and forty shoulders. J Bone Joint Surg Am,74, 491-500.
8. Churchill, R.S., Brems, J.J., Kotschi, H. (2001). Glenoid size, inclination and version: An anatomic study. J Shoulder Elbow Surg, 10, 327-32.