Journal of Biology, Agriculture and Healthcare
ISSN 2224-3208 (Paper) ISSN 2225-093X (Online)
Vol.4, No.7, 2014

Rudimentary Hypoplastic Suprascapular Notch with Posterior Groove Extension in a Nigerian Scapula

Oladayo Sunday Oyedun
Department of Anatomy, Faculty of Medical Sciences, University Of Ibadan, Nigeria
E-mail of the corresponding author: oyedundayo@yahoo.com

Abstract
Variations in size and shapes of Suprascapular Notch (SSN) are documented etiological factors associated with Suprascapular Nerve Entrapment Syndrome (SNES).
During routine bone collection for teaching purposes, a rudimentary hypoplastic "V" shaped SSN was found in a Nigerian scapula. The SSN extended posteriorly into a shallow groove which continued posteriorly as a curved ridge ending on a large nutrient foramen.
Knowledge of anatomical Variation of SSN is important for accurate localization of site of suprascapular nerve (SN) entrapment.
Keywords: rudimentary, hypoplastic, posterior groove, suprascapular notch.

Introduction

The documented variations of Suprascapular Notch (SSN) include complete absence, variations in shape and size, and bony bridging by an ossified Superior Transverse Scapular Ligament (STSL) (Ticker et al., 1998; Igbal et al., 2010; Sinkeet et al., 2010; Osuagwu et al., 2005). Absence or reduction in notch size and height are potential causes of Suprascapular Nerve Entrapment Syndrome (Ofusori et al., 2008, Rengachary et al., 1979).
A hypoplastic SSN with posterior groove extension has not been previously described amongst Nigerians. In this case report, I am describing a rare case of hypoplastic SSN with posterior groove extension in an adult Nigerian scapula.

Case report

During routine bone collection for museum from the bone library of Department of Anatomy, University of Ibadan, Nigeria, I came across a rudimentary hypoplastic "V" shaped SSN in an adult scapula of unknown sex. The transverse length (TL) of the notch, measured as an imaginary line joining the 2 superior corners of the notch, was 5.57mm. The maximum depth (MD) of the notch, measured from the midpoint of TL to the floor of SSN, was 3.32mm. The notch had a posterior extension leading to a short shallow groove measuring 5.93mm in length. The groove continued inferiorly as a curved ridge (length 15.11mm) which led to a big nutrient foramen measuring 3.87 X 2.08mm.The size of the whole scapula was grossly normal.

Discussion

Rengachary et al., 1979, in a study of 211 scapulae, classified SSN into 6 types based on shape. He reported type IV scapulae with small "V" shaped notches which had shallow posterior groove extension in 3% of the studied scapulae. In a similar study, Sinkeet et al., 2010, reported a type IV scapula in 7 out of 138 (5%) studied scapulae in Kenyan population.
The present case, a Rengachary type IV notch in a Nigerian, had a ridge extending downward from the inferior end of the groove to the nutrient foramen.
A rudimentary "V" shaped SSN with a shallow posterior groove extension may be associated with double risk of suprascapular nerve entrapment syndrome (SNES) with suprascapular nerve (SN) predisposed to entrapment at 2 sites, notch and foramen.
The hypoplastic "V" shaped notch sometimes presents with a narrow inferior TL, reduced MD and reduced notch area which theoretically predisposes individuals to SNES (Dukenlgrum et al., 2003, Cummins et al., 2000, Alon et al., 1998). This risk may be increased in the presence of an ossified STSL (Alon et al., 1998).
It can be hypothesized that the shallow nature of the groove extension which has a reduced depth also predisposes the SN to compression at this site.
The shapes and the sizes of SSN have been shown to be influenced by the ossification of coraoid process (Odita et al., 1983).
The hypoplasia of SSN was not due to generalized scapula hypoplasia as supported by normal size of the scapula.
The termination of the curved ridge on the nutrient foramen may suggest that the markings are made by the nutrient artery.

Conclusion

The present case report reveals the presence of hypoplastic SSN with shallow groove extension in Nigerian

population**.** Further studies will however be necessary to determine the frequency of Rangarchary type IV scapula in Nigerian adults.
Knowledge of this anatomical variation will enhance the accuracy of localization of SN compression site and improve outcome of decompression.

References

Ticker, J.B., Djurasovic, M., Strauch, R.J., April, E.W., Pollock, R.G. & Flatow, E.L. (1998) The incidence of ganglion cysts and variations in anatomy along the course of the suprascapular nerve. J. Shoulder Elbow Surg. 7(5):472-8.
Iqbal, K., Iqbal, R. & Khan, S.G. (2010) Anatomical variations in shape of suprascapular notch of scapula. J. Morphol. Sci. 27:1-2
Sinkeet, S.R., Awori, K.O, Odula, P.O., Ogeng'o, J.A. & Mwachaka, P.M. (2010) The suprascapular notch: its morphology and distance from the glenoid cavity in a Kenyan population. Folia Morphol 69: 241-245.
Osuagwu, F. C., Imosemi, I. O. & Shokunbi, M. T. (2005) Complete ossification of the superior transverse scapular ligament in a Nigerian male adult. Int. J. Morphol., 23(2):121-122.
Ofusori, D.A., Ude, R.A., Okwuonu, C.U. & Adesanya, O.A. (2008) Complete absence of the suprascapular notch in a Nigerian scapula: a possible cause of suprascapular nerve entrapment. Int J Shoulder Surg 2:85-6.
Rengachary, S.S., Burr, D., Lucas, S.. Hassanein K.M., Mohn M.P., & Matzke, H. (1979) Suprascapular nerve entrapment neuropathy: A clinical, anatomical and comparative study. Part 2: Clinical study. Neurosur 5:447-451.
Cummins, C.A., Messer, T.M & Nuber, G.W. (2000) Suprascapular nerve entrapment. J Bone Joint Surg Am 82: 415-24.
Dunkelgrun, N., Lesaka, K., Park, S.S., Kummer, F.J. & Zuckerman, J.D. (2003) Interobserver reliability and intraobserver in suprascapular notch typing. Bull Hosp Joint dis 61:118 -122.
Alon, M., Weiss, S., Fischel, B. & Dekel, S. (1998) Bilateral suprascapular nerve entrapment syndrome due to an anomalous transverse scapular ligament. Clinical Orthopaedics 234: 31-3.
Odita, J.C., Ugbodaga, C.I., Omene, J.A. & Okolo, A.A. (1983) Humeral head and coracoid ossification in Nigerian newborn infants. Pediatric Radiol, 13: 276–278.

FIGURES AND LEGENDS

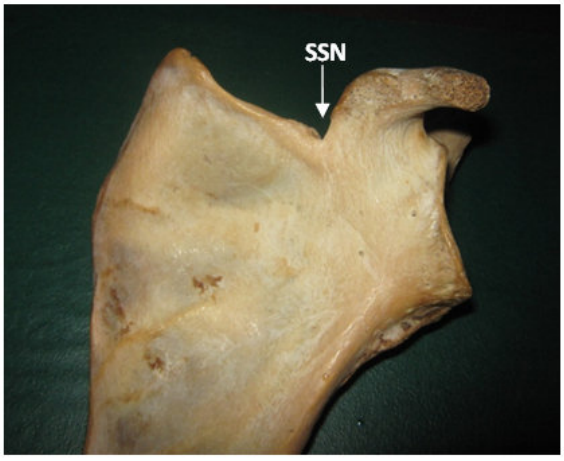

Figure 1: anterior view of scapula

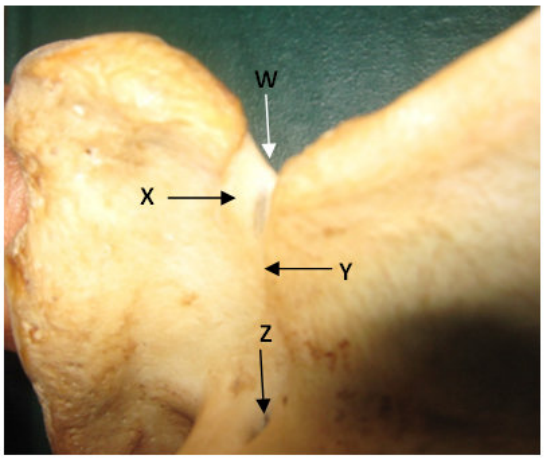

Figure 2: Posterosuperior view of scapula,

W-scapular notch, X- groove, Y-ridge, Z-nutrient foramen

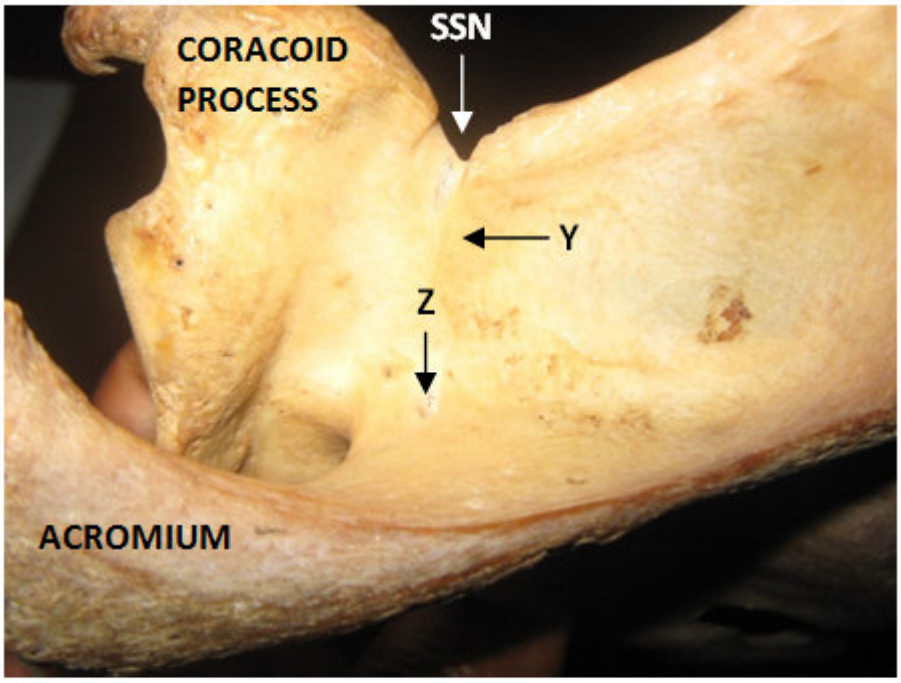

Figure 3: posterior view of scapula. Y-ridge, Z-nutrient foramen