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A Study of the Supracondylar Process of Humerus

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Abstract: *Supracondylar spur or process is a hook-shaped bony projection from the anteromedial surface of the lower part of the humerus. Its length varies from 2 to 20mm. The ligament of Struthers connects the process to the medial epicondyle. The incidence of supracondylar process ranges from 0.1% to 2.7%. The median nerve and or brachial artery passing under the process or ligament of Struthers may be compressed by the them. The study was taken up to find the incidence of supracondylar process in the dry humerus bones. The study was conducted in the Department of Anatomy, Regional Institute of Medical Sciences, Imphal on 70 dried humerus bones. The humeri were inspected for presence of supracondylar processes and size and location were measured. supracondylar process was found in 1 (1.4%) left humerus. It was present on the anteromedial aspect about 5 cm above the tip of the medial epicondyle and had a length of 1 cm. The process may be detected radiographically. Excision of the process and the Struthers' ligament is the treatment in symptomatic patients.*
Key Words: *Supracondylar process, ligament of Struthers, humerus, supracondylar syndrome.*

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I. Introduction

Supracondylar spur or process is a hook-shaped bony projection from the anteromedial surface of the lower part of the humerus about 5cm above the medial epicondyle with a length which varies from 2 to 20mm.[1] The incidence of supracondylar process is very low ranging from 0.1% to 2.7%.[2] The ligament of Struthers connects the tip of the process to the medial epicondyle. The median nerve alone or both the median nerve and brachial artery pass under the process or ligament of Struthers which may compress them producing vascluar and neuronal symptoms.[3,4] This is known as supracondylar syndrome. When only the median nerve is compressed the brachial artery runs lateral to the Ligament of Struthers.[4] The ligament may become ossified forming thereby a supracondylar foramen which is a normal feature in reptiles, marsupials and some mammals.[5] The study was taken up to examine the incidence of Supracondylar process in the dry humerus bones.

II. Materials and Methods

The study was conducted in the Department of Anatomy, Regional Institute of Medical Sciences, Imphal on 70 dried humerus bones. The humeri were inspected for presence of supracondylar process and size and location were measured using a Vernier caliper.

III. Results

Of the 70 humeri studied, supracondylar process (Fig. 1) was found in 1 (1.4%) left humerus. It was present on the anteromedial aspect about 5 cm above the tip of the medial epicondyle. Its length was 1 cm in length and about 5 mm broad at its base. It curved forwards, downwards and medially. It presented a groove on its posterior surface.

Figure1. Supracondylar process of the left humerus

IV. Discussion

Supracondylar process is usually asymptomatic. When there is compression of the median nerve, there may be progressive weakness, pain, and numbness in the forearm and hand.[6] Clinically the supracondylar process may or may not be palpable depending on the size. Fracture of the process may injure the neurovascular structures especially the median nerve in a previously asymptomatic patient.[7] The process may be easily detected in the living by x-ray of the elbow/lower arm especially with an oblique projection or MRI.[4,7,8] The pronator teres muscle may have a high humeral origin from the supracondylar process in addition to its origin from the medial epicondyle.[9] Though the ligament of Struthers is regarded as the real cause of the compression, both the ligament and supracondylar process are excised during the operative treatment.[4]

V. Conclusion

The supracondylar process is a rare variation which has aroused interest among the anatomists, anthropologists and orthopedicians alike. It could be wrongly suspected to be a pathological condition such as osteochondroma or exostosis.[7]

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