Supracondylar Process of Humerus – Report of Two Cases

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INTRODUCTION

Supracondylar process of the humerus is a congenital bone projection seen on the distal humerus on the anteromedial surface. A fibrous band called ligament of Struthers’ connects the supracondylar process of humerus with medial epicondyle. It is mainly asymptomatic but rarely can present as supracondylar process syndrome due to neurovascular compression. Although isolated median nerve injuries are most common they can also present with fractures and vascular complications. The ulnar nerve is rarely involved. The median nerve can be trapped at several sites proximal to the carpal tunnel. Potential sites where the median nerve can be trapped are bicipital aponeurosis, two heads of pronator teres, flexor digitorum superficialis, aponeurotic arch and Gantzer muscle.[¹]

Supracondylar process of the humerus is a hook-like bony process seen about 5 cm proximal to the medial epicondyle and has a pointed apex. It is curved downwards and forwards and is commonly seen in climbing mammals. Vinilla et al. published a comparison of measurements of the supracondylar process of the humerus in different studies. The length of the process varied from 0.3 cm to 1.6 cm, breadth 1 cm to 1.5 cm and distance from the medial epicondyle varied from 4.4 cm to 6.5 cm. They concluded that the supracondylar process had to be differentiated from osteochondroma and myositis ossificans.[²]

PRESENTATION OF CASE

Case 1
A 13-year-old girl presented with pain in the medial side of the elbow in a hospital. The distribution of pain was vague and mild and had a gradual onset. The patient had tingling sensations in the area supplied by the median nerve. An X-ray of the elbow showed a beak-like process arising from the anteromedial surface from the lower end of the humerus about 4.4 cm above the medial epicondyle. It was 1.3 cm long and 1 cm broad at the base. The patient refused excision of the supracondylar process.
Case 2
A 27-year-old woman presented with pain on the medial side of her right forearm. The pain was mild and had a gradual onset. Movements of hands were normal. The X-ray of the elbow showed a small bony projection on the anteromedial surface of the distal humerus. It was 5.3 cm proximal to the medial epicondy. The projection was 0.7 cm long and 1.5 cm broad at its base. Apex was curved and pointed. Pt. was advised conservative treatment.

DISCUSSION
Fragiadakis and Lamb reported an unusual case of ulnar nerve compression due to a supracondylar spur arising from the anteromedial aspect of the medial supracondylar ridge. The patient was a thirteen-year-old girl who presented with weakness in her left hand. There was slight hypoesthesia in the area supplied by the ulnar nerve. X-ray of the elbow showed a bony spur on the anteromedial aspect of the medial supracondylar ridge. On operation, the ulnar nerve was found tightly stretched over the bony spur, especially on flexion of the elbow. The patient improved after the excision of the spur.[3]

Mittal and Gupta published an unusual case of both median and ulnar nerve palsy and compression of brachial artery due to the supracondylar process of the humerus in a 17-year-old boy. There was a weakness of all the muscles supplied by the ulnar and median nerve and problems in flexion and extension of the elbow. The patient improved after the excision of the process.[4]

Supracondylar process of the humerus can also fracture. Spinner et al reported 3 cases of fracture of the supracondylar process and reviewed 12 other cases from the literature. They opined that the supracondylar process of the humerus had the potential for fracture leading to neurovascular complications.[5]

Pecina et al. reported a case of anomalous insertion of ligament of Struthers. The ligament did not reach the medial epicondyle but was inserted in the brachial fascia above the epicondyle functioning as a complete ligament and produced symptoms similar to supracondylar process syndrome. Excision of the process and ligament relieved the patient from symptoms.[6]

A rare case of lateral supracondylar spur process arising 2 cm proximal to the lateral epicondyle of the humerus was reported by Bhatnagar et al. The case was diagnosed during routine evaluation of isolated adult humerus specimen. The process was 2.5 cm long, 1 cm wide, 1 mm thick and fin-shaped. The remaining skeleton of this humerus was not available for study. Based on its location they speculated that it might represent an ossified lateral intramuscular membrane. The authors stressed that knowledge of this anatomical variation is essential for clinicians and surgeons to avoid any complications.[7]

CONCLUSIONS
The supracondylar process is a rare congenital bone projection on the anteromedial surface of the humerus. It can cause neurovascular complications due to entrapment of the median nerve and brachial artery. It also has the potential for fracture. Its knowledge is necessary for clinicians since it can be misdiagnosed with other pathological conditions like osteochondroma and myositis ossificans. Osteochondroma grows away from the joint whereas the supracondylar process of humerus grows towards the joint. This article will help the clinicians in differentiating lesions arising from the lower end of the humerus.

REFERENCES