

An Elongated Styloid Process: A Case Report

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Abstract

In the department of anatomy MGIMS Sevagram during routine osteology demonstration classes for undergraduate students, one adult dried human skull of students had abnormally long styloid processes approximately measuring 5 cm in length. The details of this case along with clinical implications are presented below.

Keywords: Styloid process; Skull; Reichert's cartilage.

Introduction

Elongated styloid process can cause recurrent throat pain along with foreign body sensation, dysphagia or facial pain. Additional symptoms may include neck or throat pain which may radiate to ipsilateral ear.[1] In adults the styloid process is approximately 2.5 cm in length and its tip is located between the external and internal carotid arteries on lateral aspect of the tonsillar fossa.[2]

Results

The length of the styloid process was measured with the help of Vernier Caliper.

Table 1: Measurements of styloid processes

Length in cm	
Right styloid process	Left styloid process
5 cm	4.9 cm

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Discussion

The styloid process is a slender bony projection extending downwards and forwards which lies anteromedial to the mastoid process. Its normal length is from 2 cm to 3 cm and a styloid process longer than 3 cms is found in 4 to 7 % of the population.[2] It gives attachments to three muscles and two ligaments. The styloglossus originates from anterior surface of tip, the stylohyoid from posterior surface midway between tip and base and the stylopharyngeus from medial surface of base. The facial nerve emerges from the stylomastoid foramen posteriorly. The stylohyoid ligament extends from the styloid process to the lesser cornu of the hyoid bone.[3]

Embryological explanation

The styloid process, stylohyoid ligament and lesser cornu of the hyoid bone are derived from Reichert's cartilage, which arises from the second branchial arch.[4] The cause of elongation of the styloid process has not been fully elucidated. Several theories have been proposed:

1. Congenital elongation of the process due to persistence of a cartilaginous anlage in the stylohyale.
2. Calcification of the stylohyoid ligament giving the appearance of an elongated

Fig 1: Showing elongated styloid process

styloid process.

3. Growth of osseous tissue at the insertion of the stylohyoid ligament.[5]

Regardless of the pathophysiology of elongation, the result is a rigid, abnormally long structure that can cause pain or discomfort by one or several mechanisms. It may develop inflammatory changes or impinge on the adjacent arteries, on sensory nerve endings leading to the symptoms like recurrent throat pain, dysphagia or facial pain. Diagnosis can usually be made on physical examination by digital palpation of the styloid process in the tonsillar fossa which exacerbates the pain. In addition relief of symptoms with injection of an anaesthetic solution in to the tonsillar fossa is highly suggestive of this diagnosis. Radiological diagnosis includes AP and lateral x rays of skull. The most satisfactory and effective treatment Eagles syndrome is surgical shortening of the styloid process via intraoral or external approach.[6]

Conclusion

Though the incidence of Elongated Styloid process is 4 to 7%, many times it remains under diagnosed. A complete clinical and radiological examination will help one to reach at a proper diagnosis. This will help to decide the line of management and the ultimate clinical out come.

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