

Case Report on Elongated Styloid Process

Kiran V.Padeyappanavar^{1*}, P.S. Bhusareddy² and A.S. Nagaleekar¹

¹*Department of Anatomy, Belgaum Institute of Medical Sciences, Civil Hospital Campus, Belgaum- 590001, Karnataka, India and* ²*Department of Anatomy, Karnataka Institute of Medical Sciences, Vidya Nagar, Hubli, Karnataka, India*

Abstract: In the department of Anatomy Al-ameen Medical College Bijapur during routine osteology demonstration classes for undergraduate students, three adult dried human skulls of students showed abnormally long styloid processes approximately measuring more than 5cm. The details of these cases along with their clinical implications are presented below.

Key words : Styloid process, skull.

Introduction

Elongated styloid process or calcified stylohyoid ligament can cause recurrent throat pain along with foreign body sensation, dysphagia or facial pain. Additional symptoms may include neck or throat pain with radiation 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, just lateral to the tonsillar fossa [2].

Materials and Methods

During the routine course of osteology demonstration classes for undergraduate students it was observed in three dried adult human skulls of students out of 40 skulls showed their styloid processes were elongated.

Results

The length of the styloid processes were measured with the help of vernier caliper.

Skull	Length in Cm	
	Right	Left
A	4.5	5.0
B	4.0	5.5
C	5.2	5.0



A B C

Fig.1 Photographs of skulls showing elongated styloid processes.

Discussion

Gross Anatomy: The styloid process is a slender, elongated, cylindrical bony projection from temporal bone that lies anteromedial to the mastoid process. It normally varies in length from 2 cm. to 3 cm [2], and a styloid process longer than 3 cms is found in 4 to 7 % of the population [3]. The styloid process has attachments to three muscles and two ligaments. The stylopharyngeus, stylohyoid and styloglossus muscles originate here. 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.

Embryology: 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 [4-5]. 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 styloid process.
3. Growth of Osseous tissue at the insertion of the stylohyoid ligament.

The third theory is based on histologic evidence of metaplastic changes to the subperiosteal cells in the vicinity of the ligaments insertion. 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.

Elongated styloid process or calcified stylohyoid ligament can cause recurrent throat pain along with foreign body sensation, dysphagia or facial pain [1].

Elongated styloid process is a diagnosis that should be considered in the evaluation of recurrent neck, throat or facial pain and dysphagia with or without radiation of pain to the ipsilateral ear. In adults the styloid process is approximately 2 to 3 cms in length and its tip is located between external and internal carotid arteries just lateral to the tonsillar fossa [2]. It may develop inflammatory changes or impinge on the adjacent arteries, on sensory nerve endings leading to the symptoms described. 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. Radiographic work up should include antero-posterior and lateral skull films [6]. Diagnosis can also be made by plain radiography, orthopantomogram and CT scan. Injection of local anesthetic into tonsillar fossa relieves pain can be used as a diagnostic tool [7]. The treatment of Eagles syndrome is primarily surgical. The styloid process can be shortened through an intraoral or external approach. Other isolated cases were reported until Eagle described the syndrome in (1937). Eagle divided the syndrome into two categories. He described the classic syndrome as persistent pain in the pharynx, aggravated by swallowing with the pain frequently referred to the ear on the side of the elongated styloid process. He also notice increased salivation, hesitancy, difficulty in swallowing, gagging and a foreign body sensation [8-9].

Fritz (1940) reported that only 11 of 43 patients with the syndrome in his series have had tonsillectomy. Both Eagle and Fritz reported that their patients were completely relieved of symptoms by the intraoral shortening of the styloid process [10].

Harma (1967) noted that bilateral elongation occurred in 50 % of the patients but only half of them had bilateral symptoms [11].

Steinmann (1968) reported the syndrome in 30 patients, 26 of whom did not have an elongated styloid process [12]. Keur et al (1986) assessed 1135 edentulous patients clinically and radio graphically to determine the relationship between the elongated styloid process and four symptoms frequently encountered in patients with Eagles syndrome [13].

Conclusion

Eagle's syndrome though the incidence is 4 to 7%, it is largely under diagnosed. A thorough clinical and radiological examination will reveal impending insult. Proper diagnosis can definitely be of immense help to rationalize the line of management and the ultimate clinical outcome.

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All Correspondence: Kiran.V.Padeyappanavar, Department of Anatomy, Belgaum Institute of Medical Sciences, Civil Hospital Campus, Belgaum- 590001, e-mail- dr.kiranvp@gmail.com