



THE SIGNIFICANCE OF THE ANOMALIES OF THE STYLOID PROCESS

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Abstract

Anomalies of the styloid process of the temporal bone are an important anatomical and clinical problem associated with various symptom complexes, including Eagle syndrome. This review systematizes data from studies published in 2010-2014 and indexed in the Scopus database, as well as a number of modern Russian publications on morphometry, clinical manifestations and diagnosis of this pathology. The review covers morphological variations, imaging techniques, epidemiological data, diagnostic and therapeutic features, which allows an in-depth presentation of this problem in a multidisciplinary context.

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Keywords: styloid process, Eagle syndrome, morphometry, CBCT, anatomical variations.

Introduction

The awl-shaped processus (styloideus) of the temporal bone is a thin bony structure extending from the lower surface of the temporal bone. Normally, its length ranges from 20 to 30 mm, but in some cases it can reach more than 40 mm, which leads to pathological manifestations combined into Needle syndrome. The problem of the elongated styloid remains relevant due to the difficulties of clinical diagnosis, the similarity of symptoms with a number of other diseases (lingopharyngeal nerve neuralgia, cervical osteochondrosis, pathology of the salivary glands) and the frequent underestimation of this pathology in practice.

Materials and Methods

The purpose of this review is to systematize the data of modern literature obtained on the basis of original research indexed in Scopus in 2010-2014, as well as to include relevant data from domestic authors in related dental fields.

Results

Morphometric studies: The morphometric characteristics of the styloid process demonstrate high variability. Margam & Jadhav (2015), when examining dry skulls, found that the length of the process varied from 13 to 17.8 mm, while in men the indicators were significantly higher than in women [1]. Rathva et al. (2013) confirmed the presence of intersex differences and asymmetry between the right and left sides [2].

Patil et al. (2014), in their work on the Indian population, pointed out significant fluctuations in the length of the appendage, revealing more pronounced anomalies among men [9].





The work of Gupta et al. (2013), which used multi-slice CT data with 3D reconstruction, is also noteworthy. The authors noted that the length of the process exceeding 30 mm was observed in 18.2% of the examined, while 7.9% showed signs of compression of adjacent anatomical structures [2].

Clinical manifestations and Igla syndrome. Clinically, the elongation of the styloid process can be manifested by pain in the pharynx, lower jaw, neck, auricle, as well as a feeling of a foreign body in the throat, difficulty swallowing (dysphagia), limited neck mobility and headaches. Kim et al. (2013) in a series of clinical observations showed that the pain syndrome in Igla syndrome can be intermittent and increase with head rotation [3]. Sharma et al. (2013) описали случай двустороннего удлинения отростка с выраженной дисфагией, симулирующей опухолевое поражение ротоглотки [11].

Singh et al. (2013) and Kumar et al. (2013) emphasize the importance of careful differential diagnosis with pathologies of the spine, parotid and sublingual glands [14, 15].

Due to the anatomical proximity of the styloid process to a number of dental structures, the opinion of domestic authors should be taken into account, pointing out the importance of prevention and early detection of diseases of the maxillofacial region. So, Abdugarimov N. M. et al. They emphasize the importance of an interdisciplinary approach in the diagnosis of dental and otoneurological conditions, where anomalies of the styloid process can play a key role [16, 17].

Radiation diagnostics To date, cone beam computed tomography (CBCT) remains the "gold standard" for the diagnosis of styloid process anomalies. Unlike panoramic radiography, it allows you to obtain high-precision spatial parameters. Ilgüy et al. (2014) indicate that CBCT makes it possible to assess not only the length, but also the angle of deviation of the process, which is of clinical importance [6].

Balcioglu et al. (2013) note that 3D reconstructions obtained by CT are especially important when planning surgical intervention [5]. According to Ilgüy M. et al. (2013), the detection of an elongated appendage during CBCT in patients with chronic cervicalgia confirmed Igla syndrome in 9.7% of cases [15].

Anatomical and epidemiological features. According to anatomical studies by Baseer et al. (2013), the frequency of elongation of the styloid process among the Indian population ranges from 4 to 30%, which indicates a wide variability depending on ethnic and genetic factors [7].

Sivakumar et al. (2013) in a series of sectional studies confirm a higher prevalence of anomalies among males [10].

The work of Peur et al. (1986), who proposed a classification of anomalies by type, length, and direction of the process, is interesting. Despite the age of publication, their typology remains relevant when planning surgical interventions [8]. Modern approaches to treatment

In severe clinical manifestations, surgical removal of the elongated appendage (stylectomy) is indicated, which can be performed by intraoral or external access. According to Balcioglu et al. (2013), intraoral access minimizes postoperative complications, but requires a clear visualization of the intervention area [5].

Conservative therapy includes the use of analgesics, NSAIDs, muscle relaxants and physiotherapy methods. However, the effectiveness of conservative treatment, according to Sharma et al. (2013), is limited and is applicable mainly for mild symptoms [11].





In the light of domestic experience, an integrated approach, including early diagnosis and preventive monitoring of patients with oral mucosal pathologies, as emphasized by Abdulkarimov N. M. and Jalilova Y., can contribute to the early detection of concomitant bone abnormalities [18, 19].

Conclusion

Styloid process anomalies are a multidisciplinary problem requiring the involvement of anatomists, radiologists, dentists, and ENT specialists. Timely diagnosis based on modern radiation techniques and knowledge of morphological variations ensures effective therapeutic tactics. In the light of modern morphometric and clinical radiological data, further standardization of approaches to assessing the length and shape of the process is necessary, which is especially important in various ethnopopulation groups. Equally important is the development of a system of dental prevention and orthodontic correction capable of detecting abnormalities at an early stage.

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