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Stylohyoid Syndrome

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Abstract: Such scantily studied state as stylohyoid syndrome remains unknown among the doctors of different specialties-otolaryngologists, dentists, neurologists. Not all the issues of etiology and the pathogenesis of this disease are solved so far. The informing of all doctors by the fact of this problem as well as its relevance will facilitate an accurate and timely diagnosis. This will reduce the time of diagnostic search and will provide some quality patient care with stylohyoid syndrome as soon as possible. This study is devoted to the generalization of literature data on the problem stylohyoid syndrome and the description of his own observations.

Key words: Megastiloyd, stylohyoid syndrome, eagle syndrome, Eagle-Sterling syndrome, stialgiya, resection of the styloid process

INTRODUCTION

The term "stylohyoid syndrome" has many synonyms in literature-styloid syndrome, styloid-stylohyoid syndrome, Eagle, Eagle syndrome, Eagle-Sterling syndrome, sialgiya, styloiditis, megastiloyd, elongated styloid process syndrome. Such a variety of names of the same syndrome underlines that it still remains unknown among the doctors of different specialties-otolaryngologists, dentists, neurologists. Working with literary sources on the issue of stylohyoid syndrome we noticed that most works of many rseearch is devoted to the description of a case (Balbuena *et al*., 1997; Han *et al*., 2013; Murtagn *et al*., 2001; Baharudin *et al*., 2012; Shutov *et al*., 2005; Khandelwal *et al*., 2011). However, in recent years there were the attempts to generalize and systematize the data on this problem. So, Lebedjancev *et al*. (2015) published the monograph which is currently the most detailed description of this pathology. We consider it is appropriate to bring our review of the literature data, dealing with Eagle syndrome.

METHODS

We analyzed the literature sources addressing stylohyoid syndrome (Baharudin *et al*., 2012; Balbuena *et al*., 1997; Eagle, 1958; Gokce *et al*., 2008; Lebedjancev *et al*., 2015, Han *et al*., 2013; Murtagh *et al*., 2001; Getal, 2013; Shutov *et al*., 2005; Khandelwal *et al*., 2011).

MAIN PART

We consider, it is appropriate to give a brief description of its own clinical observation. The patient G., 24 years old admitted to the ENT department of the Belgorod City Hospital No. 2 with the complaints of pain in the right half of the throat which becomes worse when swallowing, irradiating to the right side of the neck, the right ear and a foreign body sensation in the throat. The patient has been suffering for 1 year. She appealed repeatedly to the polyclinic otolaryngologists who diagnosed "the exacerbation of chronic catarrhal pharyngitis" and prescribed topical treatment which did not bring to the change of the state. The patient was consulted at the ENT department of the Belgorod City Hospital No. 2 stylohyoid syndrome was assumed. The bilateral tonsillectomy is in the case history (the 2 years prior to the appearance of these complaints).

The patient underwent a spiral computed tomography of the neck and temporal bones. In a series of obtained native tomograms an elongated (by 12 mm compared to the left one) right styloid process (its total length makes 50 mm) is observed deflected internally. The big horn of the right hyoid bone is slightly length ened. There is no calcification of stylohyoid ligament is not revealed. The ratio and the relative positions of the carotid arteries and the right styloid process is normal and unchanged compared with the contralateral side. The median structures of the neck are not displaced. The neck muscles are symmetric and not thickened. The lymph nodes are not enlarged. Additional tumors are not revealed. The axis of the cervical spine is rejected to the right. Cervical lordosis is flattened.

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Status at admission to hospital. Rhinoscopy including back one, laryngoscopy, otoscopy did not reveal an organic pathology. During pharyngoscopy the mucosa of the mouth vestibule is pink, smooth, wet, the teeth are sanitized. The mucosa of the soft palate, uvula, anterior and posterior palatine arches is pink, smooth and moistened. Palatine tonsils are absent. Tonsillar niche are empty. During the palpation of the right tonsillar niche the distal end of the styloid process is revealed. The palpation of the right tonsillar niche is painful. The mucous membrane of posterior pharyngeal wall is pink, smooth and moistened. Submandibular lymph nodes are not enlarged, the skin over them is not changed, the palpation is painless.

The patient was diagnosed with the stylohyoid syndrome on the right. The resection of the right styloid process with a transoral access is performed under endotracheal anesthesia, during which the 14 mm fragment of the right mastoid is removed.

The postoperative period was uneventful. The patient was discharged from the hospital in a satisfactory condition on the 5th day after surgery. During follow-up visit 1 month later (and after 6 months and 2 years) after discharge, the patient did not complain at all. The palpation of the right tonsillar niche is painless, bony growths are not determined.

Definition, pathogenesis: According to Balbuena *et al.* (1997), Eagle syndrome is the collection of symptoms that includes recurrent sore throat, foreign body sensation in a throat, dysphagia and/or the pain in a face and regarded as a direct result of the styloid process elongation or the ossification of stylohyoid ligament. Lebedjancev *et al.* (2015) indicate that this syndrome occurs mainly among females at the age of over 40 years. Also, Lebedjancev *et al.* (2015) note that this complex of symptoms is caused by the irritation of anatomical structures of deep departments of a face nad a neck by styloid process: glossopharyngeal nerve, peripharyngeal plexus and lateral pharyngeal wall, the internal carotid artery and periarterial sympathetic plexus, the muscles of peripharyngeal space and manifests itself not only as pain syndrome and dysphagia but also as the symptoms of brain circulatory disorders, often as depression and carcinophobia. Eagle (1958) considered that tonsillectomy is a leading factor in the development of stylohyoid syndrome.

Gokce *et al.* (2008) considered a styloid process as an elongated one if the length of a styloid process or the length of it along with the ossified stylohyoid bunch make 30 mm or more. However, Han *et al.* (2013) described the cases of elongated styloid process over 30 mm which did not manifest clinically. Baharudin *et al.* (2012) believe that there is no evidence at the moment confirming the correlation of the process length to the severity of symptom manifestation.

DIAGNOSTICS

In this part, we focus on objective methods of stylohyoid syndrome verification. We believe that one of the most significant features of this syndrome is the definition of the styloid process top during the palpation of tonsillar niches. The performance of virtually any X-ray examination of the skull including orthopantomogram, according to Baharudin *et al.* (2012), may allow to identify an elongated styloid process. Multislice computed tomography (MSCT) may be regarded as an important diagnostic tool to determine the size, orientation (the degree and direction of a curvature), the location of the styloid process and its relationship to other structures of the neck. Also, Baharudin *et al.* (2012) insist on the implementation of MSCT 3D, claiming a high diagnostic value of this method.

PRINCIPLES OF TREATMENT

In the literature sources, two types of treatment are presented usually: a conservative and a surgical one. Lebedjancev *et al.* (2015) describe conservative method that includes pharmacological blockade using lidocaine or novocaine solution, sometimes combining it with the suspension of hydrocortisone. The solution is introduced transorally in the apex of the styloid process. Furthermore, Lebedjancev *et al.* (2015) consider, it is reasonable to prescribe nonsteroidal-anti inflammatory drugs and also psychotropic substances. And only in the absence of effect from conservative treatment the patient shall have a surgical treatment. There are two types of surgical approaches to the styloid process-an external and a transoral one. Many researchers (Lebedjancev *et al.*, 2015; Shutov *et al.*, 2005) and others prefer to dwell only on one of them.

SUMMARY

In each case, the choice of a treatment strategy should be decided individually. Definitely one may recommend to start with a conservative method. The lack of effect from conservative treatment may be considered as an indication for surgical treatment. Today, there are no absolute reasons to believe that one method of access (a transoral or an external one) is better than another. Rather, a surgeon, considering all the nuances has the right to choose an optimal method of intervention.

CONCLUSION

Stylohyoid syndrome can not be called a rare disease but the lack of revised data on the issues of clinics, diagnosis and treatment identified the anonymity of this syndrome among practitioners. The informing of doctors with different specialties by the fact of this problem as well as by its relevance will facilitate an accurate and timely diagnosis. This will reduce the period of diagnostic search and provide the quality care for a patient with stylohyoid syndrome as soon as possible.

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