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ORIGINAL ARTICLE

Cleft Lip and Palate Subjects Prevalence of Abnormal Stylohyoid Complex and Tonsilloliths on Cone Beam Computed Tomography☆

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KEYWORDS
Cone-beam computed tomography;
Incidental findings;
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Abstract
Introduction and objectives: Tonsilloliths and abnormal stylohyoid complex may have similar symptoms to others of different aetiology. Individuals with cleft lip and palate describe similar symptoms because of the anatomical implications that are peculiar to this anomaly. The aim of this study was to determine the prevalence of abnormal stylohyoid complex and tonsilloliths on cone beam computed tomography in individuals with cleft lip and palate.
Methods: According to the inclusion and exclusion criteria, 66 CT scans out of 2794 were analysed, on i-Cat® vision software with 0.8 index Kappa intra-examiner.
Results: The total prevalence of ossification of the incomplete stylohyoid complex in individuals with cleft lip and palate was 66.6%; the prevalence of these findings in females was 75% and 61.9% in males. The total prevalence of tonsilloliths was 7.5%.
Conclusion: It is important to ascertain calcification of the stylohyoid complex and tonsilloliths in the radiological report, due to the anatomical proximity and similar symptomatology to other orofacial impairments in individuals with cleft lip and palate, focusing on females with oral cleft formation, patients with incisive trans foramen cleft and incisive post foramen cleft because they are more prevalent. Greater knowledge of the anatomical morphometry of individuals with cleft lip and palate greatly contributes towards the selection of clinical behaviours and the quality of life of these patients, since cleft lip and palates one of the most common anomalies.

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PALABRAS CLAVE
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Fisura labial;
Fisura palatina

Prevalencia de alteraciones en el complejo estilohioideo y tonsilolitos en la tomografía computarizada de haz cónico realizada en individuos con fisura labiopalatina

Resumen
Introducción y objetivos: Los tonsilolitos y alteraciones en el complejo estilohioideo pueden presentar similar sintomatología a otras de diferente etiología. Los individuos con fisura labiopalatina describen similares síntomas en razón de las repercusiones anatómicas propias de esta anomalía. El objetivo de este estudio fue determinar la prevalencia de alteraciones del complejo estilohioideo y tonsilolitos en exámenes de tomografía computarizada de haz cónico en individuos con fisura labiopalatina.
Métodos: Según criterios de inclusión y exclusión fueron analizadas 66 tomografías de 2.794 tomografías, en el software i- Cat visión ® con índice Kappa 0,8 intraexaminador.
Resultados: La prevalencia total de osificación del complejo estilohioideo incompleto en individuos con fisura labiopalatina fue de 66,6%, la prevalencia de estos hallazgos en el género femenino fue de 75% y 61,9% en el género masculino. La prevalencia total de tonsilolitos fue de 7,5%.
Conclusión: Es de relevancia constatar en el informe radiológico la presencia de la calcificación del complejo estilo-hioideo y tonsilolitos. Debido a la proximidad anatómica y similar sintomatología clínica con otras alteraciones orofaciales presentes en los individuos con fisura labiopalatina, haciendo énfasis en individuos con fisura labiopalatina del género femenino, pacientes con fisura tipo transformen incisivo y posforamen incisivo por presentar mayor prevalencia. Conocer más sobre la morfometría anatómica de individuos con fisura labiopalatina coadyuva relevantemente en la elección de conductas clínicas y calidad de vida de estos pacientes, teniendo presente que la fisura labiopalatina es una de las anomalías más comunes.

Introduction

The stylohyoid complex comprises the styloid process of the temporal bone, stylohyoid ligament and lesser cornu of the hyoid bone.[1]

The aetiology of abnormal stylohyoid complex has not been established. Currently, the most accepted theory is that it is due to pathological mineralisation of the stylohyoid complex, which we consider calcification of the stylohyoid complex. Steinmann considers it to result from a hyperplastic/metaplastic reaction.[2,3]

The clinical manifestations of stylohyoid complex calcification are described as the classical Eagle syndrome which refers to the proximity to various anatomical structures that can result in the following symptoms: dysphagia, tinnitus, otalgia, cervicofacial pain, trismus, foreign body sensation in the neck.[1] These symptoms can be accompanied by changes in the voice and hypersalivation. There are case reports where calcification of the stylohyoid complex manifests as: difficulty in endotracheal intubation, cerebral ischaemia, pseudoaneurysms, the latter two caused by compression of the carotid artery, due to a calcified stylohyoid complex or changes in its angle.[4–6] In other cases it can irritate the sympathetic nerve plexus.[1]

The tonsils are lymphoid nodules in the tonsillar fossa in the oropharyngeal wall. They have an immunological function and their calcification can cause tonsilloliths.[7]

It is thought that tonsilloliths occur through a phenomenon termed dystrophic calcification, together with other aggregates of inflammatory debris.[2,7]

Clinically tonsilloliths present with chronic halitosis, irritable cough, odinophagia and like calcification of the stylohyoid complex: dysphagia, otalgia, and foreign body sensation. Calcified stylohyoid complex and tonsilloliths can be asymptomatic disorders and found incidentally.[2,8]

Cleft lip and palate is defined as a solution of continuity. It is considered one of the most common congenital anomalies, with an overall incidence of 1 in 700 people.[9,10]

Individuals with cleft lip and palate are more vulnerable to recurrent inflammatory symptoms, adenoid hypertrophy, and Eustachian tube dysfunction that can result in hearing loss, and variants at the level of the tensor veli palatini muscle, oroantral communications and repeated episodes of otitis media.[11] All these impairments present with similar clinical symptoms in patients with calcified stylohyoid complex and tonsilloliths.

Radiological visualisation of calcified stylohyoid complex and tonsilloliths is difficult on two-dimensional imaging, because they are flat figures. There are also other limitations such as magnification, distorsion and superimposing structures.[12] This technique is limited for complementary or final diagnoses, especially for people with cleft lip and palate.[13]

All these problems are overcome with the three-dimensional imaging of cone beam computed tomography