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ORIGINAL ARTICLE

Airway Evaluation by Indirect Laryngoscopy in Patients With Lingual Tonsillar Hypertrophy☆

Jorge Sánchez-Morillo,[a,*] Lorena Gómez-Diago,[a] Pablo Rodríguez-Gimillo,[a] Raúl Herrera-Collado,[a] Jorge Puchol-Castillo,[a] Luis Mompó-Romero[b]

[a] *Servicio de Anestesiología y Reanimación, Hospital Universitario Dr. Peset, Valencia, Spain*
[b] *Servicio de Otorrinolaringología, Hospital Universitario Dr. Peset, Valencia, Spain*

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KEYWORDS
Indirect laryngoscopy;
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Difficult airway;
Tonsil;
Hypertrophy

Abstract
Introduction and objectives: Prevalence of the lingual tonsillar hypertrophy is unknown but it is believed that its presence is associated with the difficult airway. To investigate this, indirect laryngoscopy was performed on patients in the preoperative evaluation and this pathology was diagnosed. The relationship with difficulty of viewing the larynx, intubation and ventilation, under general anaesthesia and using direct laryngoscopy, was then studied.
Methods: We performed the demographic variable checks and tests for predicting difficult intubation (mouth opening, thyromental distance, cervical flexion-extension, neck thickness, and Mallampati test), in the preoperative step on 300 patients who were going to be submitted to general anaesthesia. We then performed indirect laryngoscopy on them using a 70° rigid laryngoscope to ascertain the frequency of appearance of lingual tonsillar hypertrophy. Next, under general anaesthesia, we carried out direct laryngoscopy to verify whether there was difficulty in viewing the larynx and intubation and ventilation. We then investigated the association of demographic predictors of difficult intubation, including indirect laryngoscopy, with the presence of this condition.
Results: Prevalence of lingual tonsillar hypertrophy was 2%. No relationship between the appearance of this entity and the difficulty of viewing the larynx, intubation and ventilation was found. Only indirect laryngoscopy was linked to the appearance of this pathology.
Conclusions: Lingual tonsillar hypertrophy is a relatively frequent disorder, whose presence is not usually associated with difficult airway.

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* Corresponding author.
E-mail address: sanchez_jormor@gva.es (J. Sánchez-Morillo).

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PALABRAS CLAVE
Laringoscopia indirecta;
Laringoscopio rígido;
Laringoscopia directa;
Vía aérea difícil;
Amígdala;
Hipertrofia

Evaluación de la vía aérea mediante laringoscopia indirecta en pacientes con hipertrofia de la amígdala lingual

Resumen
Introducción y objetivos: Se desconoce la prevalencia de la amígdala lingual hipertrófica, pero se cree que su presencia está asociada con la vía aérea difícil. Para investigarlo se realizó a los pacientes una laringoscopia indirecta en el preoperatorio y se diagnosticó esta enfermedad. Después, bajo anestesia general y laringoscopia directa estudiamos su relación con la dificultad de visión de la laringe, intubación y ventilación.
Métodos: A 300 pacientes que iban a ser sometidos a anestesia general, además de realizarles en el preoperatorio los predictores demográficos y de vía aérea difícil (prueba de Mallampati, apertura bucal, distancia tiromentoniana, flexoextensión cervical y grosor del cuello), se les practicó una laringoscopia indirecta con el laringoscopio rígido de 70° y se comprobó la frecuencia de aparición de la amígdala lingual hipertrófica. Después, bajo anestesia general y laringoscopia directa verificamos si existía dificultad de visión e intubación de la laringe y de ventilación. Exploramos la relación de las 3 variables anteriores con esta enfermedad mediante la prueba de Fisher. También, se investigó la asociación de predictores demográficos y de vía aérea difícil incluyendo la laringoscopia indirecta, con la presencia de esta afección.
Resultados: La prevalencia de amígdala lingual hipertrófica fue del 2%. No se encontró relación entre la aparición de esta entidad y la dificultad de visión de la laringe, intubación y ventilación. Solo la laringoscopia indirecta previno la aparición de esta enfermedad.
Conclusiones: La amígdala lingual hipertrófica es una entidad relativamente frecuente. Su presencia no se asocia habitualmente con la vía aérea difícil.

Introduction

The lingual tonsils are rounded masses of lymphatic tissue which are normally located on both sides of the glossoepiglottic fold and are part of the tonsillar tissue ring surrounding the entrance of the upper airway.[1,2] Due to their small size they usually go unnoticed in normal subjects during the exploration of the tongue base and hypopharynx by indirect laryngoscopy (IL) and fibroscopy. However, chronic infection processes can cause them to become hypertrophied and inflamed, and they can reach a large size, fill the vallecula, displace the epiglottis in an anterior direction and narrow the airway retroglosally. Moreover, although it is sometimes an asymptomatic disease, it can intermittently cause foreign body sensation and tightness in the throat, dysphagia, difficulty breathing, coughing, snoring, voice alterations and obstructive sleep apnoea syndrome (OSAS).[1–4] The history of patients suffering lingual tonsillar hypertrophy can sometimes include previous tonsillectomy and adenoidectomy.[2,4–8]

The prevalence of lingual tonsillar hypertrophy (LTH) is unknown,[2,9] but it is believed that its presence is a risk factor in the genesis of unexpected difficult airway,[2,9] a concept which encompasses difficult visibility of the larynx (DVL), intubation, and ventilation. The concurrence of these 3 variables in the same patient due to this condition can have fatal consequences.[5]

On the other hand, when the patient is intervened due to an otolaryngological disease, the ENT specialist often carries out an IL to explore the upper airway. If LTH is diagnosed at this point and the anaesthesiologist is warned about the finding, he may then implement an adequate anaesthetic induction and intubation strategy.[8] At other times, patients have even suffered the breakage of incisors during intubation attempts by direct laryngoscopy (DL), and the origin of the difficulty, which was LHT, has remained undetected.[10] It is usually diagnosed after difficulty or impossibility for intubation using fibroscopy[2] or magnetic resonance imaging.[11]

Our primary goal was to employ an IL performed by the anaesthesiologist with a 70° rigid laryngoscope before surgery to verify the frequency of LTH among a group of patients who were scheduled to undergo surgical procedures under general anaesthesia (GA) and DL. Once the disease was diagnosed and GA and DL were carried out, we analysed the association between the presence of LTH and DVL, with difficulty for intubation and ventilation. The secondary objective was to explore the association of demographic and difficult airway predictors (including IL) with the presence of this anomaly.

Methods

Once approved by the Ethics Committee of our hospital, and after obtaining written informed consent, we conducted a prospective, observational study of 300 consecutive patients between September 2009 and November 2010. All of them underwent elective surgery under GA, with endotracheal intubation by DL. We applied the following exclusion criteria: age less than 18 years, inability to sit, coronary disease, ankylosing spondylitis, nasogastric probe carriers, sufferers of infectious diseases such as hepatitis, HIV and TB, recent neck surgery and obstetric and emergency surgery.

On the day scheduled for the intervention, in the surgical area, after consulting the preoperative examination conducted previously in the pre-anaesthesia consultation,