

Correlation Between Clinical Diagnosis and Pathological Diagnosis in Laryngeal Lesions

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Summary: Objectives. To evaluate the degree of agreement between the clinical and the pathological diagnosis in patients undergoing laryngeal microsurgery due to epithelial or edematous lesions of the vocal folds.

Study design. This is a retrospective study.

Methods. The study was developed in the ear, nose, and throat clinic of a tertiary hospital, through chart review. We included all patients who underwent microsurgery of the larynx, whose videolaryngoscopic tests showed vocal fold lesions, from January 2003 to August 2014. During the study period, we identified 48 patients with epithelial and edematous lesions. The patients were divided into two groups. In group A, patients with edematous lesions with clinical diagnosis of polyps and Reinke edema were included. Group B comprised patients with epithelial lesions, as leukoplakic injuries. A correlation between histopathological findings and clinical hypothesis between these two groups of lesions was performed.

Results. In group B, there was agreement in 88.9% of cases between the clinical and pathological diagnosis. In group A, compatibility occurred in only 46.4% of cases. We observed a statistically significant difference between the compatibility of the clinical and pathological diagnosis just in edematous lesions ($P = 0.029$).

Conclusions. The study showed the limitation of the pathological examination on edematous laryngeal lesions. On the other hand, on the epithelial lesions, there was more agreement between those diagnosis.

Key Words: Larynx–Otorhinolaryngologist–Pathologist–Dysplasia–Reinke edema.

INTRODUCTION

The human vocal fold is a vibrating tissue structure capable of producing sound waves and consists of mucosa, lamina propria, and, more deeply, muscle. The ability for vibration of the vocal fold is closely linked to tissue characteristics of the lamina propria, which, in man, has three layers: superficial, intermediate, and deep.^{1,2}

The surface layer, also known as Reinke space, is a flexible layer able to vibrate heavily during speech and together with the epithelium forms the cover of the so-called vocal fold. The intermediate and deep layers make up the vocal ligament and, along with muscle, form the so-called body of the vocal fold.^{1,2}

The vocal folds can sometimes be attacked by physical, chemical, and biological agents, which commonly lead to reactive inflammatory processes. Tissue changes resulting from this chronic inflammatory condition can cause both epithelial lesions and deeper edematous lesions, usually in Reinke space.^{3,4}

The appearance of these lesions on the vocal folds, seen by videostroboscopic inspection, is the clinical criteria used to differentiate the various types of injuries. The nodules and leukoplakia are examples of epithelial lesions, and polyps and Reinke edema are the most common examples of lamina propria lesions.^{3,4}

Often, patients affected by these inflammatory lesions undergo surgical treatment and lesion specimens are sent to pathological examination. The pathologist assesses the microscopic characteristics of the lesion and delivers its report, which is considered the gold standard in confirming the diagnosis of the patient.⁴

However, unlike other areas of medicine and even from other areas of ear, nose, and throat clinic, the histological diagnosis of these laryngeal lesions has been flawed in the diagnostic conclusion. It is not uncommon to observe disagreement between clinical and pathological diagnosis.⁵

The objective of this study was to assess the degree of agreement between the endoscopic clinical diagnosis and pathological diagnosis in patients undergoing microsurgery of laryngeal epithelial and edematous lesions of the vocal folds.

METHODS

This is a retrospective study conducted in the ENT clinic of a teaching hospital in the Midwest of Brazil, in the period of January–August 2014. The reference population for this study included all patients undergoing microsurgery of the larynx whose stroboscopic inspection showed vocal fold lesions, between January 2003 and August 2014. We used a Storz Stroboscope, model 8020, with a Storz camera model micro TELECAM DX NTSC 20,232,120, and light source model Storz Xenon Nova 20,131,520 produced in Germany.

Data collection was conducted through review of medical records. We reviewed the medical charts to extract the necessary information. Therefore, we used a questionnaire for this purpose. The instrument included as variables: sex, age, type of injury (edematous, epithelial), diagnosis (stroboscopic images), pathological results, presence of risk factors (alcohol

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consumption, smoking). The stroboscopic images could not be reviewed because they were not stored.

For the study, the following inclusion criteria were adopted: patients with edematous (polyps and Reinke edema) and epithelial (leukoplakia) lesions of the larynx, of all ages, all genders, who underwent laryngeal microsurgery from January 2003 to August 2014, in that institution. The patients were operated by various general otolaryngologists, and the pathological diagnoses were given by pathologists of the clinical staff of this institution. Each surgical specimen was evaluated by a single pathologist and was not performed interobserver comparison.

In the survey, we identified 110 patients undergoing laryngeal microsurgery, of which 48 patients with epithelial and edematous lesions, diagnosed by laryngoscopy, were included in our study. Sixty-two patients were excluded because they were diagnosed with cysts, pseudocysts, nodules, sulcus, papilloma, and cancerous lesions, which were the majority of the study sample. Of these 48 included patients, 11 were excluded because of lack of pathological examination available in the medical record and/or institution reports system (Figure 1).

The patients were divided into two groups. In group A, patients with edematous laryngeal lesions with clinical and laryngoscopic diagnosis of polyps and Reinke edema were included. Group B comprised patients with leukoplakic epithelial lesions of the vocal folds. On the basis of the aim of this work, a correlation between histopathological findings and clinical hypothesis was carried out between these two groups of lesions.

The data collected were organized in Excel software and statistically analyzed, using the IBM Statistical Package for Social Sciences (SPSS, Version 21.0). Categorical variables were presented as absolute value (f) and percentage (%). Age as a continuous variable was tested by the Shapiro-Wilk test ($P > 0.05$) and therefore was presented as means \pm standard deviation. Fisher test was used to test the existence of significant difference between the type of injury and the diagnostic hypothesis. It was also used the Student t test to test the existence of significant difference of age and the type of injury and also type of injury and clinical hypothesis. For all

tests, we considered the 95% level of confidence, that is, was considered significant $P < 0.05$.

As established by the 466/2012 Resolution of the National Health Council, the present study was approved by the Research Ethics Committee under nr 4914/14.

RESULTS

Of the 37 patients evaluated in the study, 14 (37.8%) were female and 23 (62.2%) were male, aged 21–67 years, mean 46.3 ± 11.6 years. Of these, 22 (59.5%) patients were smokers, 7 (18.9%) were nonsmokers, and 8 (21.6%) were without medical records. Five (13.5%) patients were alcoholics; 7 (18.9%) were nonalcoholics; and in 25 (67.6%), there was no record in the chart (Table 1).

Comparing the group of patients with edematous lesion and the group of patients with epithelial injury, we saw that there is no significant difference between these groups with respect to age ($P = 0.083$). Patients with edematous lesions had aged 21–67 years, mean 44.3 ± 11.9 years, and patients with epithelial lesions had aged 38–64 years, mean 52.1 ± 9.0 years. There was no significant difference between the two groups regarding the presence of alcohol consumption ($P = 0.247$) or smoking ($P = 0.647$) and the distribution between the sexes ($P = 0.062$) (Table 2).

Regarding the type of injury, we noted the presence of 28 (75.7%) patients with edematous injury and 9 (24.3%) patients with epithelial injury. The most common diagnosis was polyps (48.6%), followed by swelling (27%) and leukoplakia (24.3%) (Table 3).

For these two groups, we observed a statistically significant difference regarding the compatibility of the clinical and pathological diagnosis ($P = 0.029$). In the epithelial lesions group, there was agreement in 88.9% of cases between the clinical/vid-eolaryngoscopic diagnosis and pathology. In edematous lesions group, compatibility occurred in only 46.4% of cases (Table 4).

DISCUSSION

Our study showed that the clinical videolaryngoscopic diagnosis does not always correlate with the pathological diagnosis,

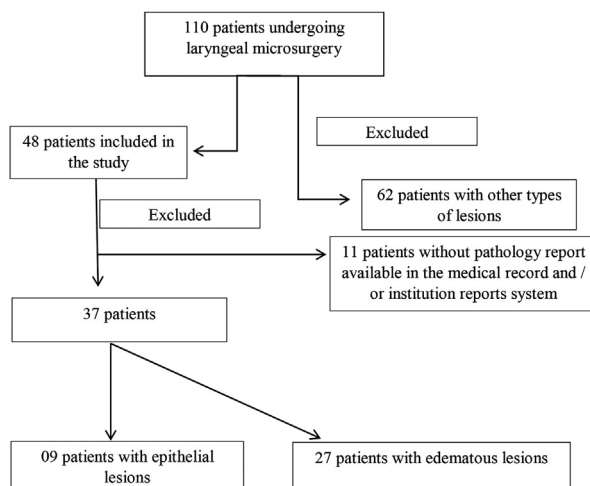


FIGURE 1. Selection process of participants.

TABLE 1. Distribution of Patients According to Gender, Compatible Result, Alcoholism, Smoking

Variable	Number of Cases	
	<i>N</i>	%
Gender		
Male	23	62.2
Female	14	37.8
Alcoholism		
No	7	18.9
Yes	5	13.5
Without registration	25	67.6
Smoking		
No	7	18.9
Yes	22	59.5
Without registration	8	21.6

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