

Histopathologic changes in human true vocal folds: a postmortem study^{☆,☆☆}

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Abstract

Several articles describe the gross pathology alterations of the true vocal cords (TVC), but the histopathology descriptions in adults are rare in the literature and are normally associated with neoplasia. The aim of this study is to identify the TVC morphological lesions in adult autopsies. This was a cross-sectional study of 266 adults' larynxes consecutively autopsied from 1993 to 2003. Histochemical and immunohistochemical methods were used for morphological analysis. Considering the morphological analysis, 97 TVC (36.5%) were considered normal. The following lesions were found in the TVC: thickening of the basal membrane of the TVC in 81 patients (30.5%), inflammatory reaction in 66 patients (24.8%), hemorrhage in 19 patients (7.1%), and ulceration in 3 patients (1.1%). Our study demonstrated that the TVC microscopic lesions are frequent, present different morphological patterns, and showed different causes from what had been described until nowadays by the literature. Despite this difference in the morphological pattern, we were able to identify a common lesion pathway for ethiological different diseases.

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1. Introduction

In adults, the studies performed in true vocal cords (TVC) were mostly performed in patients during propedeutic examinations for diagnostic elucidation of vocal abnormalities. As such, several articles describe the gross alterations of the TVC, such as Reinke's edema, cysts, nodules and polyps, and the relation of these lesions with

clinical status presented by the patient, method of diagnosis, and treatment [1]. Microscopic descriptions of the pathological alterations of human TVC in adults are rare in the literature and are normally associated with neoplasia [2].

Most studies in the autopsy material were done in children. Lesions of the TVC were frequent and reflected local or systemic alterations, aiding in the interpretation of other autopsy findings [3–5]. The aim of this study is to identify the morphological alterations in the autopsy of adult TVC by means of anatomical and pathological examination through histochemical and immunohistochemical techniques.

2. Material and methods

This was a cross-sectional study of 266 adults' larynxes consecutively necropsied at the Triângulo Mineiro Federal Hospital-UFTM and at the Ribeirão Preto Medical School Hospital-FMRP/USP from 1993 to 2003. Patients from

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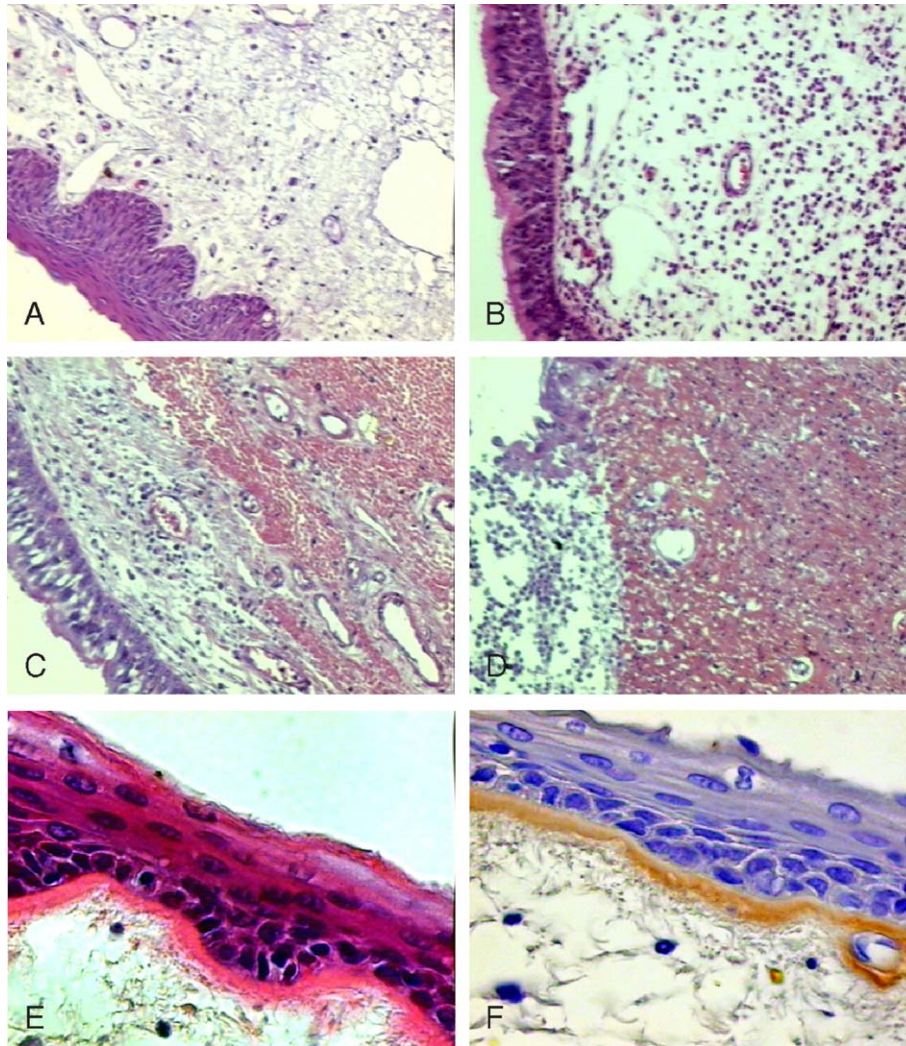


Fig. 1. Considering the morphological analysis, 36.5% were considered normal (A). The following lesions were found in the TVC of the patients studied: TBMTVC (D), inflammatory reaction (B), hemorrhage (C), and ulceration (D). The TBMTVC was positive for collagen IV (F) in the cases in which the PAS was positive and the Carstairs and the Masson green trichrome indicated the thickening as collagen. In the HE, this material presented a pinkish color (E) ($\times 320$).

whom the larynxes were not collected during autopsy were excluded. Information about cause of death, underlying disease, gender, age, and intubation were collected from

the medical records of the subjects. The project was approved by the Ethics in Research Committee of the UFTM (n: 0216).

Table 1

Description from age (years), underlying disease, and the final cause of death from the consecutively autopsied adults, from whom were collected 266 larynxes at the Triângulo Mineiro Medical School Hospital and at the Ribeirão Preto Medical School Hospital from 1993 to 2003

TVC lesions	n (%)	$x \pm SD^*$	Underlying disease (%)	Cause of death (%)
Normal	97 (36.5)	63.8 ± 15.4	DCS (40.2)	IPD (65.2)
TBMTVC	81 (30.5)	51.2 ± 17.9	DCS (39.5)	IPD (54.3)
IR	66 (24.8)	59.1 ± 17.8	DCS (42.4)	IPD (56.1)
Hemorrhage	19 (7.1)	56.4 ± 14.5	DCS (42.1)	IPD (57.9)
Ulceration	3 (1.1)	83.0 ± 4.6	External causes (33.0)	IPD (33.0)
			DCS (33.0)	IPD (33.0)
			Neoplasia (33.0)	Metastases (33.0)
Total	266 (100)	58.5 ± 17.5	DCS (41)	IPD (52.2)

IR, inflammatory reaction; DCS, diseases of the circulatory system; IPD, infectious and parasitic diseases; n, number of cases; $x \pm SD$, media \pm standart desviation.

* $F = 0.997$; $P \leq .001$.

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