



Brazilian Journal of
OTORHINOLARYNGOLOGY

www.bjorl.org



ORIGINAL ARTICLE

Thyroid gland invasion in advanced squamous cell carcinoma of the larynx and hypopharynx^{☆,☆☆}

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Received 2 February 2016; accepted 23 March 2016

KEYWORDS

Squamous cell carcinoma;
Larynx;
Hypopharynx;
Laryngectomy;
Pharyngectomy;
Thyroidectomy

Abstract

Introduction: Squamous cell carcinoma of the larynx and hypopharynx has the potential to invade the thyroid gland. Despite this risk, the proposition of either partial or total thyroidectomy as part of the surgical treatment of all such cases remains controversial.

Objectives: To evaluate the frequency of invasion of the thyroid gland in patients with advanced laryngeal or hypopharyngeal squamous cell carcinoma submitted to total laryngectomy or pharyngolaryngectomy and thyroidectomy; to determine whether clinic-pathological characteristics can predict glandular involvement.

Methods: A retrospective case series with chart review, from January 1998 to July 2013, was undertaken in a tertiary care university medical center. An inception cohort of 83 patients with larynx/hypopharynx squamous cell carcinoma was considered. All patients had advanced stage disease (clinically T3–T4) and underwent total laryngectomy or total pharyngolaryngectomy in association with thyroidectomy. Adjuvant therapy was indicated when tumor or neck conditions required. Frequency of thyroid cartilage invasion was calculated; univariate and multivariate analysis of demographic, clinical and pathological characteristics associated with cartilage invasion were performed.

Results: The overall frequency of invasion of the thyroid gland was 18.1%. Glandular involvement was associated with invasion of the following structures: anterior commissure (odds ratio=5.13; 95% confidence interval 1.07–24.5), subglottis (odds ratio=12.44; 95% confidence interval 1.55–100.00) and cricoid cartilage (odds ratio=15.95; 95% confidence interval 4.23–60.11).

☆ Please cite this article as: Mangussi-Gomes J, Danelon-Leonhardt F, Moussalem GF, Ahumada NG, Oliveira CL, Hojaij FC. Thyroid gland invasion in advanced squamous cell carcinoma of the larynx and hypopharynx. Braz J Otorhinolaryngol. 2016. <http://dx.doi.org/10.1016/j.bjorl.2016.03.019>

☆☆ This article has been presented as an "Outstanding Poster" at the 2014 American Academy of Otolaryngology – Head & Neck Surgery Foundation (AAO-HNSF) Meeting & OTO EXPOSM, which was held on September 21st–24th, in Orlando, FL, USA.

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<http://dx.doi.org/10.1016/j.bjorl.2016.03.019>

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PALAVRAS-CHAVE

Carcinoma
espinocelular;
Laringe;
Hipofaringe;
Laringectomia;
Faringectomia;
Tireoidectomia

Conclusions: Invasion of the thyroid gland is uncommon in the context of laryngopharyngeal squamous cell carcinoma. Clinical and pathological features such as invasion of the anterior commissure, subglottis and cricoid cartilage are more associated with glandular invasion.

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Invasão da glândula tireoide no carcinoma espinocelular avançado de laringe e hipofaringe

Resumo

Introdução: O carcinoma espinocelular de laringe e hipofaringe tem potencial para invadir a glândula tireoide. Apesar desse risco, a proposição de tireoidectomia parcial ou total como parte do tratamento cirúrgico de todos esses casos permanece controversa.

Objetivos: Avaliar a frequência de invasão da glândula tireoide em pacientes com carcinoma espinocelular avançado de laringe ou hipofaringe submetidos a Laringectomia Total ou faringolaringectomia e Tireoidectomia; determinar se características clínico-patológicas podem prever o envolvimento glandular.

Método: Uma série de casos retrospectivos com revisão de prontuários, entre janeiro de 1998 e julho de 2013, foi realizada em um centro médico universitário de cuidados terciários. Uma coorte inicial de 83 pacientes com carcinoma espinocelular de laringe/hipofaringe foi considerada. Todos os pacientes tinham doença em estágio avançado (cl clinicamente T3-T4) e foram submetidos a laringectomia total ou faringolaringectomia em associação com tireoidectomia. Foi indicada terapia adjuvante quando o tumor ou as condições do pescoço exigiram. A frequência de invasão de cartilagem da tireoide foi calculada; análises univariada e multivariada das características demográficas, clínicas e patológicas associadas à invasão de cartilagem foram realizadas.

Resultados: A frequência global de invasão da glândula tireoide foi de 18,1%. O envolvimento glandular foi associado a invasão das seguintes estruturas: comissura anterior (odds ratio = 5,13; intervalo de confiança 95% 1,07-24,5), subglote (odds ratio = 12,44; intervalo de confiança 95% 1,55-100,00) e cartilagem cricoide (odds ratio = 15,95; intervalo de confiança 95% 4,23-60,11).

Conclusões: a invasão da glândula tireoide é rara no contexto de carcinoma espinocelular laringofaríngeo. As características clínicas e patológicas, como a invasão da comissura anterior, subglote e cartilagem cricoide, estão mais associadas a invasão glandular.

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Introduction

Squamous cell carcinoma (SCC) of the larynx and hypopharynx has the potential to invade the thyroid gland. This invasion occurs mainly by direct extension due to the proximity of this gland to the pharyngolaryngeal region.¹⁻³ Despite this risk, the proposition of either partial or total thyroidectomy as part of the surgical treatment of all such cases remains controversial.²⁻⁶

The frequency of neoplastic involvement of the thyroid in advanced SCC of the larynx varies in the literature between 1% and 30%.^{4,5,7} According to these figures, thyroid surgery would be unnecessarily performed in approximately 75% of patients.³ Just by adding hemithyroidectomy to the surgical treatment of a laryngeal cancer increases the risks of hypothyroidism and hypoparathyroidism to 23–63% and 25–52%, respectively.⁸⁻¹⁰

A definition of the clinical and anatomopathological features associated with thyroid involvement would be of great

value in such cases. This definition could direct surgical treatment and reduce morbidity without impairing treatment objectives.^{6,11}

The aim of this study was to evaluate the frequency of thyroid gland invasion in patients with advanced SCC of the larynx and hypopharynx undergoing total laryngectomy (TL) or total pharyngolaryngectomy (TPL) associated with Hemithyroidectomy (HT) or total thyroidectomy (TT) and to determine whether clinical and pathological features are able to predict thyroid gland involvement.

Methods

A retrospective cross-sectional historical cohort study was conducted based on the review of charts and reports of the anatomopathological examination of surgical specimens. All patients undergoing TL or TPL in association with HT or TT for SCC of the larynx and hypopharynx in the period from January 1998 to July 2013 were included.

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