

Reinke's oedema and hypothyroidism: a correlation in an old woman

Abstract

A 71-year-old woman presented fatigue, hoarse voice, swelling of the face and eyelids and psychomotor slowdown on admission. She had history of smoking and she was postmenopausal. Lab studies revealed hypothyroidism. By the laryngeal examination we diagnosed Reinke's bilateral oedema. After 30 days of levotiroxina therapy we observed reduction of Reinke's bilateral oedema.

Keywords: thyroid, Reinke's oedema, larynx

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Background

Reinke's oedema is a degeneration of one or both vocal folds within Reinke's space.¹ It is still debated whether the thyroid function, among the causes of Reinke's edema, can play a role of some kind. We aim to propose a clinical case report discussing the possible implications of endocrine therapy for this condition.

Case presentation

A 71-year-old woman presented fatigue, hoarse voice, swelling of the face and eyelids and psychomotor slowdown on admission. She had history of smoking 30 cigarettes/die from 10 years old and she was postmenopausal. Physical examination was remarkable for swelling of the face and eyelids. Lab tests showed fT3 3.7 pg/mL (normal values: 2.0-3.5), fT4 4.2 pg/mL (9-17), TSH 15.4 µUI/mL (0.40 -4.50), TPOAb 88 µUI/mL. Thyroid structure was evaluated by ecography: it had small size, inhomogeneous ecostructure and two isoechoic nodule. By direct laryngoscopic examination we diagnosed Reinke's bilateral oedema and vocal-fold leukoplakia. The patient started therapy with levo-tiroxin 1.2 ml/die for seven days, than 2.4 ml/die for seven days than 3.8 ml/die. After 30 days she repeated lab test: fT3 4.0 pg/ml; fT4 8.4 pg/ml; TSH 12.5 µUI/mL. Clinically she had reduction of swelling of the face and eyelids and fatigue. She continued smoking 30 cigarettes/die. By the laryngoscopic examination we observed bilateral reduction of Reinke's oedema.

Discussion

Reinke's oedema of the vocal folds is a condition of unknown aetiology. Cigarette smoking and vocal abuse may contribute to its development.² Hypothyroidism has been described as an aetiological factor but the data in the literature is controversial due to the presence of small cases³⁻⁵ and observations with contradictory results.⁶ To date, no controlled study has been published confirming this association. In a study of 2006, Tsikoudas et al. said that thyroid function was not related to the development of Reinke's oedema. He said that thyroid

function was not related to the development of Reinke's oedema there was no evidence to support a relationship between hormone replacement therapy and the pathogenesis, via a possible pseudo-hypothyroidism effect, of Reinke's oedema.⁷ Recent studies suggest that the larynx is an organ with a plethora of oestrogen and thyroid receptors. Hormone receptors are found in the nucleus and cytoplasm of cells in the vocal fold, with a statistically significant difference in age and gender distribution. In the female larynx, both the mucosa and the vocal fold cover thicken with aging. In a 2003 Altman et al.'s work demonstrated that thyroid hormone receptors are present in both the male and the female human larynx.^{8,9} More recent experience has shown that thyroid hormone receptors play some role in the voice change that occurs in hypothyroidism, therefore with a local action of the thyroid hormones at the larynx level.¹⁰ In our patient instead we saw that After 30 days of levotiroxina therapy we observed reduction of Reinke's bilateral oedema. Furthermore clinically and lab test after 30 days gets better. These findings imply a role for thyroid hormone within normal laryngeal development, physiology, and function.

Conclusions

After 30 days of levotiroxina therapy we observed reduction of Reinke's bilateral oedema. These findings can support a relationship between hypothyroidism and Reinke's oedema.

Contributors

Magro VM and Boccalone E were the primary researchers and wrote the manuscript. Coppola C, Lanni VM and Caturano M provided research and editing assistance to the manuscript. Magro VM, Coppola C, Caturano M, Lanni VM and Boccalone E contributed to overall article design, data collection as well as revising and approving the manuscript.

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Conflict of interest

The author declares that there is no conflict of interest to disclose.

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