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ORIGINAL ARTICLE

Aetiology and Treatment of Vocal Fold Paralysis: Retrospective Study of 108 Patients☆

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KEYWORDS
Vocal fold paralysis;
Thyroplasty;
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Abstract
Objectives: To review the aetiology and treatment of laryngeal paralysis diagnosed at our hospital and to describe the available therapeutic options.
Methods: Retrospective review of medical records of 108 patients diagnosed with unilateral and bilateral vocal fold paralysis between 2000 and 2012, identifying the cause of paralysis and its treatment.
Results: Of the 108 cases analysed, 70% had unilateral vocal fold immobility and 30% bilateral immobility. The most frequent aetiology in both cases was trauma (represented mainly by surgical injury), followed by tumours in unilateral paralysis and medical causes in bilateral paralysis. Half of the patients with unilateral paralysis (38) were treated surgically, with medialization thyroplasty. In bilateral vocal fold immobility, the treatment consisted of tracheostomy in patients with threatened airway (40%). We planned to widen the air passage in 9 patients (27%), performing cordectomy in most of them.
Conclusions: The aetiology observed in our patients is similar to that described in the literature. In cases of unilateral vocal fold paralysis, we believe thyroplasty is the procedure of choice. In bilateral paralysis, it is possible to perform cordectomy in selected patients once the airway has been secured.

PALABRAS CLAVE
Parálisis cuerda vocal;
Tiroplastia;

Etiología y tratamiento de la parálisis laríngea: estudio retrospectivo de 108 pacientes

Resumen
Objetivos: Revisar la etiología y el tratamiento de la parálisis laríngea de los pacientes atendidos en nuestro centro y describir las opciones terapéuticas disponibles.

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Inyección intracordal;
Cordotomía

Métodos: Revisión retrospectiva de las historias clínicas de 108 pacientes diagnosticados de parálisis glótica unilateral y bilateral entre el año 2000 y el 2012, identificando la causa de la parálisis y el tratamiento realizado.
Resultados: De los 108 casos analizados, el 70% presentaron inmovilidad glótica unilateral y el 30% bilateral. La etiología más frecuente en ambos casos fue la traumática representada principalmente por lesión quirúrgica, seguida de la tumoral en parálisis unilaterales y de causas médicas en parálisis bilaterales. La mitad de los pacientes con inmovilidad unilateral (38) fueron tratados con cirugía consistente en una tiroplastia de medialización. El tratamiento de la inmovilidad glótica bilateral consistió en traqueotomía en pacientes con compromiso ventilatorio (40%). Se propuso ampliar el paso aéreo en 9 pacientes (27%), efectuando cordotomía en la mayoría de los casos.
Conclusiones: La etiología de nuestros pacientes es similar a la descrita en la literatura. En las parálisis unilaterales consideramos que la tiroplastia de medialización es el procedimiento de elección. En las bilaterales, una vez que se ha asegurado la permeabilidad de la vía aérea se puede plantear cordotomía en determinados pacientes.

Introduction

Vocal fold paralysis is defined as the loss of mobility of the real vocal fold secondary to disruption of the motor innervation of the larynx. It should be differentiated from fixation caused by infiltration of musculature or ankylosis of the cricoarytenoid joint.

The larynx is a specialised organ which regulates air flow during respiration, deglutition and phonation. These functions depend on the ability to modify the position of the vocal cords; if there is glottic incompetence, symptoms such as dysphonia, aphonia or breathy voice, aspiration, dysphagia and dyspnoea will present. The clinical symptoms will depend on whether the lesion is unilateral or bilateral, on the level of nerve involvement and on the final position adopted by the vocal cords.[1–3]

The causes of this disorder can be put into four groups: neoplasia (due to compression/infiltration of the vagus or recurrent nerve), trauma (surgical or non surgical), secondary to neurological or systemic disease, and idiopathic.[2]

Therapeutic approaches range from expectant management (observation), speech therapy, to different surgical techniques. The decision on treatment will depend on the clinical context of each patient.

The objective of this research study is to review the causes and the therapeutic management undertaken on the patients seen in our centre over the past 10 years.

Materials and Methods

We performed a retrospective review of 108 patients diagnosed with glottic paralysis in our department during the period from January 2000 to February 2012. Despite there not being a systematised register of the patients with this disease, we compiled the data on those for whom there was available information from electronic clinical records. We excluded cases of immobility deriving from tumours of the larynx or hypopharynx. We reviewed epidemiological data of unilateral and bilateral paralyses and focussed our analysis on the group of patients who were treated surgically, describing the techniques used and the postoperative results.

The approach adopted for cases of unilateral glottis immobility was observation with or without speech therapy for the first 6–12 months, offering surgery to those without clinical compensation (aspiration and/or poor voice quality). Type 1 thyroplasty was the most frequent surgery performed and intracordal injection was used far less frequently. Thyroplasty was performed under local anaesthesia with superficial sedation in the majority of cases, except for those patients who had undergone surgery during the same operation which compromised the integrity of the vagus or recurrent nerve (excision of vagal paragangliomas or cervical tumours with infiltration of the recurrent nerve) on whom surgery was performed under general anaesthetic. The technique used in our centre is as described in literature for type I thyroplasty, with the creation of a window in the thyroid cartilage and placement of Montgomery prosthesis® according to the manufacturer's indications. The intracordal injections were given under general anaesthetic.

For the bilateral paralyses the initial treatment objective was to ensure the viability of the airway, performing a tracheotomy on patients with ventilation limitation and periodic controls on patients who were tolerating the bilateral immobility. Cordotomy was offered to widen the airway in some patients. This procedure was performed endoscopically under general anaesthetic.

Results

Aetiology

Of the 108 patients studied, 75 (69.44%) presented unilateral and 33 (30.55%) bilateral glottic paralysis.

Unilateral paralysis was slightly more common in women (54%) and the left vocal cord was the most compromised (50 cases, corresponding to 67%). The main aetiology of unilateral immobility was trauma (45.33%), surgical injury caused by thyroidectomy being the most frequent (10 cases), followed by cardiac/aortic/carotid surgery (7 cases),