Acta Otorrinolaringol Esp. 2018;69(5):297–303

Acta Otorrinolaringológica Española

www.elsevier.es/otorrino

ORIGINAL ARTICLE

Paediatric Bilateral Vocal Cord Paralysis: Our Experience☆

María Laura Scatolini,* Hugo A. Rodriguez, Cinthia G. Pérez, Alejandro Cocciaglia, Hugo A. Botto, Mary Nieto, Lucas Bordino

Servicio de Endoscopía Respiratoria, Hospital de Pediatría Juan P. Garrahan, Ciudad Autónoma de Buenos Aires, Argentina

Received 27 June 2017; accepted 12 October 2017

KEYWORDS
Paediatric bilateral vocal cord paralysis;
Bilateral vocal cord paralysis;
Bilateral recurrent paralysis;
Tracheostomy;
Stridor

Abstract Bilateral vocal cord paralysis (BVCP) is the second most common cause of neonatal stridor. The aim of this study was to describe the demographic features, aetiology, comorbidities, and management of our patients with BVCP.
Material and methods: We conducted a retrospective review of the clinical charts of all patients diagnosed with BVCP seen at the Department of Respiratory Endoscopy between 2011 and 2015.
Results: 47 patients were included. Mean age at diagnosis was 1 month and male sex predominated (63%). The aetiology was congenital in 59% and acquired in 41% of the infants. The cause was most frequently idiopathic in the former group and secondary to postoperative injury in the latter. Overall, 42 patients (89%) required tracheostomy, without statistically significant differences between the causes. Of all the patients, 39% regained vocal-cord mobility; 44% of those with congenital BVCP, 31% of those with acquired BVCP and 62.5% with idiopathic BVCP. In five patients a laryngotracheoplasty was performed with a posterior costal cartilage graft and one underwent posterior cordectomy. All were decannulated. In one patient vocal-cord lateralisation was performed, avoiding tracheostomy.
Conclusion: BVCP was most commonly of congenital cause and was mainly idiopathic within this group of patients, with a slight male preponderance. A high percentage of patients required tracheostomy. A higher recovery rate of vocal-cord mobility was observed in idiopathic BVCP, which allowed for successful decannulation. In this series, decannulation was possible in all patients that underwent surgery; however, further studies with comparison of techniques and objective assessment of swallowing and phonation are necessary.

☆ Please cite this article as: Scatolini ML, Rodriguez HA, Pérez CG, Cocciaglia A, Botto HA, Nieto M, et al. Parálisis bilateral de cuerdas vocales en pediatría: nuestra experiencia. Acta Otorrinolaringol Esp. 2018;69:297–303.

* Corresponding author.
E-mail addresses: endorespiratoria@gmail.com, mlscatolini@hotmail.com (M.L. Scatolini).

PALABRAS CLAVE
Parálisis bilateral de cuerdas vocales en pediatría;
Parálisis cordal bilateral;
Parálisis recurrencial bilateral;
Traqueostomía;
Estridor

Parálisis bilateral de cuerdas vocales en pediatría: nuestra experiencia

Resumen La parálisis bilateral de cuerdas vocales (PBCV) es la segunda causa más frecuente de estridor neonatal. Nuestro objetivo es describir la demografía, etiología, comorbilidades y tratamientos instaurados.
Materiales y métodos: Revisión retrospectiva de las historias clínicas de pacientes con diagnóstico de PBCV de 2011 a 2015.
Resultados: Se incluyeron 47 pacientes. La edad media de diagnóstico fue un mes de vida, con predominio de sexo masculino (63%). El 59% fue por causa congénita y el 41% adquirida, por lo general idiopática y postoperatoria, respectivamente. Se realizó traqueostomía (TQT) en 42 pacientes (89%), sin diferencias significativas en relación con la causa. La recuperación de la movilidad cordal fue del 39% en toda la muestra, 44% en la congénita, 31% en la adquirida y 62,5% en la idiopática. A 5 pacientes se les realizó laringotraqueoplastia con injerto costal posterior y a un paciente cordectomía posterior. Todos fueron decanulados. A un paciente se le realizó lateralización cordal, evitando la TQT.
Conclusión: Las causas congénitas fueron las más frecuentes, en su mayoría idiopáticas. Se registró una leve predilección por el sexo masculino. Un alto porcentaje de pacientes requirieron de TQT. La tasa de recuperación de la movilidad es mayor en causas idiopáticas. Se decanularon todos los pacientes operados, pero se requieren trabajos con mayor número de participantes, comparación de técnicas y evaluación de la deglución y la fonación de forma objetiva.

Introduction

Bilateral vocal cord paralysis (BVCP) is the second most common cause of neonatal stridor after laryngomalacia. It accounts for approximately 10% of congenital laryngeal lesions.[1]

This pathological process is characterised by the absence of vocal cord mobility, which are found mostly in the paramedian, clinically expressed as inspiratory stridor, high-pitched in tone and normal crying, associated with different degrees of ventilatory effort which rise in situations of greater demand (feeding, crying).[2]

Causes may be congenital or acquired, approximately corresponding to 50% for each group.[2] As a result, the age of presentation is related with aetiology, and there are frequent manifestations of it since birth in congenital cases.

Among congenital causes different authors report a 40% frequency of central nervous system (CNS) diseases,[1,3,4] peripheral neuropathies, trauma from childbirth, neonatal hypoxia and cases where there is no apparent causes (idiopathic). The most common neurological congenital cause is Arnold Chiari malformation.[5]

Acquired causes which could cause this anomaly may include any neoplastic disease, trauma, ischaemic disorder or inflammatory disorder which affects the vagus nerve bilaterally from the cortex to the thorax. Surgical procedures and particularly cervical and thoracic ones, may be the cause of bilateral vocal cord paralysis.[5]

Less common causes include granulomatous, viral, bacterial, neurodegenerative and toxic disorders.

Lastly, the idiopathic group is a highly common cause. Around 50% of these cases regain mobility 2 years after diagnosis, with reported cases of recovery existing even after 5 years of follow-up.[6,7]

The main diagnostic tool is fibrolaryngoscopy with the patient awake to assess vocal cord mobility. This may also be performed under general anaesthesia in spontaneous ventilation, avoiding drugs which cause vocal cord immobility. Complete assessment of the airway is required to rule out associated lesions.[6]

With regard to treatment, priority is given to stabilisation of the airway. Lack of growth, apnoeic attacks and cyanosis require rapid medical attention. An assessment must be made as to whether treatment of the baseline disorder will reverse vocal cord immobility. If it does not TCT[2] is mandatory.

Due to the high rate of spontaneous recovery, in both idiopathic and iatrogenic cases, the recommendation is to wait until the child is 2 years old before performing any surgery on the laryngeal framework.[7]

Surgical procedures used may be endoscopic or open.[8]

The aim of this study is to describe the demographics, aetiology, comorbidities, established treatments and their applied results on patients diagnosed with bilateral vocal cord paralysis seen at the Department of Respiratory-Endoscopy of the paediatric hospital Juan P. Garrahan between 2011 and 2015.

Material and Methods

We conducted a descriptive, retrospective study with a review of the clinical charts of all patients under 14years of age diagnosed with BVCP, seen at the Department of