Child growth and Clinical outcomes after Supraglotoplasty in children with severe Laryngomalacia.

Enrique Gerardo Ortiz Hernandez, MD Role: Presenting Author
Ingrid Rubi Valladolid Dominguez, MD Role: Co-Author
Eloy Sanchez Hernandez, MD Role: Senior Author
Tabatha Dinorah Segura Hernandez, MD Role: Co-Author

Hospital Civil de Guadalajara
Fray Antonio Alcalde
Otorringolaringología y
Cirugía de Cabeza y Cuello

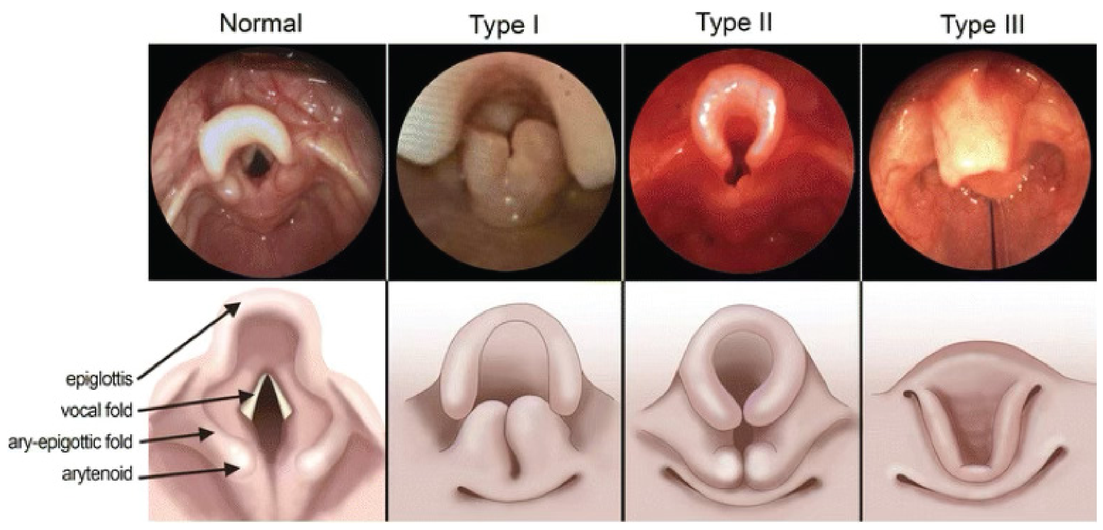
Introduction

Laryngomalacia is the most common cause of congenital stridor in newborns, accounting for approximately 60% of all congenital laryngeal anomalies. Symptoms appear after the first 2 weeks of life, in most cases are mild and resolve between 12 to 18 months of age. In case of moderate and severe condition, the patients don't gain weight, so this can be use as an indicator of severity and approximately 10% require surgical management that consists in Supraglottoplasty.

Methods

The study was carried out within the Civil Hospital of Guadalajara; third-level university hospital and reference center in western Mexico. During the period from March 2016 to July 2023, patients with laryngomalacia were studied clinically evaluated and with laryngeal endoscopy under general anesthesia and spontaneous ventilation, classifying the degree of laryngomalacia according to the Monnier classification. The procedure was performed under general anesthesia and orotracheal intubation administered by a pediatric anesthesiologist, under endoscopic vision with cold surgical technique with laryngeal microsurgery equipment by a pediatric otolaryngologist.

Subsequently, the patient was maintained with pediatric care for at least 24 hours previous to going home.



Results

Twenty five patients met the criteria and went to surgical management of supraglotoplasty for severe stridor, difficulty in feeding, growth retardation and obstructive sleep apnea. In all cases there was remission of the initial respiratory symptons, during follow-up, weight gain was evaluated finding it present in all patients (p= 0.02) as an indicator of success.

Table 1. Clinical evolution of patients undergoing Supraglotoplasty

Pre-surgical laryngeal collapse	n=19	100%
Post-surgical laryngeal collapse	n=1	5.3%
Trans/post-surgical complications	n=2	10.5%
Symptoms on discharge		
Low weight gain LWG	n=1	5.3%
Stridor	n=2	10.5%
Hypoxemia + stridor	n=1	5.3%
Hypoxemia + stridor + LWG	n=2	10.5%
No respiratory symptoms	n=13	68.4%
Pre-surgical weight (gr)	3,489 ± 1,203 (2,100 - 6,430)	
Post-surgical weight at 1 month (gr)	4,186 ± 1,198 (2,500 - 6,550)	
Weight gain at 1 month (gr)	697,328 ± (155 - 1,050)	

Table 1 Source: Data collection sheet. Statistical for the quantitative variables mean, DE, range.
For qualitative variables: frequency, percentage.

Table 2. Weight gain as a result of supraglotoplasty.

Pre-surgical weight (weight for age)	Low weight	Adequate weight
Men	N=13 (100%)	N=0 (0%)
Women	n=5 (83.33%)	n=1, (16.66%)
Post-surgical weight 1 month after surgery (weight for age)		
Men	N=11 (84.6%)	N=2, (15.38%)
Women	n=2 (33.33%)	n= 4 (66.66%)

Table 2 Source: Data collection sheet. Statistical for the quantitative variables mean, DE, range.
For qualitative variables: frequency, percentage.

Conclusion

Supraglotoplasty is an effective modality of treatment in patients with severe laryngomalacia. This study allowed us to evaluate their postoperative evolution and increase the experience in the management of this pathology and contribute to not waste time in take final decision to surgical treatment for this condition to increase the quality of life for the children.