Infantile supraglottic hemangioma: A case report

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Abstract
Hemangiomas of the airway are benign vascular lesions that can involve any site from the nares to the tracheobronchial tree. Most of these lesions are seen in the subglottic area in infants. Supraglottic infantile hemangiomas are very rare. We report a case of supraglottic hemangioma in a 2-month-old boy who had been admitted to our hospital with inspiratory stridor and dyspnea. The hemangioma involved the left arytenoid and aryepiglottic fold. A tracheostomy was performed, and the patient was followed up endoscopically every 6 months thereafter. The hemangioma disappeared when the child was 30 months old. Subsequently, a Montgomery T-tube was placed for 6 months to assist in maintaining normal breathing. The patient remains disease-free during ongoing follow-up. We also discuss the management strategies for infantile laryngeal hemangiomas.

Introduction
Hemangiomas are the most common head and neck tumors in infants. Hemangiomas of the airway can involve any site from the nares to the tracheobronchial tree. Laryngeal hemangiomas are benign vascular lesions that were first described in 1913 by Phillips and Ruh. Infantile laryngeal hemangiomas account for 1.5% of all congenital laryngeal anomalies. Most occur in the subglottic area. Supraglottic hemangiomas are rarely seen in infants. When they do occur, they are usually seen during the first 6 months of life. Affected patients present with abnormal breathing and other symptoms, which may include cough, dysphagia, vomiting, cyanosis, and hemoptysis. Clinical symptoms typically fluctuate, and there are periods of remission. The respiratory symptoms can be aggravated by agitation, excitement, or respiratory infection. Affected infants usually have a normal cry. These patients are often treated initially for presumed episodes of recurrent croup.

Like cutaneous hemangiomas, infantile laryngeal hemangiomas are characterized by three phases. The first phase is the proliferative phase, which lasts up to 18 months after birth. During the second phase, which lasts a few months, the tumor is stable. The third phase, which does not occur in every case, is marked by a spontaneous resolution of the lesion that takes place over a period of months or years.

Histologically, most hemangiomas are capillary; the remainder are cavernous or mixed. Diagnosis is usually based on the history and characteristic findings at endoscopy; a biopsy may be performed if there is still doubt. These lesions are typically unilateral, sessile, submucosal, and reddish-blue. A left-sided predominance has been reported, but hemangiomas may be bilateral, circumferential, or multiple.

In this article, we report a case of infantile supraglottic hemangioma.

Case report
A 2-month-old boy was brought to the Emergency Department of our hospital with dyspnea and coughing. He had been born during a normal spontaneous vaginal delivery following a normal pregnancy. His cry was normal, and his mother had not had any problem feeding him. The diagnosis was croup, and steroid and epinephrine treatment was started. The symptoms regressed, and the patient was discharged.

Five days later, the patient was brought back to the Emergency Department with inspiratory stridor and dyspnea. He was transferred to the Department of Otorhinolaryngology–Head and Neck Surgery and admitted. Laryngoscopy revealed the presence of a soft, red mass on the left arytenoid and aryepiglottic fold (figure 1). The glottic and subglottic areas were completely normal. The diagnosis of infantile supraglottic hemangioma was confirmed histopathologically by biopsy.

After consultation with the family, the patient was treated with tracheostomy only. The family members were taught how to take care of and change a tracheostomy cannula. The patient was followed up with endoscopic examinations every 6 months. By the time he had reached the age of
30 months, the lesion had almost completely disappeared (Figure 2). A Montgomery T-tube was inserted in order to return the patient to normal breathing and to force him to use his vocal folds so that speech abnormalities would not develop. After 6 months, the T-tube was withdrawn and decannulation was successfully accomplished. The patient has remained free of disease during ongoing follow-up.

Discussion

The natural course of infantile cutaneous hemangioma is characterized by rapid growth during the first year of life followed by a slow involution phase that can last from 5 to 7 years. Subglottic and supraglottic hemangiomas follow a similar course. Sebastian and Kleinsasser used only tracheostomy to treat infants with laryngeal hemangiomas, and they reported that the mean age of their patients at decannulation was 17 months.\(^4\)

The first goal of treatment, of course, is to maintain a patent airway. The second goal is to shorten the natural course of the disease, if possible. In the past, many treatment strategies have been attempted, including observation, tracheostomy, radiation therapy, laser surgery, steroid therapy, interferon therapy, cryotherapy, radioactive implants, embolization, surgical excision, and various combinations of these modalities.\(^5\)\(^-\)\(^8\) Because spontaneous regression is possible, a conservative approach with or without tracheostomy is appropriate for some laryngeal hemangiomas.\(^9\) Observation might be appropriate for patients with small lesions who have no significant symptoms, but large lesions may cause life-threatening airway obstruction and should be managed. Patients who undergo only tracheostomy must be followed closely because skilled nursing care and ongoing family education are essential in these cases. In our opinion, treatments that may cause serious side effects—such as subglottic stenosis or delays in speech and/or general development—should be used only if conservative approaches fail. We do not recommend radiation therapy because it can lead to the formation of secondary malignancy. Laser therapy also has serious side effects. For example, Sie et al noted that 20\% of patients treated with CO\(_2\) laser excision developed subglottic stenosis.\(^10\)

On the other hand, Kacker et al reported that treatment with the potassium-titanyl-phosphate (KTP) laser is associated with a lower risk of subglottic stenosis than is other laser modalities.\(^11\) Steroid therapy not only causes well-known side effects, but it also is not always effective. Cryotherapy is technically difficult and not routinely used because it might damage surrounding structures. Barring contraindications, surgical excision should be performed on patients whose tumors do not respond to conservative treatment.

In conclusion, congenital laryngeal hemangiomas should be suspected in an infant with airway obstruction. The likelihood of such a diagnosis increases in patients who also have a coexisting cutaneous hemangioma. Patients who undergo only tracheostomy require a good family support system. A successful outcome depends on the family’s being well informed about the disease and able to reliably practice home care. In this way, the side effects...