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INTERACTIVE CASE

Dysphonia and stridor in a pediatric patient

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Abstract

It aims to report an interactive case of a pediatric patient hospitalized with dysphonia, stridor and progressive respiratory effort, highlighting the differential diagnoses and treatment.

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A 9-year-old male patient with stridor, hoarseness, and wheezing was brought to the emergency unit by his mother. He had stable vital signs, with an oxygen saturation >97% in room air. The patient was in good general condition, hydrated, with rosy cheeks, acyanotic, with good peripheral capillary perfusion, and afebrile. Respiratory system findings were described as follows: evenly distributed vesicular breath sounds, inspiratory and expiratory wheezing, laryngeal stridor at rest, dysphonia, mild subcostal retractions, mild wishbone retractions, and nasal flaring. No alterations were seen in the cardiovascular, abdominal, genital and neurological systems. The patient was previously healthy, had never been intubated and did not have comorbid conditions or allergies. He first had these symptoms three months prior to arriving at our service. He had been taken to other services on several occasions, and was always sent home with a prescription of corticosteroids or anti-inflammatory drugs. He stayed for a week in another hospital, where was diagnosed and treated for asthma. At the time, he was discharged with a prescription of salbutamol. Since he still had dyspnea, odynophagia and coughing, his mother decided to take him to another pediatric emergency service immediately after he was discharged.

1 - What are the main diagnostic possibilities?

A. Laryngomalacia.
B. Subglottic hemangioma.
C. Laryngitis.
D. Laryngeal papilloma.
E. asthma.

X-rays of the chest ordered after initial assessment did not reveal any alterations; X-ray images of the lateral cervical spine showed upper airway obstruction.

2 - What is the method of choice to further investigate the case?

A. Contrast-enhanced computed tomography.
B. Laryngoscopy.
C. Magnetic resonance imaging.
D. PA and lateral view chest x-ray images.
E. Lung function tests.

For purposes of diagnostic investigation, an evaluation was requested from an ENT, who recommended and carried out a nasofibroscopy examination, which revealed a lesion with a papillomatous appearance obstructing the glottic lumen (see video at https://youtube.com/shorts/--1bxA0wQpJY?feature=share).

3 - What is the recommended initial therapeutic approach?

A. Intravenous antibiotics.
B. Clinical monitoring.
C. Surgical resection.
D. Propranolol.
E. Pulse steroid therapy.

Unilateral resection of the papilloma was performed; bilateral removal was not chosen to avoid synechiae. The specimen was sent to the pathologist, who established a diagnosis of viral papilloma.

4 - What is the prognosis for this condition?

A. Good, since this is a self-limiting condition.
B. High probability of recurrence.
C. If managed conservatively, there is a high probability of malignancy.
D. Malignant transformation is common.

After the procedure, the patient showed no signs of respiratory effort and was discharged. He returned for outpatient follow-up with the ENT team, with plans for a new resection.

Question 1:

Laryngeal papillomatosis is a relatively rare disease in general practice, but it is the most common benign neoplasm in children. Caused by HPV, particularly subtypes 6 and 11, it is characterized by the presence of exophytic and recurrent proliferative lesions on the airway mucosa, especially in the larynx.[1,2] Diagnosis is generally made between two and five years of age, a year after the onset of symptoms, which in 75% of children show before the age of five years.[3]

In general, it involves first the commissure and anterior third of the vocal folds, and may later affect all portions of the larynx, in some cases reaching the trachea, bronchi and lung parenchyma. There are usually multiple lesions, cases of a single lesion are rare. In advanced cases, the multiple vegetative lesions converge, occluding the glottic lumen, and often extend to the structures of the supraglottis and subglottis.[2]

The first warning symptom is dysphonia. The voice of affected patients are described as hoarse or weak; alterations are persistent and develop gradually, without periods of normal voice. Stridor is another warning sign that appears mainly during inspiration.[3] Other symptoms include snoring and sleep apnea, chronic cough, recurrent respiratory infections, dysphagia and growth retardation.[2,3]

Answer: D.

Question 2:

Clinical signs and symptoms can be challenging. Patients are often thought to have asthma, vocal fold nodules, croup, allergy or bronchitis before a definitive diagnosis is reached. Attention must be given to recurrent or worsening respiratory symptoms, which do not follow the natural history of common diseases and fail to improve with conventional therapies.[3] Delays in diagnosis

may lead to upper airway obstruction. The airways are gradually obstructed as the papillomas grow, and patients develop shortness of breath and acute inspiratory stridor.[1,3]

Disease transmission is not fully understood; however, sexual and vaginal transmission during pregnancy has been discussed, since children may acquire the disease in the birth canal, after contact with condyloma acuminata.[1]

Answer: B.

Question 3:

Management, either conservative or surgical, aims to provide a safe airway, improve voice quality, reduce the extent of the disease and increase the time interval between surgeries. Antibiotics, hormones, electrocoagulation, cryotherapy, radiation, ultrasound, surgical excision, autogenous vaccine, intralesional application of cidofovir and microdebriders have been proposed to treat lesions and are often used as adjuvants. However, none has been sufficiently effective in controlling multiple papillomas and recurrent disease. Conventional treatment continues to be the removal of lesions with a cold forceps or laser vaporization. The latter ensures good hemostasis, especially in friable lesions.[3,4]

Answer: C.

Question 4:

In the current scenario, there is no curative treatment for the disease. In Brazil, vaccination against HPV was introduced in 2014; however, there is no data in the literature about the number of children with laryngeal papillomatosis who were vaccinated or referred for vaccination.[1,3]

Answer: B.

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