Psychogenic stridor: A cause of acute upper airway obstruction

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A 17-year-old boy was seen in the emergency department with signs and symptoms of acute upper airway obstruction, closely resembling epiglottitis. Immediate management consisted of induction of general anesthesia with spontaneous ventilation. Because no organic pathologic process was found, and in combination with subsequently known psychosocial stressors, a diagnosis of psychogenic stridor, a conversion disorder, was made. Conversion disorders may be seen by the busy family practitioner or pediatrician and are frequently underdiagnosed.

(Key words: Psychogenic stridor, conversion disorder, acute epiglottitis, adolescent medicine)

Upper airway obstruction (UAO) is a life-threatening condition. Rapid diagnosis and treatment are essential to prevent significant morbidity resulting from hypoxemia. We present a case of acute UAO in an adolescent which was caused by an entity known as psychogenic stridor, a conversion disorder.

Report of case

A 17-year-old boy was seen in the emergency department with respiratory distress. He was in his usual state of good health until several hours earlier when he started having difficulty breathing while reading in his room at home, after school. His past medical history was unremarkable, and he had had no recent illness. At examination, the patient was

sitting and leaning forward, with audible inspiratory stridor, copious amounts of drooling, and excessive use of his accessory respiratory muscles. His temperature was 38.1°C; heart rate, 130 beats per minute; respiratory rate, 36/min; and blood pressure, 130/84 mm Hg. He could not speak and was in obvious acute distress. His oxyhemoglobin saturation as measured by pulse oximetry (SpO_2) while breathing through a facemask set to deliver a fraction of inspired oxygen (FI_{O_2}) of 1.0 was 98%. Lung sounds appeared normal but difficult to hear because of the inspiratory stridor. A diagnosis of epiglottitis was entertained, and the patient was immediately brought to the operating suite. On arrival there, the patient continued to exhibit stridor and distress, but he now became comfortable in the supine position. His SpO_2 while breathing a combination of 70% oxygen and 30% helium was 100%. We performed an inhalational induction of general anesthesia using halothane and nitrous oxide. Once the patient was unconscious with spontaneous ventilation maintained, we were able to easily override the patient's ventilations using positive pressure via an anesthesia facemask. Vecuronium bromide (Norcuron),

a neuromuscular blocking agent, was administered, and the patient's ventilations were easily controlled without evidence of UAO. Direct laryngoscopy and rigid bronchoscopy revealed no abnormalities of the larynx or trachea. While the patient was awakening, vocal cord motion was assessed by flexible bronchoscopy and noted to be normal. The patient exhibited mild stridor in the postanesthesia care unit and was transferred to the pediatric intensive care unit (PICU) for further observation.

It was noted in the PICU that the patient's stridor lessened markedly while he slept. Taken together with the findings on bronchoscopy, the patient's condition was diagnosed as psychogenic stridor. Further questioning of the patient's parents revealed that he presently lived with his father, a psychologist, and a stepmother. The patient had recently been caught snorting methylphenidate (Ritalin) at school and was temporarily suspended. He had been seeing a therapist on a regular basis because of difficulties at home and declining school performance.

The stridor lessened the following day, and the patient was discharged to home in good condition. According to the adolescent medicine specialist, the patient has not appeared for follow-up visits.

Discussion

Acute UAO is associated with many diagnoses (Figure 1). When an organic cause is absent, a diagnosis of psychogenic stridor can be entertained. Synonyms for this entity include functional inspiratory stridor, paradoxical movement of the vocal cords, episodic laryngeal dyskinesia, functional laryngeal obstruction, factitious asthma, emotional laryngeal wheezing, and Münchausen's stridor.¹

Psychogenic stridor is a form of conversion disorder, which is defined as "a physical (motor or sensory) symptom that occurs after stress or conflict, that is not intentionally produced, and that is without evident somatic cause, resulting in significant impairment."¹ Conversion disorders are distinguished from

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✓ Checklist

- ☐ Allergy/anaphylaxis
- ☐ Factitious/psychosomatic laryngeal disorder
- ☐ Foreign body aspiration
- ☐ Hereditary angioedema
- ☐ Infection
 - epiglottitis
 - croup
 - retropharyngeal abscess
- ☐ Laryngospasm
- ☐ Neuromuscular disorders
 - hypocalcemia
 - bulbar palsy
 - tetanus
 - myasthenia gravis
- ☐ Trauma
- ☐ Tumors
- ☐ Vocal cord dysfunction/paralysis

Figure 1. Differential diagnosis of acute upper airway obstruction. (Adapted from Lund DS, et al: *Am J Emerg Med* 1993;11:400-402.)

malinger or factitious disorders, which provide patients secondary gain when a diagnostic label is given to them for an illness, as in Münchausen's syndrome.² Conversion disorders are recognized in both sexes in childhood, but after puberty, they are more common in females.³ In children and adolescents, risk factors include social tension, migration, lower socioeconomic status, physical or sexual abuse, and parental depression, to name a few.³ Hodgman³ suggests that busy pediatricians commonly see conversion disorders, yet a formal diagnosis is rarely made. *Figure 2* lists commonly seen conversion symptoms in adolescents.

The diagnosis of psychogenic stridor must be one of exclusion, once all known organic causes are ruled out. Flow-volume loops have been used to differentiate psychogenic stridor from organic illness. Although many patients demonstrate normal flow-volume loops, some demonstrate patterns consistent with extrathoracic obstruction caused by ab-

✓ Checklist

- **Gastrointestinal**
 - ☐ Abdominal pain
 - ☐ Gas distension
 - ☐ Globus (lump in throat)
 - ☐ Dysphagia
- **Cardiovascular**
 - ☐ Chest pain
 - ☐ Palpitations
- **Respiratory**
 - ☐ Hyperventilation
 - ☐ Dyspnea
 - ☐ Wheezing
 - ☐ Stridor
 - ☐ Cough
- **Genitourinary**
 - ☐ Frequency
 - ☐ Retention
- **Sensory**
 - ☐ Headache
 - ☐ Anesthesia
 - ☐ Dizziness
 - ☐ Blindness
 - ☐ Deafness
- **Motor**
 - ☐ Weakness
 - ☐ Fatigue
 - ☐ Paralysis
 - ☐ Gait disturbances
 - ☐ Mutism
- **Neuropsychiatric**
 - ☐ Amnesia
 - ☐ Stupor
 - ☐ Pseudoseizures
 - ☐ Syncope
 - ☐ Somnolence

Figure 2. Common conversion symptoms. (Source: Hodgman CH: *Pediatr Rev* 1995;16:29-34.)

normal paradoxical vocal cord motion. Most patients have had psychogenic stridor ultimately diagnosed by the combination of lack of organic cause and demonstration of resolution of symptoms with supportive therapy or sedation.

Severe attacks have been treated with endotracheal intubation or tracheostomy.⁴ However, once a diagnosis of psychogenic stridor is made, treatment is largely supportive.¹ Distraction, reassurance, encouragement to breathe

through the nose, coughing, and sedation have been helpful in alleviating episodes. Biofeedback training, supportive psychotherapy, and stress management have also been used. Speech therapy combined with biofeedback has been especially helpful in training patients to learn how to relax their laryngeal muscles. Hodgman³ emphasizes that it is important to maintain interest in the patient whether or not symptoms abate. Convincing the patient that his or her symptoms are not organically based is usually ineffective.

Comment

We describe a case of psychogenic stridor, a conversion disorder, that presented as acute UAO closely resembling acute epiglottitis. Psychogenic stridor should be considered in the differential diagnosis⁵ of acute UAO when an organic cause is absent.

References

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