

## ORIGINAL PAPER

# ACUTE OBSTRUCTIVE LARYNGITIS IN CHILDREN

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### SUMMARY

Acute obstructive laryngitis should be treated appropriately by the ENT doctor and the pediatrician. The most common is the subglottic type, caused mostly by a viral infection. If properly treated the disease is healed within a few days. A fast differential diagnosis, followed by applying up-to-date ways of treatment have saved numerous lives in most cases of acute laryngeal obstruction that affected children. Corticosteroids have proven to address this illness in a swift and positive manner.

**Key words:** acute laryngitis, urgency, children

### RÉSUMÉ

#### *Laryngite aiguë obstructive chez les enfants*

La laryngite aiguë obstructive doit être traitée d'une manière appropriée par le médecin ORL et le pédiatre. Le plus commun est le type sous-glottique, causé principalement par une infection virale. Si elle est correctement traitée la maladie est guérie en quelques jours. Un diagnostic différentiel rapide, suivi de l'application des moyens modernes de traitement ont sauvé de nombreuses vies dans la plupart des cas d'obstruction laryngée aiguë qui affligeaient les enfants. Les corticostéroïdes ont prouvé leur adressabilité pour traiter cette maladie d'une manière rapide et positive.

**Mots-clés:** la laryngite aiguë, urgence, enfants

### INTRODUCTION

Laryngitis is a common pathology for children, in its acute form. The disease is part of the respiratory tract infections which are the primer cause in child mortality [1]. Acute laryngitis should therefore be taken seriously when dealt with in children. For that reason when the laryngitis is accompanied by respiratory obstruction the treatment will be a multidisciplinary one, at the border between pediatrics and ENT. The start of acute laryngitis is typically sudden and self-limited [2].

The factors that make children more prone to acute laryngitis are numerous, though the most important are having infections of a respiratory nature, including the common cold, and chronic adenoiditis. The simple acute laryngitis has a brutal debut within a few hours with fever accentuated by inspiratory dyspnea, hoarseness, barking cough and hyper salivation. Usually, children with acute laryngitis refuse to eat, speak or move. Fever however is

not a stipulation of acute laryngitis as the acute laryngitis with wheezing involves allergic grounds but the child is afebrile, with nocturnal wheezing and choking coughs with apnea and cyanosis of short duration [3, 4]. The child has a good general condition between crises.

Most of the acute laryngitis cases are however subglottic. More than 85% of acute laryngitis is of this kind [5]. They appear suddenly with acute dyspnea and inspiratory barking cough induced by subglottic edema [6]. The most common etiology of this condition is of a viral nature, but there are germs, especially Haemophilus Influenzae, which may lead to a bacterial infection. Haemophilus Influenzae was discovered and presented in literature as common in cultures of the blood collected from children with severe acute laryngitis. The symptoms associated with these cases were the fast onset of the disease, and its short lifespan, major swelling in the epiglottis, fever and shock [7].

Acute laryngitis is most common in children between 6 months and 4 years old. They tend to be rare as the child grows older. The etiology of the disease shows a

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prevalence in boys with a ratio of 3:1. Clinical statistics show that the frequency is higher during spring and autumn [5]. The evolution of acute laryngitis is usually short with convalescence of only a few days. Hoarseness slowly disappears as the disease is healed.

### MATERIAL AND METHODS

Most cases of acute laryngitis are shown to the ENT doctor or the pediatrician by the parents only after the symptoms are causing a noticeable dent in the quality of life of the child patient. Therefore the most common reasons why parents come to the ENT doctor when the child has acute laryngitis are hoarseness, wheezing or a whistling noise when breathing and also fever. Some patients only show up in the emergency room of the ENT hospitals or clinics when a blue stain shows around the lips of the child (cyanosis). This is a sign that the body does not get enough oxygen and emergency treatment is required.

Other children are taken to the pediatrician instead. Most common symptoms with which parents take the children with acute laryngitis to the pediatrician are when the child develops a fever of over 38.5 degrees Celsius, but lower than 40 degrees, when there is a noticeable difficulty in breathing, or if a whistling noise is present when breathing. Breathing hard and fast and when breathing movements appear abnormal in the thorax, the child is usually taken quickly to the pediatrician. These are signs that the child makes a great effort to breathe and is urgently necessary to see a doctor.

Even though the x-ray examination is not frequently used for a better diagnosis, there are instances where a plain lateral x-ray could prove valuable if done with safeguards not to upsurge the respiratory obstruction. The reason why x-ray examination is used is to realize if there is a bronchia or pulmonary involvement. Anterior-posterior neck x-ray demonstrating the "steeple sign" will show a subglottic narrowing (fig. 1). Laryngoscopy with small rigid endoscopes permitted precise identification of acute laryngitis, predominantly in children presented with unusual symptoms. Moreover, endoscopic evidence of swelling degree was useful in the judgment if artificial airway was necessary. Airway endoscopy is a key step forward in the approach on acute laryngitis (fig. 2).

### DISCUSSIONS

The cases that show a severe respiratory difficulty are neither common nor uncommon in acute laryngitis. Nevertheless, a traditional case management should be arranged by an appropriately prepared team of medical personnel. Even if the obstruction of the respiratory tract is rare, when it happens, a short-term nasotracheal intubation should be made, accompanied by antibiotics. If the medical case is severe, a tracheostomy may also be the best suitable course of action.

ENT literature shows that therapy with steroids usually

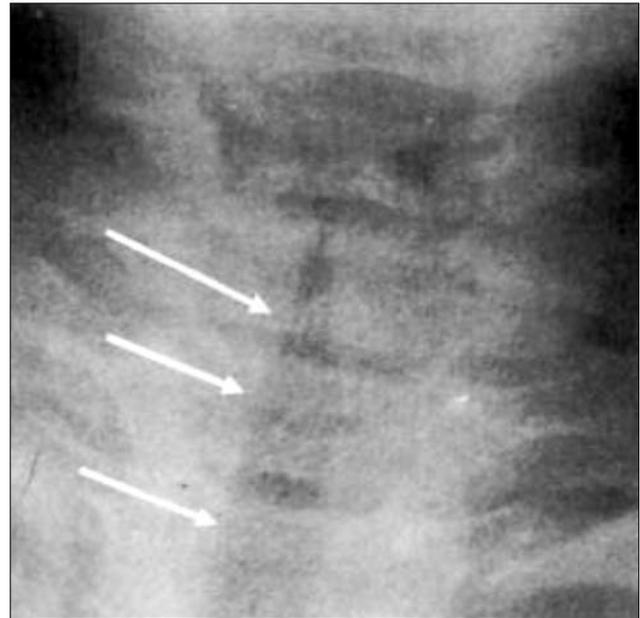


Figure 1 - X - Ray Examination [8]



Figure 2 - Laryngoscopy Examination [8]

leads to avoiding the need for tracheotomy [9]. Hydrocortisone therapy shows a massive improvement if given intravenously in cases of subglottic acute laryngitis in children.

There is clear evidence that the use of corticosteroids has made an enormous clinical improvement by improving the patient's quality of life by reducing the severity of the symptoms and hospitalization time [7]. The result is materialized by less patients admitted to the ICU, less time spent in the emergency service and need to associate with other drugs [10]. Nasotracheal intubation is preferred to tracheotomy. When deciding which path of treatment is more appropriate, the rapid course of the evolution of acute

laryngitis has to be taken into account.

There is a clear need for a multidisciplinary approach of ENT and pediatrics in acute laryngitis, making a transfer to a pediatric or ENT hospital usually needed. For the prevention of further episodes of acute laryngitis an adenoidectomy is necessary as the chronic adenoiditis is a prime risk factor in the onset of the disease. Therefore, parents are usually advised to let their children have the adenoidectomy as there is medical evidence that shows the fact that children have stopped having acute obstructive laryngitis after this surgery [5].

### CONCLUSIONS

Acute obstructive laryngitis in children treatment should be approached in a multidisciplinary way, taking into account both perspectives of ENT and pediatrics. The subglottic acute laryngitis is the most common type. The use of corticosteroids improved the treatment of acute laryngitis, having an immense effect on the way this illness is managed in today`s time. X-Ray and laryngoscopy examination show valuable insight for the correct diagnosis of the disease, though it is not absolutely needed. In order to prevent additional occurrences of the illness, an adenoidectomy is often recommended.

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