The Enlarged Epiglottis

F. B. Watts, Jr. and T. L. Slovis
Departments of Radiology and Pediatrics, Children's Hospital of Michigan, Wayne State University School of Medicine, Detroit, Michigan, USA

Abstract. Three children are presented with radiologic evidence of epiglottic enlargement who did not have acute epiglottitis. The radiological and clinical differentiation of these entities (angioneurotic edema, foreign body, and chronic epiglottitis) are discussed.

Key words: Enlarged epiglottis - Epiglottitis - Angioneurotic edema

It is accepted practice to confirm a clinical suspicion of acute epiglottitis with a lateral neck radiograph. However, the presence of a large epiglottis on the radiograph does not always mean that the patient has acute epiglottitis. Recently we have seen three patients in whom the radiographic changes resembled those of acute epiglottitis, but the patients had different diseases. This communication describes these cases and the clinical and radiographic differences.

Case 1 - Angioneurotic Edema

This seven year old black boy presented with difficulty in breathing. He had a sore throat one day prior to admission. Intermittently throughout his life, he has had “allergies”, urticaria and “swellings” of his hands, arms and groins. Upon admission he had a swollen left hand.

Physical examination revealed an afebrile child in moderate respiratory distress. He was bending forward. There was no dysphagia, and his voice was well preserved. There was swelling and tenderness of the left side of his neck, swelling of the left pharyngeal wall, and a swollen, non-tender left hand. The clinical impression was that of airway obstruction, and a lateral neck radiograph (Fig. 1) revealed enlargement of the epiglottis, as well as marked enlargement of the entire retropharyngeal space. These findings lead to the clinical diagnosis of angioneurotic edema.

The patient was hospitalized in the Intensive Care Unit and was given steroids, epinephrine and antihistamines. Over the next 24 hours, his air hunger ceased, and within three days, the lateral neck radiograph was normal. Complement studies revealed deficiency of C1 esterase inhibitory activity [1]. The family is currently being studied.

Fig. 1. Lateral neck radiograph with enlargement of the epiglottis and aryepiglottic folds. In addition, there is thickening of the retropharyngeal space.
Comment

Despite having a large epiglottis, there was also swelling of the retropharyngeal space which is not seen in the classic syndrome of acute epiglottitis. Certainly the history of intermittent urticaria, cutaneous edema and the clinical presentation with the absence of dysphagia helped to determine the true cause of this patient's epiglottic enlargement.

Case 2 - Irritation by a Foreign Body

This 14 month old white boy was admitted to Children's Hospital of Michigan with a chief complaint of drooling. Five days prior to admission, the infant ingested a red cedar twig. He could not breathe after putting this twig in his mouth, but stimulation by his mother promoted respiratory efforts after one-half to one minute of apnea. He had no real distress over the four day period following this episode, but on the day of admission, he had considerable drooling.

Physical examination on admission revealed an afebrile, 14 month old child in no respiratory distress. He had constant drooling from the mouth, but otherwise physical examination was within normal limits. The clinical impression was a foreign body in the esophagus, and a chest X-ray and lateral neck film were obtained. The epiglottis on the lateral neck film was enlarged (Fig. 2). Laryngoscopy was performed, and the red cedar twig was found at the base of the left aryepiglottic fold. It was extracted in two pieces. Although considerable edema persisted for several days after the foreign body was removed, the child was clinically well and was discharged on the fourth hospital day free of all symptoms.

Comment

Irritation of the epiglottis by a foreign body and other noxious agents can readily lead to edema and epiglottic enlargement. Dysphagia without stridor was present, and this combination would be unusual with acute infectious epiglottitis.

Case 3 - "Chronic" Epiglottitis

This 19 month old black boy presented with a four week history of progressive stridor following an upper respiratory infection. The stridor was worse when he was lying down. He had no difficulty swallowing. There was no history of foreign body aspiration and no allergic history. When excited, he exhibited subcostal and supraclavicular retractions. A lateral neck radiograph (Fig. 3a) revealed marked enlargement of the epiglottis and aryepiglottic folds, consistent with a diagnosis of acute epiglottitis.

Comment

Persistent inflammatory enlargement of the epiglottis and aryepiglottic folds is very rare. Since the clinical picture was not typical of acute epiglottitis, biopsy was necessary to exclude other causes such as an epiglottic cyst or an epiglottic abscess.