

Acute epiglottitis in the adult

M. L. NAVARRETE, Ph.D., P. QUESADA, Ph.D., M. GARCIA, M.D., J. LORENTE, M.D. (Spain)

Abstract

Acute epiglottitis in the adult is a rare disease, which has shown an appreciable increase since the sixties and in our locality since 1984. We present a review of the cases registered in our hospital, analyzing their aetiology, evolution and treatment. The disease is most likely to be suspected in the presence of any patient having a sudden dysphagia, especially if he shows symptoms of an acute infection and a lack of oropharyngeal pathology.

Introduction

Acute epiglottitis or supraglottitis in the adult is an infrequent infection in relation to the condition of the same name in children (Barson *et al.*, 1985) and, as in the latter, it may prove to be serious and even fatal because of the important obstruction of the laryngeal opening which may occur. The most frequent aetiological agent is type B *Haemophilus influenzae*, which on the other hand, is related to the most important clinical complications. Other bacteria concerned are *Streptococcus pneumoniae*, *Staphylococcus aureus* and even *Klebsiella pneumoniae* (Berthiaume and Pien, 1982), *Candida albicans* (Cole *et al.*, 1987), *Bacteroides melanogenicus* and *Mycobacterium tuberculosis*.

The diagnosis of the condition is basically clinical (Devita and Wagner, 1986). Although in children the clinical severity requires intubation or tracheostomy, in the adult that is not always the case.

Material and methods

We have carried out a retrospective survey on the cases of epiglottitis admitted to our department during the last 12 years. There were 58 patients, among them 46 males and only 12 females. The diagnosis of acute epiglottitis was made according to clinical criteria and

laryngoscopic examination. All were submitted to a complete otolaryngological examination, blood analysis and, in 32 cases, a bacteriological study.

Results

The age of those affected, ranged from 7 to 74 years old. It must be noted that in our department, patients are admitted starting from the age of seven. The distribution of ages into decades shows that 45 per cent of the patients were between the third and the fifth decade and only 15 per cent were between 7 and 10 years old. The remainder were distributed uniformly. The average incidence was around three cases per year until 1984. Those numbers were tripled in 1984 and 1985, showing since then a global increase of cases in relation to the earlier years. In the last two years, we have observed a substantial increase with regard to the incidence, with nine cases in 1990 (Fig. 1). In the same way, it was observed that there was a clear seasonal variation with the greatest frequency in autumn and summer. November was the month with the highest number of cases, 10/58 (Fig. 2). A study of the signs and symptoms, with which the patients presented, demonstrates that 80 per cent were related to dysphagia or/and odynophagia, though during their stay at the hospital, all patients suffered those

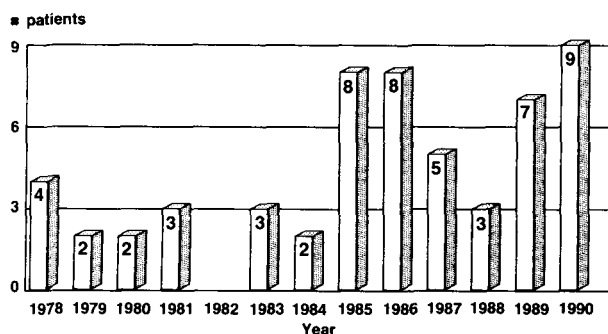


FIG. 1
Epiglottitis: yearly incidence (58 cases).

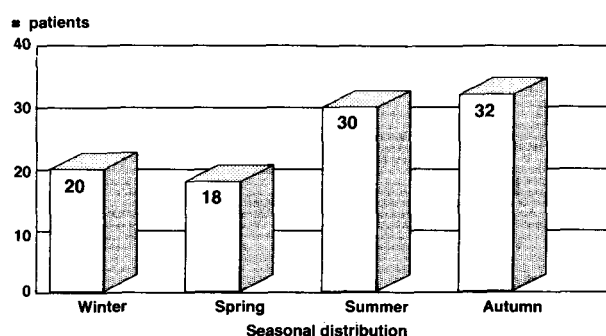


FIG. 2
Epiglottitis: seasonal incidence (58 cases).

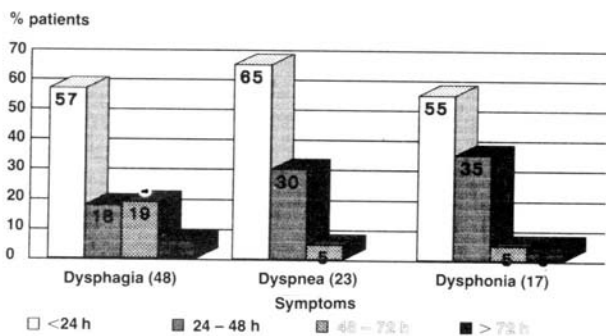


FIG. 3 Epiglottitis: chronology of symptoms (58 cases).

symptoms. The second most frequent sign was fever which was present in 40 per cent of cases. Dyspnoea was also found in 40 per cent of the patients; it was serious in seven cases, necessitating a tracheostomy in five and one endotracheal intubation in one.

Dysphonia appeared in only a third of our patients. On the other hand 28 per cent of the patients who initially had dysphagia as their sole symptom, later complained of dyspnoea (24 per cent) and dysphonia (22 per cent). The association of dysphagia and dysphonia affected six per cent of the patients. Other signs and symptoms of less frequency were an irritative cough and local oedema, as well as regional discomfort. If each main symptom is considered individually, in relation to its period of development, prior to admission, it can be seen that 70 per cent of the patients who showed dyspnoea were admitted in the emergency department during the first 24 hours of its appearance (Fig. 3). In the same way, 60 per cent of the patients who showed dysphagia came to the hospital on the first day that they developed a swallowing problem.

The preadmission period of dysphonia was distributed uniformly between the first and second day.

The examination findings associated with inflammatory oedema of the epiglottis, and detected in all cases, were lingual tonsillitis in 30 per cent, acute tonsillitis in 10 per cent and Reinke's oedema in five per cent of the total.

It is particularly to be noted that in three cases supraglottitis was caused by an infection associated with *Mycobacterium tuberculosis*, which started in the following manner: three male patients, without any previous pathology, and who had been diagnosed as acute epiglottitis were unsuccessfully treated for more than a week with antibiotic and anti-inflammatory drugs. Suspecting a specific infection, endolaryngeal microsurgery

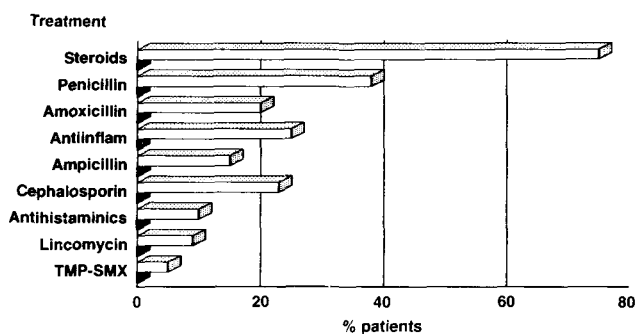


FIG. 4 Epiglottitis: medical treatment (58 cases).

was performed and a biopsy carried out, which confirmed the suspicion of tuberculosis. Those patients recovered with anti-tuberculous treatment, and a later study did not show disease elsewhere. In 40 per cent of the cases, a pyrexia up to 39°C was found, while 23 per cent of the patients were febrile and the remaining 37 per cent were afebrile.

Seventy-three per cent of the cases showed leucocytosis, with counts ranging from 10,000 to 25,000/cm³; only eight per cent had had a higher white cell count. Similarly, 20 per cent of the patients were found with normal white cell counts, three of whom had tuberculosis. Bacterial cultures were performed for 32 patients, 20 specimens were taken from the pharynx and 12 were blood cultures. Only two of the latter turned out to be positive for *Haemophilus influenzae*.

With regard to management of the airway, only six patients needed instrumental intervention, five tracheostomies and one intubation. The rest of the patients were cured by medical treatment. All the patients received treatment with steroids and antibiotics. Intravenous penicillin was the most frequently used drug, followed by amoxycillin, ampicillin, and the least used cephalosporins (Fig. 4). The hospitalization period was less than four days for 60 per cent of the patients and for only 12 per cent longer than seven days (Fig. 5).

Discussion

Acute epiglottitis in the adult is a rare infection, the incidence of which has risen markedly since the sixties. In our cases this rise has been mainly since 1984. We think this is due to a better recognition of the disease, which allows it to be diagnosed in more patients. Its incidence is more frequent in the second half of the year, in our part of the world.

We compared our cases with other series in the literature, and found that the largest was reported by Deeb with a total of 80 patients over seven years, who were admitted to three hospitals in Washington (Deeb *et al.*, 1985). The distribution of sexes and ages in our series was similar to others, 2.3 males for every female. In all series dysphagia is the most frequent symptom. In our cases, it appeared in 80 per cent at the onset of the disease though subsequently all showed it. Dyspnoea affected 40 per cent of our patients, against 25-33 per cent in other series (Ossof *et al.*, 1980; Deeb *et al.*, 1985; Warshawski *et al.*, 1986). That fever was present only in

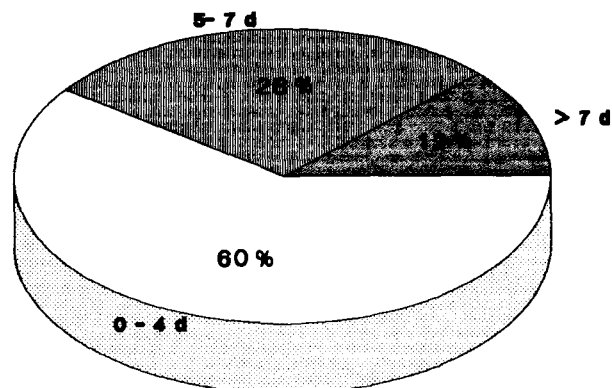


FIG. 5 Epiglottitis: hospitalization period (58 cases).

40 per cent of our patients, was due to the fact that many of them were not seen until the post-acute phase, when they were apyrexial and had already received antibiotics. The white cell counts were not related to the seriousness of the case or to the pyrexia. Nevertheless, 80 per cent showed a leucocytosis, as might be expected. In our cases, acute epiglottitis and lingual tonsillitis were concomitant in 30 per cent of patients. These circumstances might back up the claim that the cause of lingual tonsillitis is associated with epiglottitis (Ossof *et al.*, 1980). The most frequent aetiological agent, is type B *Haemophilus influenzae*, though the blood culture is not always positive and the local swab is seldom diagnostic.

The initial treatment is basically determined by the degree and evolution of the dyspnoea (Ossof *et al.*, 1980; Odetoyinbo, 1986; Warshawski *et al.*, 1986; Hodge and Ganzel, 1987). Some of the series, have different criteria for intervention in the airway: thus in a number of them, a tracheostomy was carried out, where there was initial stridor and no response to the medical treatment (Odetoyinbo, 1986). In our series surgical treatment was applied either in the presence of initial and intense stridor or in those patients whose dyspnoea worsened in spite of receiving the correct medical treatment. Recently, 52 per cent of *Haemophilus influenzae* strain have been sensitive to ampicillin and 57 per cent to amoxycillin; resistant to chloramphenicol in 31 per cent. Presently, in strains resistant to penicillin or if doubt remains, second generation cephalosporins: cefuroxime, cefonicid, or cefamandole, are used. When it is possible to administer treatment orally, the association

of amoxycillin and clavulanic acid reveals only 2 per cent resistance (Warshawski *et al.*, 1986; Hodge and Ganzel, 1987).

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Address for correspondence:

M. L. Navarrete,
Roca Umbert 5,
3^o 1^o. Hospitalet,
08907 Barcelona,
Spain.

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