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Research Article

EPIGLOTTITIS _ EPIDEMOLOGY AND CLINICAL PRESENTATION IN KASHMIRI POPULATION- A RETROSPECTIVE STUDY

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A B S T R A C T

Introduction Acute epiglottitis is an acute inflammation of the upper respiratory airway that can causes airway obstruction**.** Acute epiglottitis is often observed in clinical practice in the field of otolaryngology; there is a possibility of rapid airway obstruction, which may be fatal, and therefore, this disease requires a prompt and appropriate treatment. **Aims and Objectives:** To evaluate the clinical profile, correlation of WBC Counts on 1st day of admission with Laryngeal findings. **Material and Methods:** A retrospective study was conducted on patients with acute epiglottitis from January 2015 to December 2019. **Results**: There were 24 patients, 17 (70.83%) were males and 7 (29.17%) were females. The mean age was 35 years (range 10–70 years). 5 (20.83%) patients were diabetic .The duration of symptoms before hospitalization range from 1 to 7 days with mean was 3days. The main presenting symptoms were painful deglutition, sorethroat, fever, muffled voice and dyspnoea. Laryngeal findings on the day of admission, mildepiglottis swelling (I) was the most common in 13 patients (54.16%), followed by moderate epiglottis swelling (II) in 7 patients (29.16%), and severe epiglottic swelling (III) in 4 patients (16.66%). Hospitalization duration was 4 to 15 days (mean of 8 days). Hematological examinations were performed on the first and fifth day of hospitalization. The mean number of white blood cells (WBC) counts on the first day were 16239/μL (12580 to 22650/μL) and the mean number of WBC counts on the fifth day were 5548/μL (2,000–15,000/μL) and there was a significant decrease compared to the day of admission $p < 0.05$ **Conclusions:** Acute epiglottis is a rear but life threatening condition which can be treated well with timely diagnosis and adequate treatment by antibiotics and steroids. WBC counts on the first day of admission was statistically seen to be co-related very well with severaity of disease and patients with WBC counts ≥ 20,000/μl on the day of admission needs critical care monitoring to avoid respiratory compromise. We have reported that (1)upper airway obstructive symptoms during the initial visit, (2) airway obstructive symptoms within 1 day from onset and (3) Katori and Tsukuda's classification III (4) WBC count ≥ 20,000/μl at the time of admission are the indicators for airway management

INTRODUCTION

Epiglottitis, or supraglottitis, is an acute bacterial infection of the supraglottis that affects primarily the epiglottis but includes other sites such as the lingual tonsil, aryepiglottic folds and false cords, which results in the symptom complex of sore throat, stridor, odynophagia, muffled voice and high fever.[1] It is a serious infection which may be fatal secondary to sudden airway obstruction.

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The incidence in adults is estimated to be 1–9 cases per 100,000 and 6–23 per 100,000 in children.[2] An increasing incidence, a seasonal increase in autumn and a male predominance has been described in adults but these findings are not consistent.[3 4 5] Epiglottitis affects all age groups. The main difference in children compared to adults is that acute epiglottitis progresses very rapidly and compromises the airway. There has been a marked decrease in paediatric epiglottitis since the introduction of vaccination against Haemophilus influenza type b (Hib vaccine) in 1985 to prevent childhood meningitis. Prior to the introduction of vaccination, the ratio of epiglottitis between children and adults was

estimated to be 3:1.7 This ratio has been much reduced and even reversed where the Hib vaccine has been used[6 7] Before the introduction of vaccinationin Sweden, epiglottitis was declining in children but remained stable in adults at 2.3/100,000 per year[7]

Acute epiglottitis is often observed in clinical practice in the field of otolaryngology; there is a possibility of rapid airway obstruction, which may be fatal, and therefore, this disease requires a prompt and appropriate intervention. Many patients are ameliorated by conservative treatment alone; thus, in many cases, it is difficult to determine the necessity and timing of airway management. Herein, we retrospectively analyzed inpatients with acute epiglottitis who were treated in our department.

MATERIALS AND METHODS

This was a retrospective study conducted in Department Of ENT H&NS in SKIMS Medical college and hospitals Bemina Srinagar on 24patients with acute epiglottitis who were admitted in our Department from January 2015 to December 2019. Patients who are diagnosed with acute epiglottitis were hospitalized on the same day, and a cephalosporin antibiotic (1.5 g of ceftrixone/sulbactam twice a day), a steroid (100 mg of hydrocortisone succinate once or twice daily), an intravenous crystalloids, and adrenaline nebulisation (1: 10,000 dilution) were set as the basic course of treatment.

As per the Medical Records, age, sex, number of days from onset to consultation, presence or absence of diabetes, symptomatology laryngeal findings, and hospitalization duration were analyzed. In each case, a subjective assessment of the degree of laryngeal airway obstruction was made by the examiner. In addition, a hematological examination (white blood cell count, was performed on the day of admission and on 5th day of hospital stay , and the numerical values were compared. The diagnosis was based on finding observed on clinical examination. Regarding laryngeal findings, according to the classification proposed by Katori and Tsukuda, cases of mild epiglottic swelling in which the total length of the bilateral vocal cords could be observed were classified as I, cases of moderate epiglottic swelling in which the full length of the vocal cords could not be observed but at least half could be observed were classified as II, cases of severe epiglottic swelling in which less than half of the vocal cords could be observed were classified as III, cases with no arytenoid edema were classified as A, and cases with arytenoids edema were classified as B.[8]

RESULTS

There were 24 patients, 17 (70.83%) were males and 7 (29.17%) were females. The mean age was 35 years (range 10–70 years). 5 (20.83%) patients were diabetic .The duration of symptoms before hospitalization range from 1 to 7 days with mean was 3 days. The main presenting symptoms were painful deglutition, sore throat, fever, muffled voice and dyspnoea. Laryngeal findings on the day of admission, mild epiglottis swelling (I) was the most common in 13 patients (54.16%), followed by moderate epiglottis swelling (II) in 7 patients (29.16%), and severe epiglottic swelling (III) in 4 patients (16.66%) . Hospitalization duration was 4 to 15 days (mean of 8 days). Hematological examinations were performed on the first and fifth day of hospitalization. The mean number of white blood cells (WBC) counts on the first day were 16239/μL (12580 to 22650/μL) and the mean number of WBC counts on the fifth day were 5548/μL (2,000–15,000/μL) and there was a significant decrease compared to the day of admission $p < 0.05$

Table 1 Age and Sex wise distribution

Age in years	Male	Female
1- 20	5	1
21 -40	7	4
41- 60	3	2
61- 80	2	0
Total	17(70.83%)	7(29.17%)

Table 1 showed males were more effected than females, and maximum no of patients were in the age group of 21- 40.

Table 2 Clinical Presentations

Clinical Presentation	Patients (n)
Painful deglutation	22(91.66%)
Sore throat	22(91.66%)
Fever	22(91.66%)
Muffled voice	17(70.83%)
Dyspnoea	3(12.5%)

Table 2 showedPainful deglutition sore throat, and fever were main presentation of epiglottis.

Table 3 Laryngeal findings on the day of admission

Laryngeal findings		Number of patients
Mild Epiglottic swelling (I)	A	10 patients (41. 66 %)
	B	03 patients (12.5%)
Moderate Epiglottic swelling (II)	A	6 patients (25%)
	B	01 patient (04.16%)
SevereEpiglottic swelling (III)	A	2 patients (8.33%)
	B	2 Patients (8.33%)

Table 4 WBC count on the first and fifth day of admission

WBC counts	On the day of admission	On the 5th day of admission	P. Value
Mean WBC counts	**16239/μl**	**5548/μl**	**<0.05**

Table 5 corelation of WBC counts and laryngeal findings on the day of admission

WBC counts	laryngeal findings	Total no patients
12000-15999/μl	**Grade I**	**13 (54.16%)**
16000-19999/μl	**Grade II,III$_a$**	**9 (37.51%)**
20000-23999/μl	**GradeIII$_b$**	**2 (8.33%)**

DISCUSSION

Historically, acute epiglottitis has been a disease of childhood.[9] However, while the incidence of childhood epiglottitis declined after the introduction of the HiB vaccine in 1985, the incidence of reported cases of acute epiglottitis in adults has showna steady rise. The current study also showed a relatively high number of cases of epiglottises in adults. The reasons for the apparent rise in adult acute epiglottitis are unclear. Most adults are not vaccinated against Homophilesinfluenzatype B, as was the case in our patients.

The results of the present study are consistent with those of past reports (Tanaka S etal)[10]with regard to the fact that mean age was 35 years. Kikuchi etal reported that duration of symptoms before hospitalization was 2 to 3 daysand in the present study similar results (mean of 3 days) were noted.

The prevalence of diabetes in the present study was 5 (20.83%) which was almost same as the proportion of people in Japan who were "highly suspected to have diabetes" (12.1%) reported by the Ministry of Health, Labor and Welfare Ministry in 2016. It has been reported that the history of diabetes is related to aggravation rather than the onset of acute epiglottitis. [11] In the present study, one of five diabetic patients required emergency airway management after airway obstruction. Therefore, in diabetic patients , it seems necessary to consider the potential of rapid progression and aggravation of acute epiglottises.

The white blood cell count on the day of admission and on the fifth day of hospital stay were compared, and there was a significant decrease compared with the first day of admission . This suggests that the condition of many patients improved with conservative treatment, and cephalorains antibiotic and steroid administrations were efficacious in our department. In the present study, a white blood cell count of ≥20,000/μL identified as factors correlated with the airway management group. Because patients with high inflammatory response values are considered to be severe, it is considered to be one factor in the determination of airway management. Furthermore, Kikuchi and Nishida[12] reported that the mean white blood cell count in two patients requiring tracheotomy was 20,325/μL. In the present study, the classification system of Katori and Tsukuda,[8] which classifies laryngeal findings into an epiglottic swelling and arytenoid edema, was used. In the present study, 4 (16.66%) of the 24 patients presented with severe epiglottic swelling ($III_{),}$out of which airway management was performed in 1 case.

It had been observed that (1)upper airway obstructive symptoms during the initial visit, (2) airway obstructive symptoms within 1 day from onset and (3) Katori and Tsukuda's classification III (4) WBC count ≥ 20,000/μl at the time of admission are the indicators for airway management.

CONCLUSION

Acute epiglottis is a rear but life threatening condition which can be treated well with timely diagnosis and adequate treatment by antibiotics and steroids. WBC counts on the first day of admission was statistically seen to be co-related very well with severaity of disease and patients with WBC counts ≥ 20,000/μl on the day of admission needs critical care monitoring to avoid respiratory compromise. We have reported that (1) upper airway obstructive symptoms during the initial visit, (2) airway obstructive symptoms within 1 day from onset and (3) Katori and Tsukuda's classification III (4) WBC count ≥ 20,000/μl at the time of admission are the indicators for airway management

Conflict of Interest

None declared.

Patient Consent

Informed consent for publication of clinical details was obtained from all patients.

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