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Original Research Article

A Study of Clinical Profile of Paediatric Stridor in Tertiary Medical College

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ABSTRACT
Introduction: *Condition causing stridor in paediatric patient can range from minor illness to life threatening disorders. Proper diagnosis and evaluation is mandatory for timely intervention.*
Aim of the study: *The objective of this study is to determine the aetiological profile and management of paediatric patient with stridor attending otorinolarynglogy department in Government Mohan Kumaramangalam Medical College Hospital, Salem.*
Materials and Methods: *This is an observation study of 50 cases of stridor in infants and children below 12 years presented in the department of Government Mohan Kumaramangalam Medical College Hospital, Salem, Tamilnadu over a period of 2 years from Jan 2014 to Feb 2016.*
Results: *In our study of 50 cases of stridor,common age group of presentation was less than 2 years (62%) with male preponderance (60%), Common etiology was croup(56%), laryngomalacia(26%),foreign body aspiration(8%), angioneurotic edema (6%), and post extubation stridor (4%) Out of 50 casses 76% presented with acute complaints and 24% presented with chronic complaints.*
Keywords: *Laryngomalacia, Croup, Stridor,foreign body aspiration.*

Introduction

Clinician must differentiate types of noisy breathing such as stridor, stertor, snoring and wheezing. Each suggests different airway pathologies. All these are signs of airway obstruction at different level.

Stridor is a word derived from Latin word "Stridulus" which means creaking, whistling or granting noise. Stridor is an abnormal, harsh, high pitched inspiratory sound produced by turbulent airflow through partially obstructed airway of laryngeal airway or extra thoracaic trachea [1], [2].

Stertor is described as low-pitched inspiratory sound originating from nasal or nasopharyngeal obstruction [1].

Materials and Methods

The prospective observational study was carried out in the department of otorhinolaryngology in Government Mohan Kumaramangalam Medical

College Hospital, Salem, Tamilnadu for a period of 2 years from Jan 2014- Feb 2016. 50 patients with stridor with age group of 0-12 years were included. Complete workup was done with history taking, clinical examination and confirmation with telelaryngoscopy and bronchoscopy. Most of these cases were managed conservatively and periodical follow-up was done.

Data analysis was done using Microsoft Excel Software.

Observations and Results

In our study, out of 50 cases majority of cases were in the age group of less than 2 years (62%) followed by 4-12 years (24%) and 2-4 years (14%) (Fig.1).

In our study, out of 50 cases male children (60%) were more commonly affected than female children (40%) with male:female ratio (1.5:1).

In our study, 28 (56%) Children were diagnosed as croup. Laryngomalacia -13cases(26%) was the next commonest cause of congenital anomaly in the study followed by 4 (8%) cases of foreign body aspiration, 3 (6%) cases of Angioneurotic edema and 2 (4%) cases of post extubation stridor (Table 1).

Of all the symptoms stridor(100%) was the main symptom in all cases followed by cough (98%), Tachypnoea (92%), Retraction (84%), Nasal flaring (60%), Fever (48%), Hoarseness (24%), (Table 2)

Out of 50 cases, 76% cases presented with acute symptoms and 24% cases presented with chronic symptoms. (Fig.3)

Majority of cases having inspiratory stridor (96%) followed by biphasic stridor in 4% of cases. (Fig.4)

Out of 28 children that were diagnosed with croup, 18 were male, 10 were female children. All were treated with steroid and nebulised with epinephrine according to westly croup score and were controlled of all respiratory infections.

Laryngomalacia was a next common cause which was the commonest congenital anomaly in our study, 11 were males and 2 were females. Laryngoscopy was done in all 13 cases.

Foreign body aspiration was seen in 4 cases of which 3 were males and 1 female. All were carefully examined clinically and confirmed with bronchoscopy and foreign body removed under GA. 3 cases presented with angioneurotic edema and they were treated with antihistamine, systemic steroids and relieved of symptoms. 2 cases were diagnosed as post-extubation stridor and were treated conservatively.

Table 1 Incidence of Cases

S.No	Etiology	No.of Patients N=50	Percentage
1.	Croup	28	56%
2.	Laryngomalacia	13	26%
3.	Foreign body aspiration	4	8%
4.	Angioneurotic edema	3	6%
5.	Post extubation stridor	2	4%

Table 2 Distribution of signs and symptoms

Signs and Symptoms	No.of Patients N=50	Percentage
Stridor	50	100%
Cough	49	98.0%
Tachypnoea	46	92.0%
Retraction	42	84.0%
Nasal flaring	30	60.0%
Fever	24	48.0%
Hoarseness	12	24.0%
cyanosis	0	0%

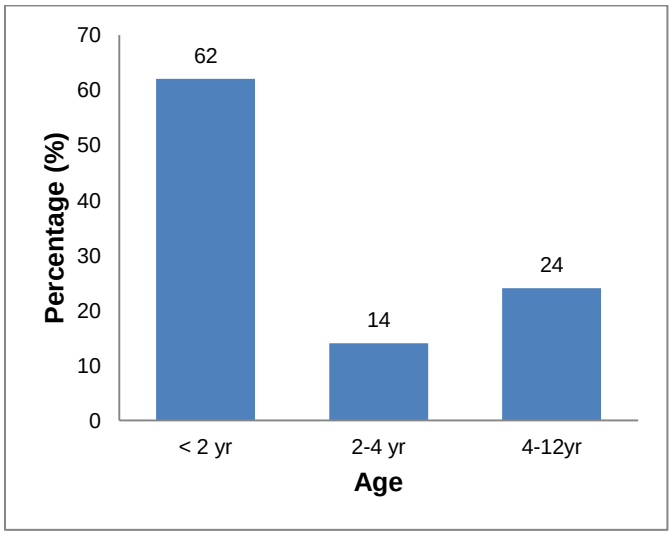
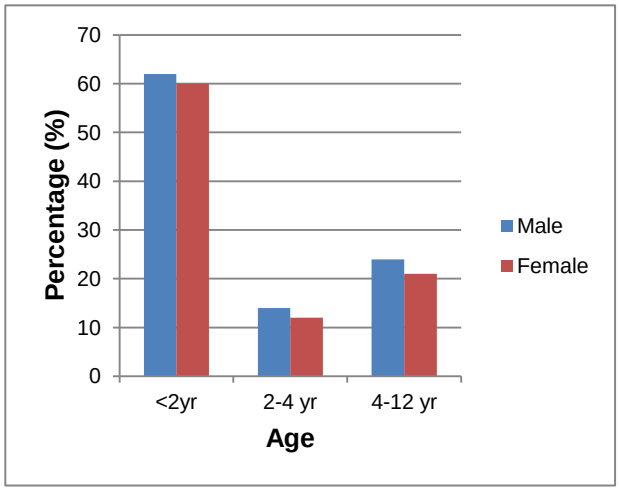


Fig.1 Age distribution

Fig.2 Age and sex distribution



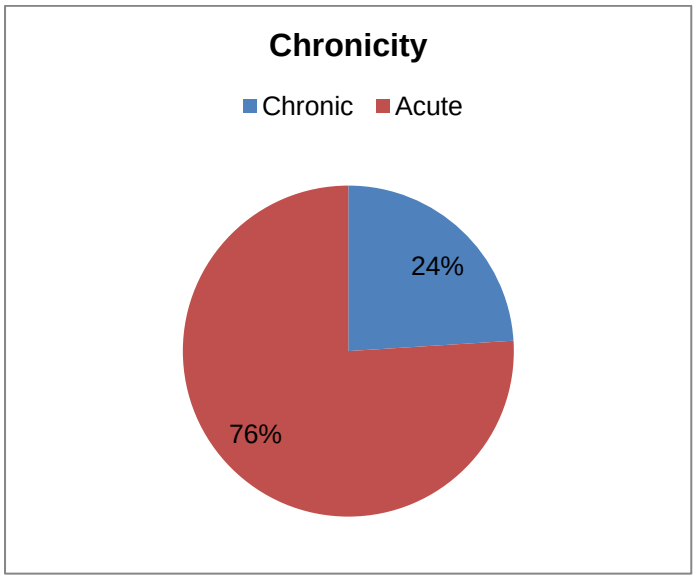


Fig.3 Distribution of chronicity of symptoms

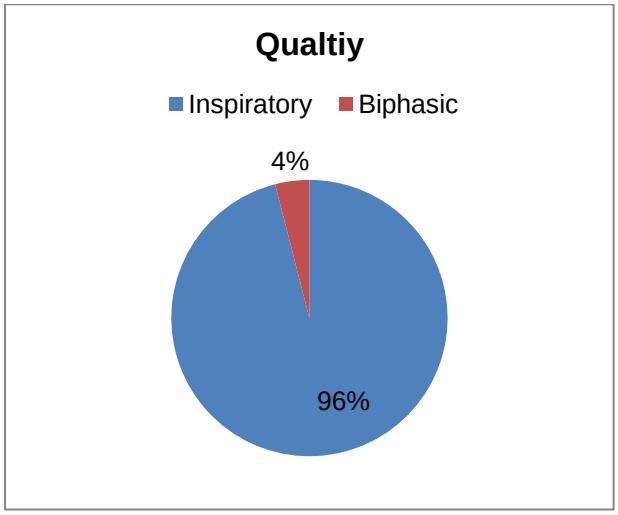


Fig.4 stridor quality with respiratory cycle

Discussion

Evaluation of stridor in a child begins with proper history taking, clinical examination followed by laryngoscopy and bronchoscopy examination is needed. Out of which cases needing resuscitation were treated immediately [5].

In our study, acute cases outnumbered chronic cases. Rupa V, Raman R et al[6] showed similar results. Among acute causes croup is the commonest cause of stridor with more male preponderance Robert H. Stroud and Norman R. Friedman et al [7] observed similar results.

According to whestly croup score moderate cases of croup were treated with oral and Intramuscular dexamethasone. Russell K, Wiebe N and Saenh A et al[8] supported this study. Severe cases were treated with epinephrine nebulization and Intramuscular dexamethasona. Bjornson C, Russell K and Vandermeer B et al[9] supported this study.

Laryngomalacia was the commonest cause of chronic stridor with male preponderance. Holinger LD et al[10] supported the same study. Foreign body aspiration was seen in 4 cases which presented with inspiratory stridor, cough and respiratory distress. Study done by Abhishek Jaswal, Utpal Jane et al[4] also showed similar results.

Angioneurotic edema was seen in 3 cases with male preponderance. This was supported by De Silva 1 L et al [11]. Post extubation stridor was seen in 2 cases with male preponderance. They were treated with adrenaline nebulization and parental steroids. Regina Grigolli Cesar et al [12] supported this study. In follow-up of these cases 80% were free of stridor and in 20% severity was decreased.

Conclusion

Majority of the cases with stridor presented below the age of 2 years with common etiologies of croup (56%) followed by laryngomalacia (26%) with male preponderance.

Stridor must be recognized as a symptom of upper airway obstruction which may be minimal to life

threatening in severity. Diagnosis should be made earlier and effective management should be given. Delay in diagnosing may lead to sever morbidity. Progression of airway obstruction may be rapid in cases of infectious etiology. So prompt diagnosis and therapeutic maneuvers are mandatory.

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