



Study of Stridor in Adults

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Introduction

Stridor is an abnormal, harsh, high pitched, turbulent musical breathing sound caused by partial obstruction in the larynx/tracheobronchial tree and is usually associated with dyspnea. stridor indicates an emergency and should always evaluate immediately.¹

Stridor is an Emergency Condition. Its indicates an obstruction of the airway. Stridor in adult a manifestation of airway obstruction, due to growth larynx, larynx edema etc.

It is more common in males than females. Growth larynx was once one of the most common causes of airway obstruction.

Early detection of stridor is very important to avoid the complications. Some symptoms such as Dyspnea, excessive use of respiratory muscles and intercostal recession are important warning signs that the airway obstruction is severe enough to compromise the airway ventilation.

There are several important signs and symptoms which a physician should look out for increasing severity of the airway obstruction. The warning signs of stridor are presence of drooling, tripod

position, cyanosis, decreased conscious level, respiratory distress, silent chest, and episodes of apnoea.²

It is important that a proper history taking and physical examination are the important key in assisting the physician in the diagnosing and management of stridor in the emergency department. Delay or misdiagnose the cause of the stridor may lead to mismanagement of the patient and causing very serious morbidity.³

Signs and symptoms associated with stridor in adults:

Symptoms: Dyspnea, Dysphagia, change in voice, neck swelling, hoarseness, cough, pain in throat.

Signs: use of accessory muscles during respiration, swelling of lips and tongue in anaphylaxis reaction /acid dye ingestion/thermal burn, floor of mouth raised, tripod position etc.

Stridor may be heard during inspiration, expiration or both.

Inspiratory stridor is often produced in the obstructive lesions of supraglottis or pharynx e.g. retropharyngeal abscess.

Expiratory stridor is produced in the disease involving thoracic trachea, Bronchus e.g. growth tracea, tracheal stenosis

Biphasic stridor is seen in disease involving of glottis, subglottis and cervical trachea e.g. laryngeal papilloma, vocal cord paralysis and subglottic stenosis.⁴

Common causes of stridor in adults

Trauma to neck- Road Traffic Accident (RTA), strangulation, ludwigs angina, parapharyngeal abscess, Tumours of larynx, vocal cord paralysis, thyroid malignancy, thermal burns, acid dye ingestion, tetanus.

India is another developing country that prevailing lower SES, smoking and drinking habits, poor general health of population, environmental factors that increase the incidence of stridor.

Stridor is different from **stertor** which is a low pitched snoring type sound. It is generated at the level of nasopharynx and oropharynx.

Materials & Methods

The study entitled to “**Study of Stridor in Adults**” conducted in the department of ENT in government Medical College for a period of 1 year from January 2018 to December 2018. A total of 50 cases presenting with STRIDOR in the ENT emergency were taken for study.

Inclusion Criteria

- All patients presenting with stridor at ENT emergency, medicine and surgery ICU.

Exclusion Criteria

- Patients with snoring, nasal obstructive diseases.

Results

Table No. 1: Incidence of stridor in Different Age Groups

Age group (years)	No. of cases	Percentage
16-20 year	04	08%
21-25 year	04	08%
26-30 year	04	08%
31-35 year	02	04%
36-40 year	07	14%
41-45 year	04	08%
46-50 year	04	08%
51-55 year	05	10%
56-60 year	04	08%
61-65 year	03	06%
66-70 year	04	08%
71-75 year	01	02%
76-80 year	01	02%
81-85 year	02	04%
86-90 year	01	02%
>90 year	-	-
TOTAL	50	100%

In the present table, the peak incidence of stridor was found in the age group between 36-40 years (14%) followed by 51-55 year (10%)

Table No. 2: Sex wise distribution of patients

Sex	No. of cases	Percentage
Male	35	70%
Female	15	30%
Total	50	100%

The incidence of stridor was observed to be more in males (70%) than females (30%).

Table No. 3: Types of stridor

Type of stridor	No. of Cases	Percentage
Inspiratory	33	66%
Expiratory	11	22%
Biphasic	06	12%
Total	50	100%

Most common type of stridor is inspiratory 66% followed by expiratory 22% least common is biphasic 12%.

Table No. 4: Duration of stridor

Time Period	No. of Cases	Percentage
<1 Wk	35	70%
1-12Wks	08	16%
3 Months – 6 Months	06	12%
>6 Months	01	02%
Total	50	100%

In our study 70% patients were having stridor for duration <1 week, 16% patients were having stridor for duration 1-12 weeks, 12% patients were having stridor for duration 3 months to 6 months, only 2% patients were having stridor for duration >6 months.

Table No. 5: Clinical presentation of patients with stridor

Clinical presentation	No. of cases	Percentage
Noisy breathing	50	100%
Difficulty in breathing	45	90%
Difficulty in swallowing	23	46%
Change in voice	20	40%
Swelling in neck	15	30%
Pain in throat	10	20%
Cough	35	70%
Fever	20	40%
Hoarseness of voice	15	30%

In our study noisy breathing 100% was the most common associated complain followed by 90% difficulty in breathing and least common associated complaint was hoarseness of voice (15%).

Table No. 6: Causes of stridor

Causes of stridor	No. of cases	Percentage
Growth larynx	20	40
Ludwigs angina	10	20
Larynx edema (burn & acid ingestion)	08	16
Larynx trauma	06	12
Ca thyroid	02	04
Tetanus	01	02
Vocal cord palsy	01	02
Retropharyngeal abscess	01	02
Parapharyngeal abscess	01	02
TOTAL	50	100

Among various causes of stridor growth larynx was the most common cause of stridor 40%, followed by ludwigs angina 20%, and least common causes were vocal cord palsy 1%, Retropharyngeal abscess 1%, parapharyngeal abscess 1%, tetanus 1%.



Table No. 7: Treatment of stridor

Causes of stridor	Management
Growth larynx	Emergency Tracheostomy and direct laryngoscopy and biopsy
Retropharyngeal abscess	Incision and drainage
Larynx edema	Tracheostomy
Larynx trauma	Tracheostomy
Ludwigs angina	Incision and drainage, tracheostomy

In our study Tracheostomy done in 50%, Direct laryngoscopy and biopsy taken in 20%, incision and drainage 12%, conservative management 10%, medical management 9%

Discussion

The present study entitled “**Study of Stridor in Adults**” at Government medical college. Study period from January 2018 to December 2018 on 50 patients with stridor.

Age Distribution

In our study it was observed that most of the patient belong to age group 36-40 years (14%) followed by 51-55 year 10%, 41-50 years (10 years) Overall age distribution :-36-55 year age is 40 %.

Sex Distribution

Out of 50 patients 70% male and 30% female. male : female ratio is 1.7:1. also found that stridor was more common in males. More common in Male because of different habits eg. smoking, chewing tobacco, alcohol intake which is not common in females in india.

Duration of Stridor

In our study 70% patients were having stridor for duration <1 week followed by 16% patients having stridor for duration 1-12 week, 12% patients having stridor for duration 3 months -6 months, only 2% having stridor for duration >6 months.

Types of Stridor

In our study most common type of stridor is inspiratory 66% followed by expiratory 22% and Biphasic 12%.

Causes of Stridor

Adult patients 50 cases

Most common is growth larynx 40% followed by ludwigs angina 20%, larynx edema 16%, larynx trauma 12%, vocal cord palsy 2%, ca thyroid 4%, tetanus 2%, epiglottitis 2%, parapharyngeal abscess 2%.

In comparison with the following studies:

Vasileios zochios (2015)⁵

In this study total cases are 249 with 99 publications.

In this study commonest systemic cause of stridor is neurological 26% followed by psychogenic stridor in 21.2%, vocal cord disease 10.8%, esophageal and autoimmune 7.2%, primary airway lesion 6.8%, thyroid and parathyroid disease 5%, infectious, inflammatory and immunodeficiency 3.6%, exercise in elite athletes 7.6%, thoracic aortic aneurysm 1%.

In our study most common cause of stridor in adult is growth larynx 40% followed by ludwigs angina 20%, larynx edema 16%.

- This study is done in developed country (U.K.) So patient presents early and undergo early diagnosis and treatment. Where as in our country the patients remain undiagnosed till they develop respiratory distress, change in voice and other symptoms.
- Growth larynx is most common in our study because carcinoma larynx is more common in our country as compare to other countries. Carcinoma larynx is the ninth and seventh most common cause of cancer. In males in Asia and India respectively.
- India is another developing country prevailing lower SES, tobacco chewing, smoking and drinking habits, poor general health of population, environmental and different social customs definitely increase the incidence of carcinoma larynx.
- A higher incidence of growth larynx in our study could be explained by the fact that our medical college and hospital is only government medical college and hospital for a large population, with well equipped operation theatre and well functioning

pathological laboratory where histopathology is available which helps in making diagnosis of carcinoma larynx. There is also separate oncology department in our medical college so patients are referred from surrounding areas.

Management of Stridor

In our study Tracheostomy done in 50% patients, Direct laryngoscopy and biopsy taken in 20%, incision and drainage 12%, conservative management 10%, medical management 9%.

In accordance with the following studies:

1. Rupa v., Raman R. (1990)⁶

Tracheostomy was done in 25% of patients. 2. Waalkens HJ et al (1989)⁷ Intubation and tracheostomy performed in 33.3% patients.

Conclusion

The present study was undertaken to study of stridor in adults among the patients attending the E.N.T department in Government Medical college total of 50 patients were included in the study. stridor is a emergency condition and severe airway obstruction which needs emergency management. stridor for longer duration may be because of underlying malignancy so every patient with stridor should be investigated thoroughly and managed accordingly.

Direct laryngoscopy proved to be useful method in detecting various causes of stridor. Direct laryngoscopy and Biopsy should be taken from any growth or any suspicious area of lesion of larynx for the confirmation of diagnosis so that proper treatment can be given.

In our study most commonly affected age group with complains of stridor is 36-55 years (40%) with majority of them were males. M.C. cause is growth larynx. Since our study is a Government Institution based study and patients in the institution are more from low socio-economic strata, which are more prone to laryngeal infections and cancer larynx due to their poor nutrition, addiction habits and occupational exposure.

Benign lesion and malignancy larynx are more common in patients between 35-55 years of age group. Smoking is also a contributing factor causing persistent inflammation and irritation of the larynx.

Management of stridor is according to the cause of stridor.

Growth larynx-tracheostomy followed by direct laryngoscopy and biopsy taken from growth and send for Histopathological examination (HPE).

Tracheostomy done in larynx trauma, edema of larynx, vocal cord paralysis, tetanus, carcinoma thyroid patients.

Ludwigs angina-incision and drainage and tracheostomy if needed.

Retropharyngeal abscess-intraoral incision and drainage.

parapharyngeal abscess-external incision and drainage.

In our study Tracheostomy done in 50% patients, Direct laryngoscopy and biopsy taken in 40% and sent for HPE, incision and drainage in 12%, conservative management 10%, medical management 9%.

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