

CROUP NOT ALWAYS A BENIGN CONDITION

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ABSTRACT

A 16 month old male baby was brought to emergency department with stridor and low grade fever. He was diagnosed with croup. Tracheostomy was done in emergency due to his worsening condition. Tracheostomy ended up with multiple complications. These were addressed promptly and the patient recovered quickly.

Keywords: Croup, Dexamethasone, Pneumothorax, Stridor, Tracheostomy.

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INTRODUCTION

Stridor is an abnormal noisy sound heard during respiration and is produced by turbulence of airflow through the airway. Stridor is not disease but a symptom possibly due to different etiologies, depending on age of patients. It may be inspiratory, expiratory or biphasic. Extra thoracic airflow turbulence produces inspiratory stridor while intrathoracic obstruction produces expiratory stridor. Stenosis at subglottic region produces biphasic stridor¹. Stridor in children may be due to congenital anomalies like laryngomalacia, laryngeal web or vocal cords paralysis or acquired causes like infections². Stridor and respiratory distress are the common presenting symptoms and most of the time these symptoms are due to common illness like croup or bronchiolitis^{3,4}. Croup is an Anglo Saxon word which means to cry loud. The most common pathologic agent causing croup is parainfluenza virus. Infants and toddlers are mostly infected. Croup is characterized by barking cough, inspiratory stridor, tracheal obstruction and hoarseness. In children 'under 5 years, of age croup is the most common cause of upper air way obstruction⁵. In our patient the stridor was due to croup but it did not prove to be benign as usual.

CASE REPORT

A 16 months old male boy was brought to emergency department with history of noisy

breathing and respiratory distress. The patient was calm in the evening but at midnight developed noisy breathing and low grade fever. There was no history of foreign body ingestion and running nose. The baby was vaccinated as per expanded program of immunization (EPI) schedule and no history of developmental delay.

On examination the patient was anxious with severe inspiratory stridor and extended neck. His pulse was 185/min, respiratory rate 72/min, oxygen saturation 78% in air and temp 99F. On chest examination the patient was having suprasternal recession and bilateral decreased harsh vesicular breathing. Rest of systemic exam was unremarkable.

The patient was admitted in pediatric intensive care unit (PICU) with vital monitoring, nil per os (NPO) and advised with injection dexamethasone 0.6 mg/kg intramuscular state, adrenaline nebulization, intravenous antibiotics, face mask oxygen 4 liter/min and maintenance fluids. Urgent neck x-ray revealed typical steeple sign and marked narrowing of airway. He was re-examined by ear nose throat (ENT) specialist. His direct laryngoscopy was done in operation theatre to rule out epiglottitis. Due to his worsening stridor and agitation, 'emergency tracheostomy' was done by ENT specialist and the patient was shifted to PICU. In the evening the patient developed excessive swelling of neck, chest and abdomen with crepitus on palpation. The patient was shifted to operation theatre again and the dislodged tracheostomy tube was replaced. The swelling gradually pacified,

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Received: 27 Dec 2016; revised received: 19 Apr 2017; accepted: 31 May 2017

however the patient respiratory distress persisted and resulted in decreased air entry on right side of chest on auscultation. Urgent portable chest x-ray was done which revealed tension pneumothorax. To relieve tension pneumothorax chest intubation was done. Repeat chest x-ray revealed resolution of pneumothorax. The patient then made a smooth recovery, tracheostomy tube was removed on 3rd day, chest tube on 5th day and the patient was discharged on 7th day of his admission, and was advised for regular follow up.

DISCUSSION

Only about 2% to 6% patients with croup need hospitalization and only less than 1% may need advanced life support due to respiratory failure⁶. Before introduction of epinephrine and corticosteroids as treatment for severe croup, tracheostomy, intubation and death were the main outcomes. Our patient was also a toddler with same clinical signs and symptoms as mentioned above; however in a severe form and was unique due to rapidly deteriorating conditions despite standard rescue treatment. Diagnosis of croup is clinical; however characteristic of croup on x-ray neck anteroposterior (AP) view is steeple sign⁵, which was also evident in our case.

'Tracheostomy in children' is a very challenging procedure as compare to adult tracheostomy which is associated with high mortality and morbidity. Life threatening upper airway obstruction in children is the most common indication in one series with 27% associated mortality⁷. Another series also showed

upper air way obstruction to be the most common cause of tracheostomy in children and so was the case with the above mentioned patient. In this series complications occurred in 22% with 2% mortality⁸. This drastic change in tracheostomy outcome in different set up is because no standard of care exists for such procedure in this age group⁷. In the above mentioned patient, though all the potential life threatening complications occurred. However, due to a coordinated and disciplined team work, the patient made a smooth recovery.

CONFLICT OF INTEREST`

This study has no conflict of interest to declare by any author.

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