Interactive Case discussion

A 15yr old boy with Stridor

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Case Report:

A 15 year old boy, asthmatic since age of 5yrs was referred to us with complaints of breathlessness. His symptoms started as high grade fever with dry cough followed by retrosternal chest pain and grade I MMRC dyspnea. 1 week later he was admitted in a near by hospital, evaluated and treated, but there was only partial relief of symptoms. Subsequently he developed hemoptysis which was occasional streaky, not fully relieved by medicines. 3 days later, he developed noisy breathing and was referred to our Institute.

1. Which of the following is false about stridor?

a) It is a medical emergency

b) Usually indicates an upper airway obstruction

c) Can be caused by foreign body,epiglottitis, laryngeal dyskinesia or tracheal tumors

d) Always inspiratory

Answer D. Stridor may be expiratory or biphasic also

Stridor is a loud, musical sound of constant pitch produced when airway diameter becomes usually less than 5 mm. Manoeuvres that increase air flow, such as voluntary hyperventilation, accentuate stridor. The presence of associated symptoms sometimes help to localise the site of pathology. Hoarseness may be a sign of a laryngeal abnormality. Muffling of the voice without hoarseness may represent a supraglottic process. Neck flexion may change the intensity of stridor, suggesting a thoracic outlet obstruction[1].

2. Most common cause of stridor in infants

a) Congenital anomalies

b) Foreign body

c) Infections

d) Allergic reactions

e) Answer : A - Congenital anomalies cause stridor in upto 87% of cases in infants[2]

3. Immediate management of stridor includes

a) Continuous monitoring with O2 supplementation

b) Nebulised epinephrine

c) Systemic steroids

d) Consider tracheostomy

e) All of the above

Answer : E; Inhaled heliox is also tried.

X ray chest 5 days after the onset of disease revealed widening of left paratracheal stripe and minimal shift of mediastinum to left. The left hemidiaphragm was raised and the left main bronchus could not be clearly delineated.

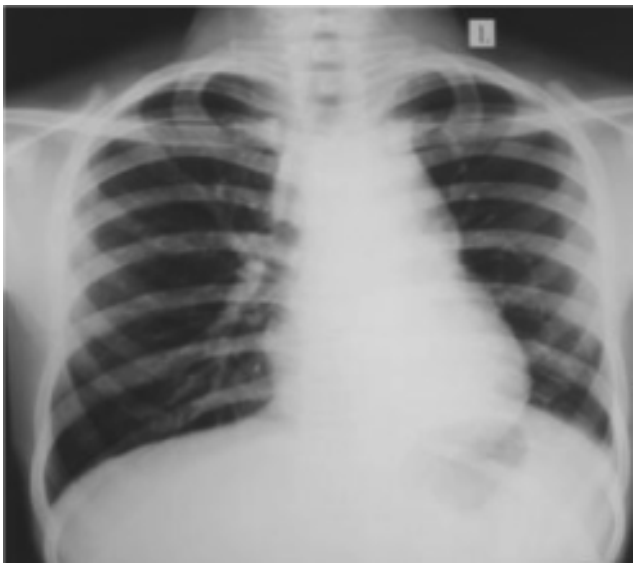


Figure 1.

4.In what percentage of normal individuals is the left hemidiaphragm at a higher level?

a) 1 %

b) 3 %

c) 5 %

d) 10 %

Answer: B. [3]

5.Normal subcarinal angle in chest Xray?

a) 50-60 degrees

b) 60-75 degrees

c) 80-90 degrees

d) 120 degree

Answer: B. [4]

CECT thorax(at level of carina) showed a 5cm long middle mediastinal necrotising mass ?secondary to confluent coalescent necrotic lymph nodes. The collection extended from manubrium to carina and displaced trachea & esophagus to the right. See the almost completely occluded Left main bronchus.(arrow)

Bronchoscopy done while admitted in the previous hospital revealed an intraluminal fleshy growth in lower part of trachea and occluding left main bronchus.

At our institute, patient received nebulised

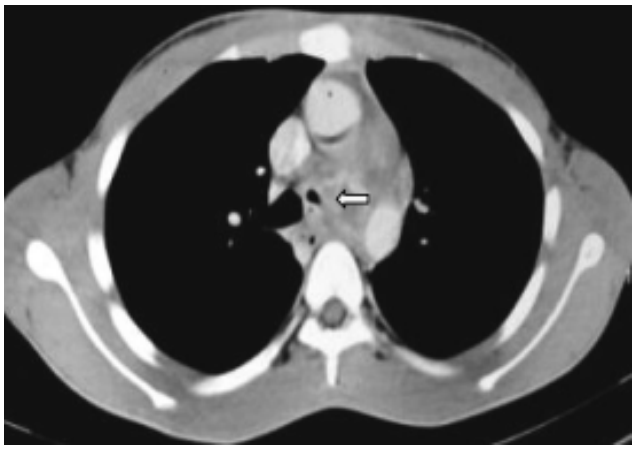
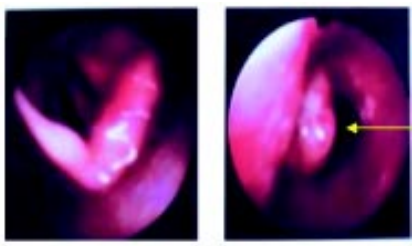


Figure 2



See Tumour in lower part of trachea.

Figure 3

epinephrine, bronchodilators and other supportive measures. Repeat chest X ray showed increasing volume loss on the left side with prominent mediastinal shift to left.

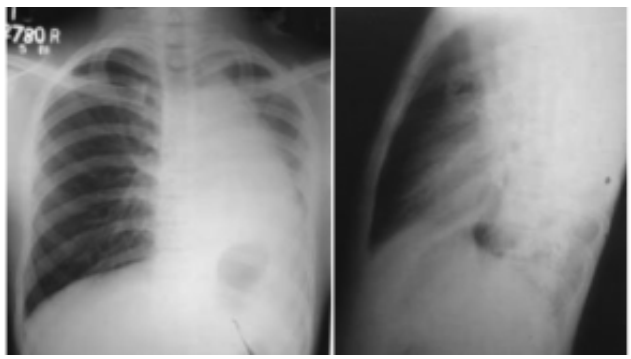


Figure 4 & 5

Bronchoscopy done here showed that the intraluminal lesion had progressed and was almost completely occluding the lower part of trachea and orifice of left main bronchus thereby causing stridor. Endobronchial Fine needle aspiration was done from the lesion using a 21G TBNA needle.

Blood investigations revealed Hb-13.2, TC-16,800, DC-P86, L13, ESR-50 mm in 1st hour, Platelet count-2.2 Lakhs, RBS-84, B.Urea-19, S.Creatinine-0.9, Normal LFT and serum

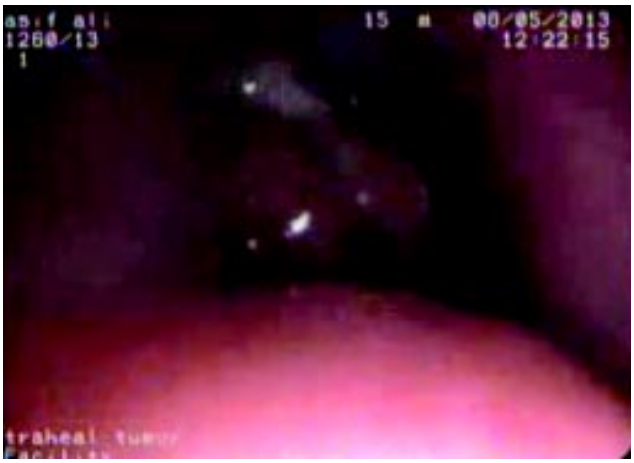


Fig 6- Intraluminal lesion almost completely occluding lower part of trachea and orifice of left main bronchus

electrolytes. Peripheral smear showed no abnormal cells/ blasts and bone marrow aspirate report was normal. No metastatic deposits/abnormal cells. *S.LDH was raised at* 1268 *(normal <300)*; Beta HCG 2 (normal upto 5); AFP 0.7(<6). USG abdomen revealed no organomegaly or enlarged lymph nodes and both testis were normal.

6.Raised serum LDH is seen in

a) Histoplasmosis
b) Dysgerminoma
c) Hemolysis
d) Pneumocystis jirovecii pneumonia
e) All of the above

Answer: E

Raised serum LDH is nonspecific.

Meanwhile FNAC report from the lesion came as "occasional atypical cells suspicious of lymphoma". Realising the aggressiveness of the tumour, the patient was started on high dose steroid under broad spectrum antibiotics cover. But he steadily deteriorated with worsening stridor, dyspnea and recurrence of hemoptysis. SpO_2 fell to 30%. Under high risk consent he was immediately shifted to the bronchoscopy suite for a rigid bronchoscopy and endotracheal debulking. As there was near total occlusion of the trachea, and electrocautery debulking had to be done in a limited space. Difficulty in oxygenating the patient and risk of airway fire were the main issues. We oxygenated him with high flow oxygen and applied the electrocautery instrument alternately.

7.Which of the following doesn't give immediate relief?

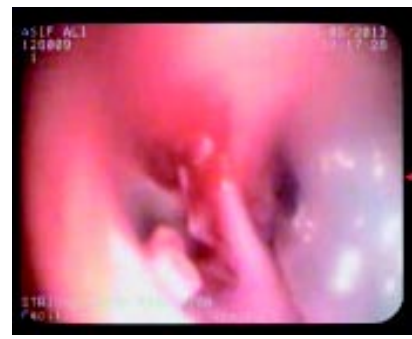
a) Electrocautery
b) Brachytherapy
c) Cryoextraction
d) LASER

Answer: B

Electrocautery, LASER and cryoextraction gives immediate relief of symptoms. APC also has immediate action, but only small amount of tissue debulking can be done. Photodynamic therapy gives relief within 48 hours, cryotherapy in 1-2 weeks while brachytherapy takes weeks to months[5].

Post debulking ,we selectively intubated the right lung under flexible bronchoscopy guidance and patient was put on mechanical ventilation. Patient's condition improved drastically and repeat bronchoscopy done 48 hours later showed patent Left main bronchus.

Repeat chest Xray showed an aerated left lung and the mediastinum central in position.



See debulked area with ET cuff in Right main bronchus

Figure 7

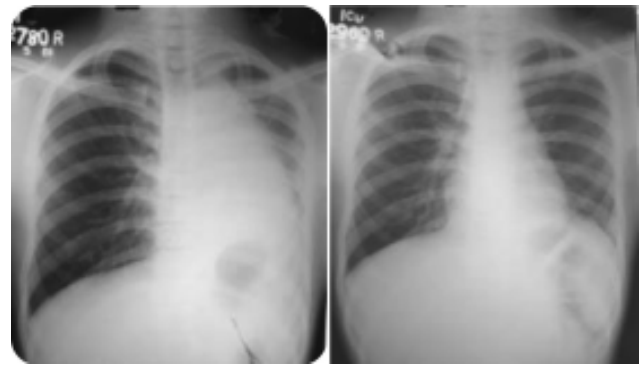


Figure 8.Pre electrocautery.Figure 9. Post electrocautery

Histopathology of the tumour showed diffuse sheets of atypical lymphoid cells which on immunohistochemistry stained positive for LCA and CD 30 and negative for cytokeratin, CD3 and CD 20. So based on clinical, bronchoscopic, histopathological and IHC features, a final diagnosis of Non Hodgkins Lymphoma- Anaplastic Large cell type presenting as mediastinal mass with tracheobronchial extension was made. Patient was given the first dose of chemotherapy after consulting with radiotherapy department.

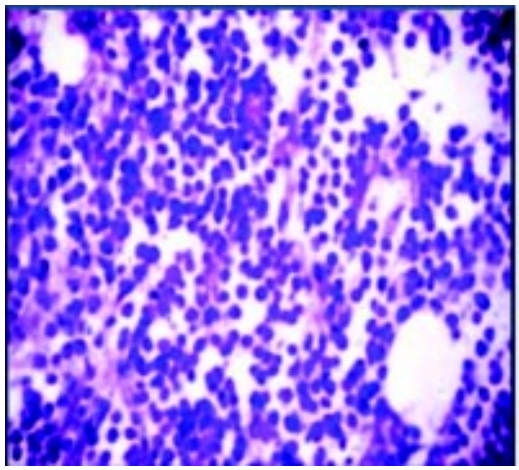


Figure 10. Histopathology

Patient was referred to an Oncology institute for further management.

8.Which is true about Lung Lymphomas?

a) Common site of involvement in lymphomas

b) Primary lung lymphomas constitute up to 10% of lung malignancies

c) More commonly NHL

d) Most common histological type of primary Lung Lymphoma is Large B cell.

ANSWER : C

Lungs are not a common site of involvement in Hodgkins lymphoma. It is more common in NHL. Pulmonary involvement may be

- Secondary to Mediastinal lymphoma

- Primary Lung Lymphoma

- Primary Lymphoma involving pleura

- Secondary to disseminated Large B cell or peripheral T cell lymphoma.

Primary lung lymphoma constitue less than 1% of all lung cancers. Diagnosis is made when there is involvement of lung with or without mediastinal involvement in the absence of extrathoracic lymphoma at time of diagnosis or 3 months thereafter. Upto 80% are Small B cell variant which is a low grade malignancy with 5 yr survival 80%. Other types are Large B cell 15% cases, Angiocentric Immunoproliferative, NK/T cell primary pulmonary lymphoma and Primary pulmonary Hodgkins lymphoma[6,7].

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