AN UNUSUAL CASE OF STRIDOR IN AN ADOLESCENT BOY

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Guidance
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THE CASE

- 11yr boy - noisy breathing - 3 months

- No dyspnoea/ dysphagia/odynophagia / fever/throat pain/ neck surgery/ speech disturbances/ cough

- No h/o foreign body aspiration

- School absenteeism-peer group pressure - 3mo
- Evaluated at a private hospital in Bangalore
- Flexible bronchoscopy – mild tracheomalacia
- Thyroid function test – normal
- Started on steroids
- Referred to ICH
ON EXAMINATION:

- Conscious, afebrile, obese
- No pallor, cyanosis, clubbing, neck swelling
- Minimal suprasternal retraction +
- INSPIRATORY STRIDOR ++
- SaO2 in room air – 98%
INVESTIGATIONS

- CBC, RFT, LFT, TFT - normal
- CXR - normal
- DL SCOPY - vocal cord & epiglottis - normal
Mild restriction & flattening of inspiratory loop – s/o upper airway obstruction
Normal trachea

External compression of upper 1/3\textsuperscript{rd} trachea (50%)

- R/O Vascular anomaly

FIBRE OPTIC BRONCHOSCOPIC
MULTISLICE CT ANGIOGRAM -

Brachiocephalic artery indenting on the anterior aspect of upper thoracic trachea & causing luminal narrowing.
CT ANGIOGRAM
ECHO

- NORMAL
FINAL DIAGNOSIS

- STRIDOR DUE TO EXTERNAL COMPRESSION OF TRACHEA BY ABERRANT INNOMINATE ARTERY – INNOMINATE ARTERY COMPRESSION SYNDROME
DISCUSSION- Vascular Anomalies

- Abnormalities of aortic arch & its branches
- Formation of vascular ring/sling – trachea & esophagus
- Most common- DOUBLE AORTIC ARCH
VASCULAR ANOMALIES...

- Double aortic arch
- Right aortic arch with a left ligamentum arteriosum
- Anomalous innominate artery
- Anomalous left carotid artery
- Anomalous left pulmonary artery
INNOMINATE ARTERY
COMPRESSION SYNDROME

• Commonest of all vascular anomalies causing tracheal compression.
• Origin of innominate artery farther to the left than in normal.
INNOMINATE ARTERY COMPRESSION SYNDROME

- Most common vascular cause of airway compression
- Common from birth to 3 yrs (upto 12 yrs)
Fig. 3a. Normal branching pattern of left aortic arch. IA: Innominate artery, LCA: Left carotid artery, LSA: Left subclavian artery.

Fig. 3b. Anomalous origin and course of innominate artery resulting in tracheal compression. IA: Innominate artery, LCA: Left carotid artery, LSA: Left subclavian artery.
Presentation

• Severe the compression, earlier the symptoms

• Tracheal compression - stridor, cough, tracheobronchitis & pneumonia

• Cyanosis & apnea

• Usually resolve by 3 yrs
INVESTIGATION

- Fibre Optic Bronchoscopy
- Aortic angiography - confirmatory
MANAGEMENT

MEDICAL

SURGICAL
CONSERVATIVE

Milder cases
- Humidified Oxygen, antibiotics
- Steroids

- Severe obstruction requires intubation & periodical suctioning
SURGERY

INDICATIONS:

Apnea

Recurrent tracheobronchitis, pneumonia

Ass intrinsic airway diseases
Surgery

- **ARTERIOPEXY**
  Anterior suspension of innominate artery to the sternum

- Re-implantation of the innominate artery to a more proximal site on the Asc. Aorta
Thanks to-
DEPARTMENT OF CARDIOTHORACIC SURGERY
THANK YOU!