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Case Report .

Syndromatic Child with Retaining Inner Cannula of Tracheostomy in the Right Main Bronchus: Case Report

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ABSTRACT

A wide range of pediatric airway foreign bodies (FB) has been reported in literature. This worldwide problem of ingestion, inhalation and aspiration FB is a life-threatening clinical airway obstruction. We report the rare occurrence of a syndromic child presenting with a retained inner cannula of tracheostomy tube in the right main bronchus.

Keywords: Tracheostomy FB, Inner Tube FB, Dislodgement, Pediatric Airway.

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INTRODUCTION

Tracheostomies are performed as lifesaving surgical airway procedures for life support in various clinical situation.[1-3] However; tracheostomies are often reported with complications, especially in children younger than 3 years of age.[4] The commonly recognized complications can be categorized as early or late complications and range from minor bleeding to life threatening. The commonly seen early complications are hemorrhage, subcutaneous emphysema, stoma infection, tracheostomy tube obstruction and dislodgement. While some of the late complications include tracheal stenosis, granulation formation, fistulae between trachea-innominate artery and the tracheoesophageal tree.[1,5] Aspiration of a part of the tracheostomy tube is a potentially life-threatening complication of tracheostomy.

Nonetheless only rare isolated cases of this have been reported in literature. This case report presents an unusual case of a child with dandy walker variant who was presented after the inner cannula of her tracheostomy tube has migrated to the right main bronchus.

CASE REPORT

Two years old Saudi female was brought to the pediatric emergency department of King Khalid University Hospital by her mother when she noticed "an absent tracheostomy tube from her tracheostomy site for the last 30 minutes while she was playing". The patient is a known case of Dandy Walker variant associated with congenital tracheoesophageal fistula (TOF), esophageal atresia, and severe laryngomalacia. At the age of 19 months she underwent TOF repair and laser supra-glottoplasty. Which has led to her needing a long-term tracheostomy as part of her management. At presentation the patient was vitally stable, afebrile and fully conscious. There was no witnessed chocking or evident respiratory distress. Auscultation of the chest showed bilateral equal air entry with normal vesicular breath sounds. An urgent X-ray showed a FB "piece of tracheostomy tube" in the right bronchus (Fig 1 and 2).

After ENT consultation a new tracheostomy tube (Shiley tube size 4) was inserted and the patient was admitted under the ENT team for urgent removal of foreign body piece of tracheostomy tube. During the operation the patient was ventilated through her newly inserted tracheostomy tube and rigid bronchoscope was performed and the foreign body was successfully removed. Direct visualization during examination showed laryngeal view grade I, normal supraglottic region, bilaterally fixed arytenoid cartilage bilaterally and a small anterior shelf in the subglottic area. Trial of passing size 4.5 Endotracheal Tube (ETT) was successful without complications. There was right anterior tracheomalacia at the

distal end of the tracheostomy tube and a closed mucosal pouch on posterior wall of the trachea precisely 2 cm above carina at the site of repaired trachea-esophageal fistula.

After removal of the foreign body, both right and left bronchi were noted to be patent with normal mucosa all over laryngeal area. Post-bronchoscopy the patient developed a mild fever with increasing tachypnea and SPO_2 desaturation up to 85%. A post operation Chest X-ray showed patchy opacities in the right lower lobe. Patient was treated in the Pediatric Intensive Care Unit (PICU) with Intravenous Cefuroxime, and inhaled bronchodilator with time the patient became stable and was discharged in good condition.

Figure 1: AP chest X-RAY showed right Main bronchus foreign body

Figure 2: Lateral chest X-RAY

DISCUSSION

Foreign bodies in the tracheobronchial tree are the most common causes of sudden airway obstruction in pediatric emergency practice. In review of literature we found isolated reports of inhaled fractured pieces of tracheostomy tube presented as tracheobronchial foreign bodies with variable outcomes ranging from full recovery to irreversible hypoxic brain damage and death.[1,6]

Anand et al reviewed 35 individual reports of tracheobronchial tree foreign body due to fractured tracheostomy tube and they observed that metallic, silicone and PVC tubes are all susceptible to fracture and subsequent inhalation.[7] Potential causes of such fractures include manufacturing and design defects, corrosion from alkaline tracheobronchial secretions.

Furthermore, tracheostomy pediatrics patients with complex underlying health issues need special care and diligent supervision to prevent such complications happening during playing as has happened with our patient. The junction of the tube stem with the flanges is the most common site of fracture site, therefore it is important to note that associated underlying airway anomalies in patients with complications and indwelling tracheostomies may make retrieval of the dislodged tube by bronchoscopy technically challenging.[8]

Fortunately, this patient was not in acute respiratory distress most probable due to alignment of the bore of the fractured tube with the mainstem bronchus allowing free passage of air with respiration. Anan et Al also observed this in their reported case.[7] Timely diagnosis and intervention by immediate bronchoscopy and foreign body removal in our patient has probably mitigated more severe recognized complications of foreign body aspirations apart from the secondary pneumonia in our patient.

CONCLUSION

Thus in conclusion__aspiration of fractured fragments of tracheostomy tubes is a rare but reported incidence. Checking for any manufacturing defects prior to insertion and follow up inspection for weak points due to prolonged wear and ageing of the tube should be an important part of care for tracheostomy stroma. This reflects the need for diligent care in pediatric patients with tracheostomy and physicians should emphasize to their parents and caregivers to constantly monitor tracheostomy tubes.

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