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Fractured Tracheostomy Tube as a Foreign Body in Tracheobronchial Tree

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Fracture of tracheostomy tube and occurrence of a tracheostomy tube as a foreign body in bronchial tree is a rare complication of tracheostomy. Actual reports of fractured tracheostomy tube and its presence as a foreign body in bronchial tree are few. We are reporting a case of fractured metallic tracheostomy tube, which appeared as a foreign body in bronchial tree.

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A great variety of foreign bodies have been reported from the tracheobronchial tree, but the occurrence of tracheostomy tube as a foreign body is extremely rare. Nowadays, tracheostomy became common in clinical practice for many chronic conditions and many patients have had to wear tracheostomy tubes over long period. It is important to continue reporting cases, but more important is to examine the circumstances of each incident. This should enable judgement to be made regarding the causes of the fracture of tracheostomy tube and accumulated experience over a large number of cases would suggest improvements in the nature of materials and in their usage and maintenance.

THE CASE

Seventeen years old male patient came to emergency department in All India Institute of Medical Sciences, New Delhi at night with history of missing of endotracheal part of metallic tracheostomy tube 2 hours back after a violent bout of cough while doing suction. He found outer sheild. He was comfortable and breathing well without stridor.

There was past history of measles at age of 7 months in 1986. After 7 days patient had difficulty in swallowing. Barium swallow showed short segment narrowing of esophagus at C6-C7 levels. Patient underwent gastrostomy. Later patient underwent stricturoplasty and serial dilatations in paediatric surgery department. Gastrostomy was closed. In 1990 after dilatation, the patient developed stridor. Bilateral abductor cord palsy was diagnosed on endoscopy. Tracheostomy under general anaesthesia was done on 11.7.1990. Right laser arytenoidectomy was done on 24.9.1994, after that, the patient was unable to decannulate. On 23.12.1995, microlaryngoscopy was done and found inadequate glottic chink (1.5 mm). At that time, the patient was using metallic tracheostomy tube. During the last 5 years he did not show for follow up. He was not using inner tube regularly with fenestrated metallic tracheostomy tube.

Examination of the patient showed that his vital signs were stable. A chest x-ray showed the stem of the tube in the right main bronchus (Fig 1).

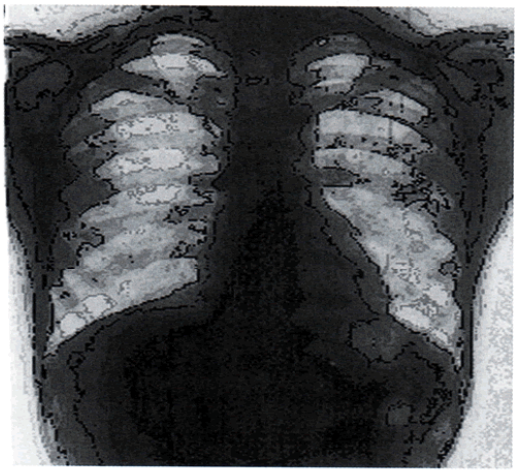

Figure 1. Chest X-Ray showing tracheostomy tube lying in right main bronchus.

The patient was admitted and taken for endoscopic removal. The tracheostoma was sprayed with 4% xylocaine. 0°, 4mm endoscope was passed through tracheostoma into right main bronchus and found upper end of tracheostomy tube in extended neck position. The tracheostomy tube was grasped with forceps and with drawn with endoscope. Fractured end of tracheostomy tube was irregular (Fig 2). There were no complications during surgery. Postoperatively, a repeat chest x-ray was clear and patient was discharged with a new metalic tracheostomy tube.

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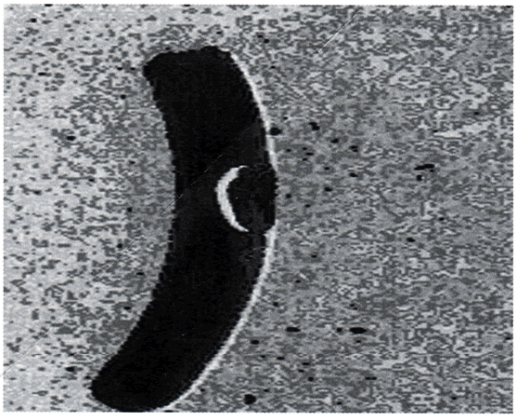

Figure 2. Part of endotracheal portion of tracheostomy tube without outer sheild.

DISCUSSION

Fracture of tracheostomy tubes were reported in literature[1-5]. All the case reports were reported from third world except on[5]. Metallic tracheostomy tubes are made of alloy of copper and zinc[1]. Erosion of tracheostomy tube is caused by alkaline reaction of tracheobronchial secretions[1,2]. Breakage is more common at junction of outer shield with endotracheal part of tube because chances of stagnation of secretions are much more at this site and the two parts, which are welded together[1,3]. Lack of support from inner tube and prolonged use of tracheostomy tubes are important factors which lead to breakage of tracheostomy tubes[4]. In all reported cases, rigid bronchoscope was used for removal of thracheostomy tube under general anaesthesia. In this case, we used 0^0, 4mm Hopkins rigid endoscope for removal. We are advocating 0°, 4mm Hopkins rigid endoscope for removal of tracheostomy tube from tracheobronchial tree in tracheostomised patients.

CONCLUSIONS

Fractured tracheostomy tube case reported. The factors, which predispose to fracture are alkaline reaction of tracheobronchial secretions, prolonged use and lack of support from inner tube. The countries of third world have poverty in common which indirectly leads to prolonged use of tracheostomy tubes. It is important that the physicians should carefully examine the tracheostomy tubes for evidence of impending fracture at follow up visits. We described new technique for removal of fractured tracheostomy tube from right bronchus in tracheostomised patients with 0^0, 4mm hopkins rigid endoscope.

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