TRACHEO – OESOPHAGEAL FISTULA: A RARE COMPLICATION OF TUBERCULOSIS

Shahab Ahmed, Khurshid Uttra

Combined Military Hospital, Hyderabad

INTRODUCTION

Tracheo-oesophageal fistulas are divided into congenital and acquired. The latter is rare and can occur secondary to malignancy, trauma, surgery, contagious diseases and pulmonary infections [1]. We report a case of tracheo-oesophageal fistula in a patient of miliary tuberculosis

CASE REPORT

A 25-year-old man was admitted to the hospital because of fever, night sweats, weight loss and violent coughing on swallowing fluids. The patient had reportedly been well until three months earlier, when fever developed. The patient was a native of interior Sindh and had settled in Hyderabad 5 years ago. His 20-year-old sister was said to have tuberculosis. The patient reported recent loss of 4 or 5 kg in body weight. About three weeks before admission, he was prescribed four drug anti-tuberculosis regime at another facility when his chest radiograph was suggestive of miliary tuberculosis. Two weeks before admission, the patient started having violent cough on drinking fluids. There was no history of recent travel, use of tobacco or hemoptysis, dyspnea, alcohol, nausea, vomiting, diarrhea, risk factors for infection with the human immunodeficiency virus (HIV), or intravenous drug use. On admission, his temperature was 99°F, pulse rate 96/min, respiratory rate 18/min, blood pressure 110/60 mm Hg, and the oxygen saturation was 97 percent on room air. He was thin built. There was no rash, skin lesions or lymphadenopathy. On auscultation of the chest, there were scant wheezes in both lung fields, but the heart sounds were normal. The



Fig 1: Miliary shadows in lung field.



Fig. 2: A fistulous tract is visible on barium swallow.

rest of clinical examination was normal. Chest radiograph (fig. revealed miliary 1) shadowing. The heart appeared normal. A tuberculin skin test was positive, with 20 mm of induration and the erythrocyte sedimentation rate was 51 mm at the end of first hour. Barium swallow examination revealed a communicating track between oesophagus and trachea at the level of T-4, a tracheo-oesophageal fistula. The length of the fistula was 1 cm, with the width at the oesophageal end 6 mm and 3 mm at the

Correspondence: Lt Col Shahab Ahmed, Dept of Radiology, Combined Military Hospital, Hyderabad.



Fig. 3: Barium was aspirated into respiratory tract.



Fig. 4: A communicating tract is visible in the upper esophagus.

tracheal end. The patient started coughing due to the contrast aspiration (fig. 2&3). Oesophagoscopy revealed a communicating tract in the upper third of the oesophagus (fig. 4). CT scan and broncoscopy were not available. After 3 months of treatment, there was considerable improvement and his coughing on swallowing fluids regressed. Repeat X- ray chest revealed remarkable regression of the tuberculous infection (fig. 5). Repeat barium swallow examination revealed an irregular sinus tract within soft tissues of the mediastinum and has no communication with the trachea. The width of sinus at the oesophageal end now measures 8 mm in



Fig 5: Regression of tuberculosis after 3 months of treatment.



Fig. 6: A sinus tract with surrounding fibrosis after treatment.

diameter with irregularity of the proximal adjacent portion of anterior curvature of oesophagus suggestive of fibrosis (fig. 6).

DISCUSSION

Contagious diseases like tuberculosis, syphilis or histoplasmosis infecting lymph nodes or pulmonary infections like empyema and lung abscess can lead to development of tracheo-oesophageal fistula [1]. In tuberculosis, primary tracheal ulcer can erode into the esophagus. In other instances, tuberculous necrotic mediastinal and hilar lymphadenopathy can lead to development of fistula [2]. In our case, as there was no obvious lympmhadenopathy, so likelv explanation appears to be tracheal ulcer secondary to miliary tuberculosis. Acquired tracheo-esophageal fistulae can be diagnosed clinically by features such as cough which is brought about by swallowing but can be mild. Chest radiograph may reveal aspiration pneumonia. Barium studies of esophagus may reveal barium into the bronchopulmonary system [3]. Endoscopic visualization of fistula in the esophagus can be useful. Bronchoscope will help to locate the exact site of the fistula. Treatment of acquired t tracheo-esophageal fistula mainly consists of anti -tuberculosis drugs because tuberculosis would be the commonest cause in our country. Injection of histocryl can be tried to close the fistula. Surgical treatment of acquired tracheoesophageal fistula consists of radical surgery and palliative surgery. Management malignant of tracheooesophageal fistula consists of radical or palliative surgery. Radical surgery consists of combination of pneumonectomy or pericardial patching of the fistula with oesophagectomy and restoration of gastrointestinal continuity using the stomach [4]. Mortality reported was however very high. Palliative surgery consists of either bipolar exclusion trans-tumoural or intubation. The latter can be done by either pull through method or push through method. In pull through method surgery is required so that the Moussean-Boubin or Celestin tube can be pulled through via a gastrostomy. Celestin tube is made up of latex rubber with a nylon reinforced spiral and radio opaque marker. They come in two adult sizes and one paediatric size. Fibreoptic endoscopy has made the push through method very easy. In push through method, the esophagus is dilated and the tube is introduced. PVC and latex tubes were used by Earlern and Cunhamelo [5]. The largest series of intubation by push through method comes from South Africa where mortality in malignant tracheo-esophageal fistula was 25% for 184 patients but long-term survival was not known

REFERENCES

- 1. Coleman FP. Acquired nonmalignant esophagorespiratory fistula. *Am J Surg* 1957; 93:321-8.
- 2. Wigley FM, Murray HW, Mann RB. Unusual manifestation of tuberculosistracheo-oesophageal fistula. *Am J Med* 1976; 60:310-15.
- 3. Sutton D, editor. Textbook of Radiology and *Imaging*. New york: Churchill Living stone; 1998; 6: 451-5 & 803.
- 4. Ong GB, Wong KM. Management of malignant oesophagobrachial fistula. *Surg* 1970; 67: 293-301.
- 5. Earlam R, Cunhamelo JR. Malignant oesophageal structures, a review of techniques for palliative intubation. *Br J Surg* 1982; 69: 61-8.