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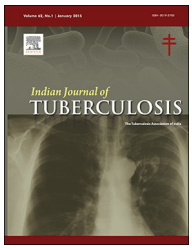

Case Report

Successful removal of self-expanding metallic stent after deployment for tubercular bronchostenosis

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ARTICLE INFO

Article history:
Received 7 April 2015
Accepted 13 July 2015
Available online 4 May 2016

Keywords:
Bronchostenosis
Tuberculosis
SEMS
Stent removal

ABSTRACT

The use of metallic stents is traditionally not recommended for benign tracheobronchial conditions. With advances in the field of interventional bronchoscopy, metal tracheobronchial stents have occasionally been used to treat benign disease. However, the removal of these stents from the airway is technically difficult. We are reporting the case of a young female subject who received a self-expanding metallic stent for alleviation of post-tubercular bronchostenosis, which was successfully removed after two months without complications. Metal stents can be used in benign tracheobronchial conditions but require meticulous follow-up to monitor complications. Experienced operators can remove them without major complications and this may be life-saving in emergencies. We are reporting this case for the rarity of such procedures in India.

1. Introduction

Traditionally, tracheo-bronchial self-expanding metallic stents (SEMS) are not recommended for use in benign conditions of the airway since there are complications such as granulation tissue formation, migration, and technical difficulty in removal of these stents in the event of resolution of the benign etiology. However lately, SEMS have been used not only in malignant, but also for the management of benign tracheo-bronchial conditions. There are few reports of successful removal of metallic endobronchial stents used for benign indications.[1–3] A couple of case reports have been published by Indian authors documenting the removal of SEMS.[4,5] We report our successful experience of removing metallic stent from the airway of a subject with post-tubercular bronchostenosis.

2. Clinical record

A 26-year-old female, a known asthmatic presented with complaints of dry cough and significant weight loss (6 kg) over preceding seven months. She had been evaluated elsewhere

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http://dx.doi.org/10.1016/j.ijtb.2015.07.013

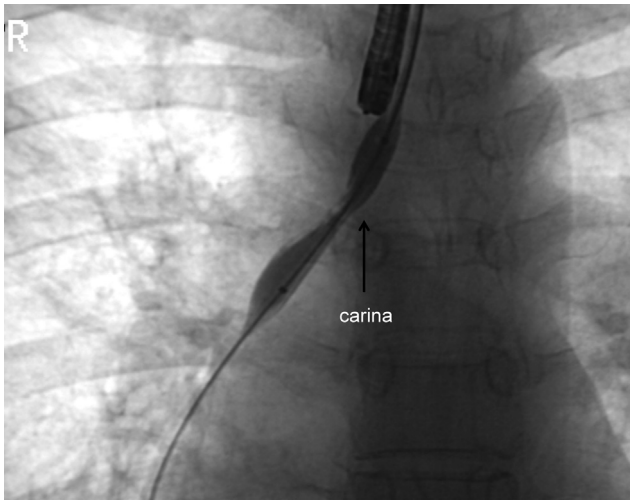

Fig. 1 – Fluoroscopy picture at the onset of balloon bronchoplasty shows severe narrowing of proximal RMB as seen by the constricted balloon at this region.

and diagnosed to have right main bronchus (RMB) stenosis for which she was referred to a tertiary center. At presentation, her general examination and vital signs were normal. Respiratory system examination revealed a central trachea, with decreased air entry on the right side and coarse inspiratory crackles over right interscapular and infraaxillary region. Chest radiograph showed a right lung consolidation with nodular infiltrates. A computed tomographic scan of the thorax showed gross narrowing of RMB, a cavity with air-fluid level in the right upper lobe, cylindrical bronchiectasis in right middle lobe, extensive consolidation in right lower lobe, and significant right lower paratracheal and subcarinal adenopathy.

Bronchoscopy was done, which showed normal vocal cords and trachea, but the RMB was invisible and on gentle prodding of the region of the RMB, pus poured out from the bronchus, which became barely visible. Bronchial wash and biopsy were taken and this revealed scanty AFB, and she was subsequently started on anti-tubercular therapy. In the same sitting, balloon bronchoplasty was done with a 8 mm × 4 mm balloon. While inflating the balloon, the severe proximal RMB stenosis was re-demonstrated (Fig. 1). The bronchoscope could be passed easily into the RMB after the procedure. The procedure was then repeated with a 10 mm balloon. The size of the lumen had increased and CT scan also showed improved right lung expansion after the procedure. However, when bronchoscopy was done a month later, the stenosis had recurred. Thus dilatation was repeated. The same sequence followed once more.

Since the stenosis had a tendency to recur after dilatation and the patient wanted respite from procedures, it was decided to plan a stent in place that will help to keep it patent. Since the silicon stent was not in stock, a covered SEMS placement was planned after obtaining informed consent. After dilating the RMB to 10 mm, a 12 mm × 3 cm covered self-expandable nitinol metallic stent (Niti-S) was deployed across the stenosis (Fig. 2a–c). A repeat bronchoscopy was done on

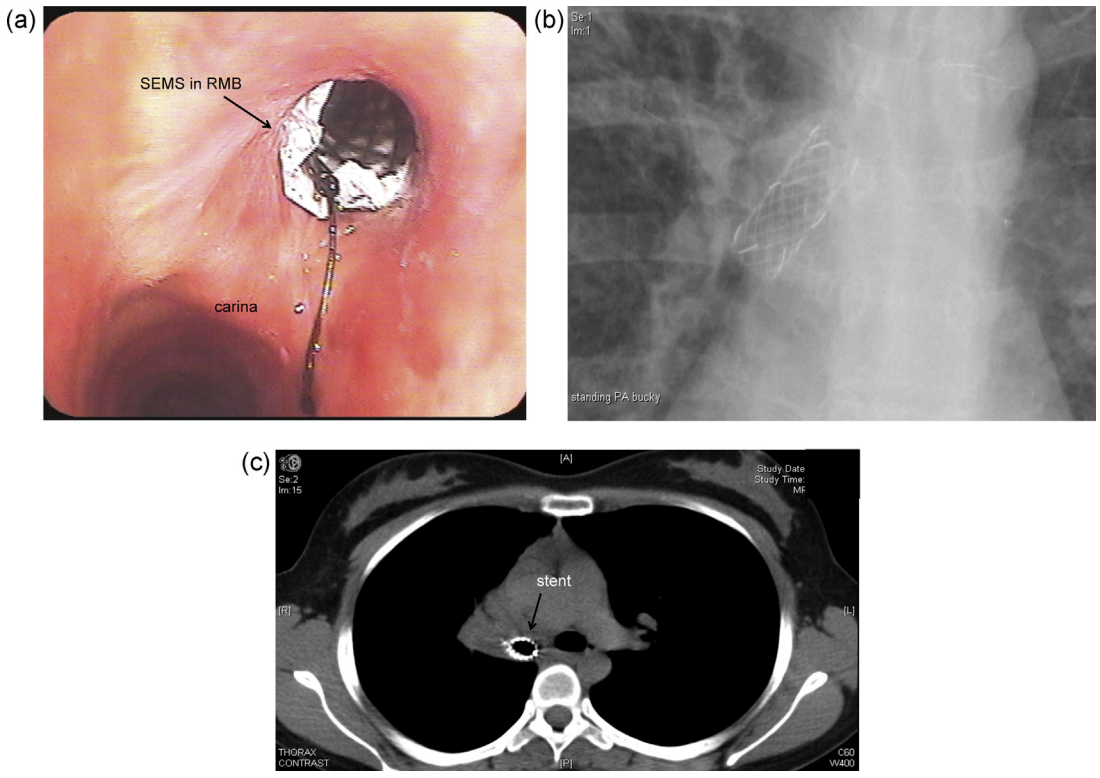

Fig. 2 – (*a*) Bronchoscopic image at carina with SEMS (self-expanding metallic stent) in the RMB. (b) X-ray image post-stenting, showing the fully expanded SEMS keeping the RMB patent. (c) Computed tomography confirming the SEMS in the correct position.