Intrathoracic gossypiboma causing intractable cough
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Received 11 July 2011; received in revised form 5 August 2011; accepted 29 August 2011

Abstract
A 45-year old woman presented with a 5-month history of coughing, eight months after surgery for post-tubercular fibrosis with bronchiectasis. Upon computerized tomography (CT) scanning, a sponge-like structure was seen in the pneumonectomy cavity near the stump of the right main bronchus. Bronchoscopic examination revealed a whitish mass blocking the right main bronchial stump which, upon attempted retrieval, yielded long threads of cotton fibres from a retained surgical gauze. The gossypiboma was removed surgically and the patient became symptom-free. Although rare after thoracic surgery, gossypibomas need to be considered in symptoms following surgery.

Keywords: Textilloma • Complication • Thoracic surgery • Bronchoscopy

INTRODUCTION
Textilloma (also called gossypiboma) is a term used to describe a mass within the body composed of a cotton matrix, which usually refers to a retained surgical sponge or gauze, surrounded by a foreign body reaction [1]. It has an estimated incidence of 1/1000–1/10 000 surgeries [2, 3]. Intrathoracic gossypiboma is a rare but serious consequence of negligence during surgery that can have severe medical consequences, including chronic pain, infection and abscess formation [3, 4]. Gossypibomas can be diagnosed over variable periods after surgery, retention over longer periods being associated with greater morbidity [5]. We herewith report a case of intrathoracic gossypiboma that resulted in an incessant cough, eight months after thoracic surgery.

CASE REPORT
A 45-year old woman presented with a 5-month history of coughing unaccompanied by any sputum production, haemoptysis or fever. The patient had been treated 20 years earlier for sputum-positive pulmonary tuberculosis and had remained asymptomatic till 2004 since when she developed recurrent haemoptysis. Evaluation had revealed extensive fibrosis of the right lung with bronchiectatic areas, areas of cavitation and pleural thickening on the right side, for which she was subjected to a right pneumonectomy in 2009. Following pneumonectomy, she remained well for eight months after which she started a chronic dry cough. Physical examination revealed a thin built female with a thoracotomy scar on the right side with a mediastinal shift to the right and absent breath sounds. The rest of the general and systemic examination was unremarkable. Routine haematological and biochemical investigations were normal. A chest radiograph revealed an opacified right hemithorax with gross mediastinal shift (Fig. 1a). A CT scan revealed an intracavity mass with air bubbles inside the right pneumonectomy cavity near the stump of the right main bronchus with possible fistulous communication with the same. The mediastinum was shifted to the right side with compensatory overinflation of the left lung. In addition, there was a thin walled cavity in the left upper lobe with multifocal consolidation in the left lower lobe (Fig. 1b). Fibroptic bronchoscopy revealed a whitish ball of woven fibre-like structure (Fig. 1c) which, upon attempted biopsy, yielded long cotton threads of degenerated surgical gauze, each 5–10 cm in length (Fig. 1d), confirmed upon histopathological examination. A surgical exploration was undertaken and the gossypiboma was removed. The patient’s symptoms abated after surgery and she has been doing well over a follow-up of 6 months.

DISCUSSION
The term ‘gossypiboma’ is derived from the Latin word ‘gossypium’, which means cotton, and the Swahili word ‘boma’, which means place of concealment and refers to retained sponge in the surgical bed. Although this term is frequently reported in the literature, many clinicians are unaware of the condition. In the 254 cases (147 reports from the period) identified via the National Library of Medicine’s Medline and the Cochrane Library, gossypibomas (mean patient age 49 years) were most commonly found in the abdomen (56%), pelvis (18%) and thorax (11%) with an average discovery time of 6.9 years with a median (quartiles) of 2.2 years (0.3–8.4 years) [6]. Emergency surgeries, unplanned changes in procedure and a higher body mass index have been identified as risk factors [7]. Gossypibomas are probably under-reported because of the danger of public litigation associated with the condition. Our case is the first report from our part of the world.
Our patient started with symptoms about eight months after the surgery. The presentation can be acute or delayed. In acute cases, the patients present with features of sepsis with abscess or granuloma formation which can lead to the fistula formation. The delayed type usually presents months or years after the surgical procedure with encapsulation and adhesions and may present as a complication, such as obstruction, fistulas or rarely as transmural migration. Thoracic textilomas can present with fever, cough, haemoptysis, weight loss and the symptoms may not be chronologically attributable to the surgical procedure.

Imaging is helpful in the diagnosis. A plain chest radiograph usually shows a peripheral or paramediastinal mass with an incomplete border sign, which suggests an extraparenchymal location. It may reveal opacity or a mass that changes little over time. A radio-opaque marker in the sponge may suggest the nature of the mass. CT scanning is most helpful in arriving at a diagnosis, especially if a radiopaque marker is used [2]. The CT appearances change according to the locations and chronicities of the gauze sponges and the type of reactions they generate in the host. In the early post-operative period, CT characteristically shows a well-defined mediastinal- or pleural-based soft tissue mass with a hyperdense rim, central air bubbles and a whirl-like pattern consisting of curvilinear, high-density stripes [2, 4, 8]. Following contrast administration, peripheral rim enhancement can be observed. The spongiform appearance of a textiloma represents trapped air bubbles within the fibres of the gauze sponge in liquid media and the lamellar, high-density areas representing the sponge itself [1, 2, 4]. The spongiform appearance in our case was the clue to the diagnosis in our case too. The air trapped by the foreign material is resorbed with time and the lesions may appear only as solid masses with or without any characteristic features and differentiation from other masses, such as neoplasms or degenerated hydatid cysts. Air seeping into the space between the devitalized tissue and the surrounding parenchyma can lead to ‘air-crescent sign’ and calcifications may be deposited along the network architecture of a surgical sponge leading to the ‘calcified reticulate rind’ sign. Magnetic resonance imaging could demonstrate a pseudocystic mass containing a movable body or a mass having low signal intensity on T2 weighted images. Bronchoscopically the gossypiboma might be visible, as in our case, if it has an intrabronchial part and retrieval is possible. Biopsy of the lesion may yield cotton fibres in samples [4]. Pathologically, also an aseptic fibrous response resulting in adhesion, encapsulation, and granuloma formation may be seen.

Our case emphasizes consideration of gossypiboma in patients presenting with respiratory symptoms following thoracic surgery. Because gossypiboma is solely due to human factors and is a legal issue, the vigilant eye of the surgical team cannot but be over-emphasized.

Conflict of interest: none declared.

REFERENCES


