Case report

Transdiaphragmatic migration of forgotten gauze sponge: an unreported entity of lung abscess

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Abstract

Migration of left in foreign bodies like gauze sponge into intestine, stomach, urinary bladder and their extrusion through umbilicus or rectum is well known. We report a unique case wherein a gauze sponge was left in abdominal cavity 25 years back at the time of initial surgery. This patient who had not undergone any thoracic surgery in the past was recently subjected to posterolateral thoracotomy for a right sided lung abscess and a large sponge gauze was unbelievably recovered from the area of lung abscess.

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1. Introduction

The term 'gossypiboma' denotes a mass of cotton that is retained in the body following surgery. Foreign bodies like retained gauze, surgical instruments are rarely reported due to medical and legal reasons. Migration of gauze sponge has been reported to occur in ileum [1,2], duodenum [3], stomach [4] and urinary bladder [5]. The expulsion of sponge has been seen to occur through laparotomy wound and rectum. A left in sponge usually manifests within weeks to years and the longest duration of concealment has been 24 years [6]. Retained sponge may produce various complications like obstruction, fistula, peritonitis, abscess, transmural migration or spontaneous extrusion. It has been reported to lead to erosion of a blood vessel or rarely to tumor formation [7]. Transphrenic migration of gauze sponge into pleural cavity is exceptional with regard to its mode of presentation, migration, incidence and longevity of retention in our case (longest till date). The mechanism of transmigration remains a question to be answered.

2. Case report

Background. A 49-years-old, post-menopausal woman had undergone cholecystectomy and choledochotomy at the age of 14 years in 1978. She was alright for a period of 2 weeks when she again started with abdominal pain which was initially vague, dull ache and located in right upper quadrant. Subsequently, she developed colicky abdominal pain, which was treated with antispasmodics prescribed by the treating general surgeons. She used to get occasional tenesmus and diarrhoea. She was suspected to have irritable bowel syndrome and treated for it. At the age of 19 years, her lower gastrointestinal symptoms disappeared and the abdominal pain became ill-defined. During this course, gastrointestinal survey failed to demonstrate any cause. She did not report to outpatient department till 27 years of her age when she developed productive cough, chest pain on right side, breathlessness and scanty hemoptysis. She received treatment twice for suspected pulmonary tuberculosis. CT scan thorax done in August, 2003 in a different hospital revealed a gut loop interposed between right dome of diaphragm and liver, suggestive of Chilaiditi’s syndrome. She continued to follow general physicians in different centers till December, 2004 when she turned 49-years-old.

Recently, she was referred to our department with the complaints of recurrent hemoptysis and fever. On examination she was anemic, and had clubbing of fingers. Systemic examination revealed an old right paramedian scar, grossly diminished breath sounds on right infrascapular and infra-mammary areas. Baseline investigations were performed. Hemoglobin was 7.8 gm/dl, Esr, 65 mm/first h; platelet ct, 4.9 lac/mm³; TLC, 6000/mm³. Sputum and Blood cultures were sterile. Sputum examination was negative for Acid Fast Bacilli. Chest X-ray (PA) revealed an ill-defined shadow in right costo-phrenic angle. Computed tomogram of thorax displayed a large abscess, 10.5×6.5 cm in size, in posterior...
segment of right lower lobe with a peculiar ‘whorl’ like appearance in the centre (CT value, 16–21 HU) and enhancing peripheral zone (CT value, 79–92 HU)—Fig. 1. Bronchoscopy revealed inflamed mucosa of right lower lobe bronchus. On exploration via right postero-lateral thoracotomy an elevated, globular, tumor like lesion was embedded in the lower lobe of right lung. Aspiration of the pseudotumor displayed purulent material. The right lung was seen grossly collapsed. As soon as the right lung was dissected away from the diaphragm, to our surprise a partially degenerated gauze sponge, 9/6 in. in size came out. The gauze was seen embedded inside a cavity created in parenchyma of lower lobe of right lung. However, diaphragm was intact but a ’moth eaten’ like, 4 × 6 cm, circular thinned out area was seen in the dome near the sponge. The apparent defect was actually replaced by a thin fibrous membrane. Gauze sponge was eaten up at many areas (Fig. 2). Gauze was removed and sent for culture sensitivity which subsequently did not grow any organism. The cavity in lower lobe was obliterated by capitonnage. A thorough search was made to rule out any rent/ hernia in the diaphragm but none was found. Formal decortication was performed and chest was closed. She was discharged symptom free after 8 days from the hospital.

3. Discussion

Surgical sponge constitutes the most frequently encountered forgotten object amongst foreign bodies used during surgery. Presentation of a left in abdominal foreign body depends upon the type of foreign body reaction induced. Two variants of reaction have been studied. In one there is aseptic fibrinous response which follows a silent, delayed course and the second variant is an acute, exudative type leading to abscess formation [7]. The erosion of sponge into the intestine is the most unusual sequela. Usual symptoms include unexplained abdominal pain, rectal tenesmus, discharge through a persistent sinus. Crossen and Crossen [8] reviewed 37 cases in which intraperitoneal sponges had eroded into the bowel and passed per rectum. Migration of peritoneal end of a ventriculo-peritoneal shunt catheter into right pleural cavity has been reported [9]. To our knowledge, migration of a sponge into pleural cavity from peritoneal cavity through an intact diaphragm is not reported. It is difficult to diagnose retained or migrated surgical sponge due to fibrotic foreign body reaction around the gauze and lack of any specific characteristic. Plain radiographs fail to delineate the sponge for want of a radio-opaque marker. The hallmark of diagnosis of a surgical sponge on CT scan constitutes fairly well circumscribed lesion with densely enhancing wall and central, low density, whirl like zone due to gas trapped in the fiber meshwork of the gossypiboma [9]. The diagnostic feature on ultrasonography is an intense and sharply delineated acoustic shadow which can be present even in the absence of air and calcification [6, 9]. However, gauze pieces have a wavy, striped and/or spotted appearance on MRI [10]. With regards to the patient in question repeated abdominal surveys did not help. This happened possibly due to peristaltic movement of the gut which pushed the gauze towards the right subphrenic space. As a consequence the sponge remained sibilant and undetected for most of the time. There was no reason to believe that she could have surgical gauze in the right thoracic cavity when she was not operated for any pleural/lung pathology. Secondly, it is astonishing to notice that migration can occur through a tough membrane like diaphragm which was never torn during trauma of any kind. She had no evidence to substantiate the possibility of a hiatus hernia as well. The development of lung abscess with its refractoriness to antibiotics and the shift in symptomatology led us to the recovery of migrated sponge. This case will certainly alert the readers so that an entity like this will be dealt with if suspected in time.
References