Recurrent Bilateral Pneumothorax

David Simonett-Luthy, Werner Strobel, Prashant N Chhajed

Abstract

A 71-year-old male with a history of coronary artery bypass surgery 7 years ago underwent a transthoracic needle aspiration biopsy of a pulmonary nodule in the right lung. Three hours later, the patient complained of dyspnea and left sided thoracic pain. The chest x-ray showed bilateral apical pneumothoraces. A second chest x-ray two hours later showed an increase in pneumothorax size on the left side. An intercostal drainage tube (size 24 French) was inserted into the fourth intercostal space on the X side and continuous suction was applied with 20 cm H₂O. One day later, the chest x-ray revealed resolution on both sides with only minimal residual bilateral pneumothoraces. There was no air leak and hence the chest tube was removed. Histology revealed a non small cell lung cancer and a lobectomy was performed. At the second postoperative day a chylothorax was diagnosed because of elevated triglycerides. Parenteral nutrition was begun and the quantity of drained effusion diminished. Nine days after successful lobectomy the patient accidentally removed the chest tube and bilateral pneumothoraces were seen in the x-ray again.

Case

A 71-year-old man with suspected lung cancer underwent transthoracic needle aspiration biopsy of a right solitary pulmonary nodule of 2 cm in size. Pulmonary function tests showed mild airflow obstruction. The patient had past medical history of undergoing a coronary artery bypass graft surgery seven years ago and was recently diagnosed with prostate and rectum cancer. Current computer tomography (CT) scan of chest revealed a solitary pulmonary nodule with no evidence of bullous disease. Transthoracic CT guided aspiration biopsy was performed in the supine position with a coaxial 17 gauge needle (Figure 1). Three hours following the transthoracic needle aspiration the patient complained of dyspnea at rest and left sided chest pain. The chest x-ray showed bilateral apical pneumothoraces (Figure 2). A repeat chest x-ray after two hours showed an increase in the pneumothorax on the left side. An intercostal drainage tube (24 French) was inserted on the left side in the fourth intercostal space and continuous suction with 20 cm H₂O was applied. One day later, there was resolution in both pneumothoraces with minimal residual bilateral pneumothoraces with no air leak, hence the intercostal drain was removed. Histology revealed a non small cell lung cancer and a lobectomy was performed one week later. Nine days after surgery, the patient accidentally removed the chest tube and bilateral pneumothoraces were seen in the x-ray again.

Discussion

Unilateral pneumothorax is a known complication of computed tomography guided transthoracic needle aspiration with an incidence ranging 19% to 60%. Smaller coaxial needle size has a significant effect on pneumothorax rate. Normally the right and left pleural cavities do not communicate. Bilateral pneumothoraces are rare complications of CT guided lung biopsy and are reported in patients with heart or heart-lung transplantation. In these patients the normal anterior barriers between the pleural cavities are not present and hence when pneumothorax occurs, it might be bilateral in 33 to 40% cases. Reviewing the literature, we found only four reports of persistent communication between the two pleural spaces. Therefore, bilateral pneumothoraces following CT guided transthoracic biopsy are rare in patients after cardiovascular surgery. Several reports of persistent communication between the two pleural spaces. Therefore, bilateral pneumothoraces following CT guided transthoracic biopsy are rare in patients after cardiovascular surgery. First was a patient in whom large bilateral pleural effusion was drained by unilateral thoracocentesis. Second was a patient with a history of transthoracic esophageal resection, who developed pneumomediastinum, pneumoperitoneum and bilateral pneumothoraces after transthoracic needle aspiration of a lung nodule. Third was a patient with a history
of resected thymoma who developed bilateral pneumothoraces as a consequence of CT guided transthoracic needle aspiration biopsy. The fourth patient had history of cardiovascular surgery and developed bilateral pneumothoraces after catheterization of a subclavian vein. To our knowledge, this is the first report of recurrent bilateral pneumothorax after percutaneous needle biopsy and subsequently after lobectomy in a patient with history of cardiovascular surgery, which was treated successfully with insertion of a unilateral intercostal drainage tube.

Physicians should be aware that after cardiovascular surgery communication of the two pleural cavities may persist although this might be rare. In patients with a history of median sternotomy undergoing transthoracic needle aspiration biopsy, one should be watchful for the possibility of bilateral pneumothoraces. Although unilateral drainage may suffice, a close follow-up is important to prevent a contralateral tension pneumothorax.

References


Fig. 2: Bilateral pneumothorax after CT guided aspiration biopsy

A N N O U N C E M E N T

Neurology Update 2010

Neurology Update 2010 will be held on 19th - 21st February, 2010 at the Taj Land’s End Hotel, Mumbai. This update will focus on stroke, epilepsy, movement disorders, dementia, demyelinating disorders, vertigo and headache with participation of invited international faculty.

Dr. B.S. Singhal,
Organizing Chairman

C O N T A C T
Ms. Katie Vania Dr. B.S. Singhal’s Office, 131, MRC, Bombay Hospital, 12 New Marine Lines, Mumbai 400 020. • Tel.: +91-22-2206 8787 / 2206 1322 • e-mail: ktvania@vsnl.com
Ms. Niloofer Patel : Tel.: +91-22-2282 5108 • e-mail: neurologyupdate2010@fravashiworld.com