

Iatrogenic buffalo-chest syndrome

Sir,

A 70-year-old patient, ex-smoker with coronary artery disease (CAD), for which the patient underwent coronary artery bypass grafting (CABG) 8 years back, presented with complaints of sudden onset of shortness of breath and left-sided chest pain. Examination revealed left-sided decreased movement, hyper-resonance with decreased breath sounds, suggestive of left-sided pneumothorax. Chest X-ray (CXR) (PA) [Figure 1] confirmed the presence of left-sided pneumothorax. A computed tomography (CT) [Figure 2] of the thorax was done to look for blebs or other causes of secondary pneumothorax. The CT revealed left-sided pneumothorax, pneumo-mediastinum, and sternal wire from previous cardiac surgery, along with a right-sided pneumothorax. Intercostal tube drainage of left hemithorax led to the resolution of pneumothorax of both the sides pointing toward the presence of a connection between the pleura of the two sides. Repeat CXR [Figure 3] showed resolution of the pneumothoraces. A repeat CT [Figure 4] done after 5 days (at the time of discharge) showed resolution of the pneumothoraces and pneumo-mediastinum. On the axial cut, there seemed to be a communication between the two pleural sac (just anterior to the vertebra) [Figure 5], however, it could not be confirmed because procedures such as video-assisted thoracic surgery (VATS) were not done in this case since the patient was treated conservatively with unilateral intercostal drainage tube placement to which he responded.

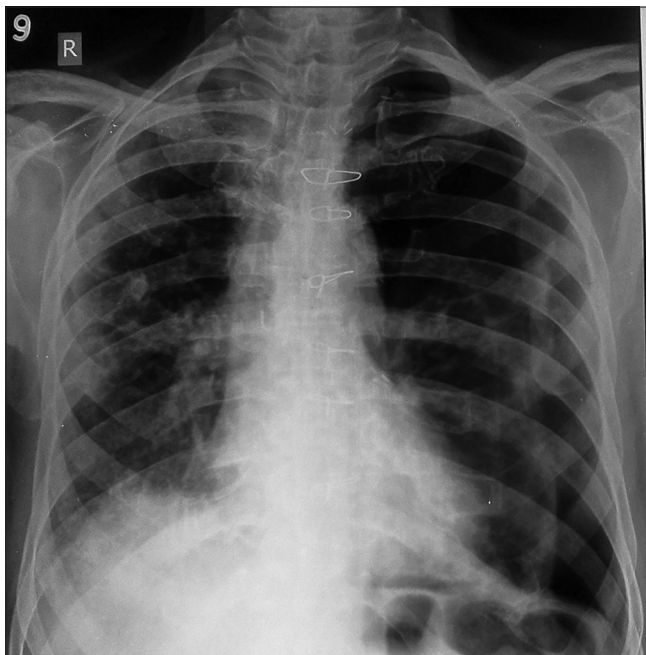


Figure 1: Chest X-ray showing left sided pneumothorax

Hence the diagnosis of the case was “iatrogenic buffalo-chest syndrome.”^[1] Buffaloes are unique animals as their pleural cavities are connected. This is disadvantageous for the animal as a single arrow of the hunter can lead to bilateral pneumothoraces and incapacitation.^[2] In human beings, as in other animals, the pleural cavities are normally separated. However, the pleural cavities may be interconnected due to few reasons. Rarely, the connection may be developmental or it may arise subsequent to some thoracic interventions. In latter cases it is termed “iatrogenic buffalo syndrome.”

Buffalo syndrome is a type of simultaneous spontaneous bilateral pneumothorax (SSBP),^[1,2] which refers to the detection of pneumothorax bilaterally at the same point in time. It is estimated that SSBP comprises approximately 1.6% of all spontaneous pneumothorax cases; the incidence of buffalo syndrome has not been estimated but is deemed to be very rare.^[3] SSBP is commonly a result of rupture of bilateral blebs/bullae. Rarely, SSBP is caused by interpleural communications most commonly due to invasive mediastinal surgery.^[4,5]

To the best of our knowledge, SBSP due to suspected pleuro-pleural communications has been described in a total of 9 patients, and among them confirmed pleuro-pleural communication has been demonstrated in 4 patients,^[4] highlighting the rarity of this case.

In this case, the prior thoracotomy during CABG had in all probability lead to a persistent interpleural communication. Rupture of subpleural bleb on one side led to unilateral pneumothorax with transit of the air through the interpleural connection and development of contralateral pneumothorax. The presence of interpleural communication



Figure 2: Computed tomography of the thorax showing bilateral pneumothorax with pneumo-mediastinum and sternal wires

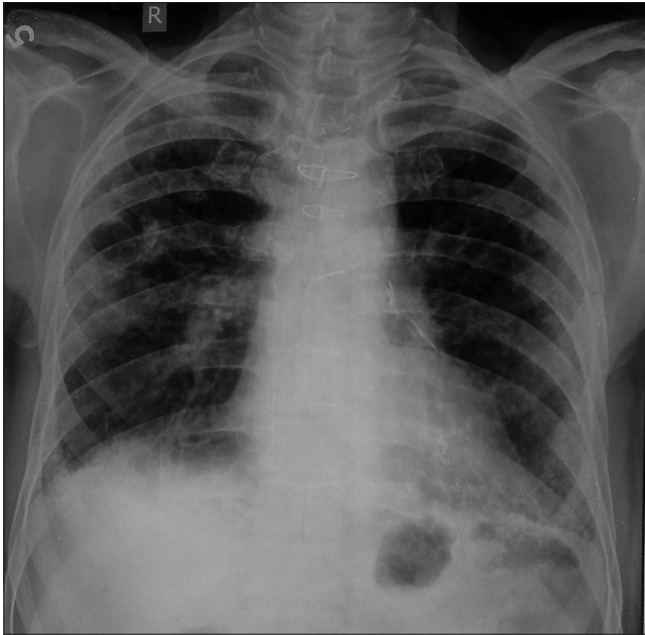


Figure 3: Chest X-ray showing resolution of bilateral pneumothoraces after left-sided intercostal tube drainage



Figure 5: Axial section of computed tomography of the thorax showing possible location of the pleuro-pleural communication (arrow)

in our case was inferred from the history of CABG, absence of significant bilateral blebs/bullae, and prompt recovery to one-sided intercostal drainage.

The clinical manifestations of SBSP can be varied ranging from mild chest pain to life-threatening respiratory failure. Further, the effect of rupture of bleb/bullae may be amplified because of bilateral pneumothorax. Intercostal tube drainage (ICD) on one side can lead to resolution of bilateral pneumothoraces. The role of pleurodesis is debated.

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Conflicts of interest
There are no conflicts of interest.



Figure 4: Computed tomography of the thorax repeated at the time of discharge revealed complete resolution of bilateral pneumothorax and pneumo-mediastinum

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References

- Hartin DJ, Kendall R, Boyle AA, Atkinson PR. Case of the month: Buffalo chest: A case of bilateral pneumothoraces due to pleuropleural communication. *Emerg Med J* 2006;23:483-6.
- Grathwohl KW, Dordak S. Images in clinical medicine. Buffalo chest. *N Engl J Med* 2003;349:1829.
- Lee SC, Chen YL, Huang CW, Tzao C, Hsu HH, Chanq H. Simultaneous bilateral primary spontaneous pneumothorax. *Respirology* 2008;13:145-8.
- Hata Y, Suzuki T, Yokoi M, Yoshida S, Takeyama T, Nakazaki H, *et al.* Simultaneous bilateral spontaneous pneumothorax with congenital pleuro-pleural communication. *J Thorac Dis* 2013;5:87-9.
- Rali AS, Manyam H. Bilateral Pneumothoraces Following BiV ICD Placement: A Case of Buffalo Chest Syndrome. *Am J Case Rep* 2015;16:703-6.

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