Editorial

Benefits of a multidisciplinary team approach on a challenging case of bilateral tension pneumothorax

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This editorial comment refers to the article "*Multidisciplinary team approach on a case of bilateral tension pneumothorax*" by Li *et al.*, *Journal of Thoracic Disease* (*JTD*); Vol. 10, No. 4 (1).

In this article, Li *et al.* present a case of a 63-year-old male patient with bilateral tension pneumothorax. The patient history reveals chest pain and tightness on both sides for 4 days, a chronic obstructive lung disease for 3 years, a non-smoking habit, and a low body mass index (BMI) of 15.5. At the time of hospital admission a bilateral tension pneumothorax was diagnosed and the patient received emergency chest drains on both sides. Due to persistent air leaks, the patient suffered from progressive subcutaneous emphysema of the neck, mediastinum, chest wall, pelvic wall and both scrotums. Infraclavicular skin incisions and a second chest tube to the right thoracic cavity were subsequently performed to control the symptoms. However, after 1 month of conservative treatment with chest drains, antibiotics and additional therapeutic approaches, results were poor with persistent bilateral air leaks, emphysema and hospital acquired pneumonia.

For this challenging case, the authors used inputs from a multidisciplinary team (MDT) to plan the further treatment. This approach resulted in a two-staged surgical treatment that finally helped to resolve symptoms. The patient was discharged 7 days after video-assisted thoracoscopic (VATS) bullae resection on the left side with both lungs well recruited, pointing out the beneficial role of surgery.

Initial treatment of bilateral tension pneumothorax is, without doubt, a bilateral chest tube to drain the air. In secondary spontaneous pneumothorax (SSP), as in this case with a history of chronic obstructive pulmonary disease (COPD), guidelines usually suggest to contact a thoracic surgeon if the airleak does not resolve within 48 hours (2). It is also evident that many secondary spontaneous pneumothoraces will resolve spontaneously over a period of 14 days, therefore conservative treatment is justified until that day (3).

What are the benefits of a MDT: when looking at the comments of the surgeons, both know how to deal with these patients in different clinical settings, including tricks to reduce the risk of airleak after surgery and strategies in case the patient refuses to undergo surgery. It also becomes obvious that the surgeons are aware of the patient's comorbidities which need close consideration. These conditions include severe COPD, persisting infectious problems with hospital acquired pneumonia, poor pulmonary function and possible difficulties during anesthesia. With the help of an MDT these problems can be successfully dealt with: respiratory medicine bring in the experience of supportive medical conservative treatment, infection control and control of COPD symptoms to the MDT, while the intensive care unit (ICU) and anesthesia team will contribute during the perioperative phase.

Interestingly, one thoracic surgeon suggests a conservative approach for the left and surgery on the right side, while the colleagues of the conservative specialties recommend surgery for both sides.

The authors summarize that all experts suggested surgery for this patient. Considering all opinions, they planned a two-staged procedure and transferred the patient to the intensive care unit.

The case presented by Li *et al.* was further elaborated by expert opinions. They also call for surgical treatment but would schedule it sooner. Furthermore, they also advocate bilateral surgery at the same day, given the experience with bilateral lung volume reduction surgery.

Simultaneous bilateral spontaneous pneumothorax (SBSP) is a very rare condition, accounting for ~1–1.3% of all spontaneous pneumothoraces. Furthermore, pneumothorax aetiology differs between primary spontaneous pneumothorax (PSP) and SSP, for example patients suffering from an underlying pulmonary disease, such as COPD, tuberculosis, pneumonia, sarcoidosis, histiocytosis, Wegener granulomatosis, rheumatoid lung, lung cancer, mesothelioma and lung endometriosis. In this case, the patient suffered from COPD and cachexia. Many data regarding simultaneous bilateral SSP (SBSSP) in the literature describe a high mortality rate up to ~50% within the early period of follow-up. Therefore, surgical treatment is highly advocated by many authors once the patient is under stable conditions (4-6). Timely scheduled surgery could help to avoid complications from prolonged conservative treatment such as hospital acquired pneumonia.

In conclusion, a MDT can help health care providers to make the right decisions in critical cases and maximize patient safety and quality of treatment. While the idea of bringing complex SSP patients to the attention of a MDT is a good one, it was unfortunately initiated too late in this case.

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None.

Footnote

Conflicts of Interest: The authors have no conflicts of interest to declare.

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