Bilateral Simultaneous Spontaneous Pneumothorax

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Bilateral simultaneous spontaneous pneumothorax, although rare, may constitute a grave emergency when it does occur. Early diagnosis and institution of prompt therapeutic measures may be essential for survival. The great majority of cases of spontaneous pneumothorax involve one lung only and are readily treated by simple aspiration of the air, or by intercostal catheter and water seal drainage. In general, thoracotomy is reserved for those cases which may be classified as chronic or recurrent pneumothorax. On the other hand, a recent experience with a case of bilateral simultaneous pneumothorax has demonstrated that in such a circumstance, early thoracotomy is justified and desirable in order to avoid a subsequent and possibly fatal recurrence.

Case Report

P. C., a 22 year-old white man was admitted to The George Washington University Hospital on November 18, 1958 having been transferred from another hospital out of town. Six months previously, he awoke one morning with dull, substernal pain and dyspnea. He was taken to a local hospital where a roentgenogram of the chest showed bilateral pneumothorax. This was treated by aspiration and he was discharged from the hospital after 18 days. He was well in the interin until November 12, 1958. At that time, he again awoke with severe right anterior chest pain which was aggravated by inspiration. He developed progressive dyspnea and his mother noted that he was cyanotic and disoriented. He was readmitted to the local hospital where immediate aspiration of air was carried out after a roentgenogram had again demonstrated bilateral pneumothorax (Fig. 1). A chest tube was inserted and his condition improved. He was subsequently transferred to The George Washington University Hospital. At the time of admission, physical examination showed a thin, white man in no distress. Temperature was 37.2° centigrade; pulse 94; blood pressure 130/75. The head and neck were not remarkable. Examination of the chest revealed diminished breath sounds throughout both sides of the chest, more marked on the left. There was diminution in vocal and tactile fremitus and a few fine rhonchi were present bilaterally. The remainder of the examination was within normal limits.

Laboratory Data: Hematocrit 46; WBC 13,300; Seg. 71; Bands 12; Lymphocytes 17; Urinalysis normal; V.D.R.L. negative; Blood type B+. Chest x-ray film on the day of admission showed 30 per cent pneumothorax on the left and a 25 per cent on the right. Small amounts of fluid were present in both pleural cavities.

Course in the hospital: On November 21, 1958 bilateral anterior thoracotomy was performed under general endotracheal anesthesia. Since no intercostal catheters had been inserted, the chest was entered rather rapidly to avoid the development of tension pneumothorax. Incisions were made in both submammary regions extending from the lateral border of the sternum on each side to the axilla. The chest was entered on each side through the fourth intercostal space. Upon entering the pleural spaces, the left lung was found to be approximately 30 per cent and the right lung approximately 40 per cent collapsed. The lungs were immediately expanded. It was noted that the visceral and parietal pleurae were considerably injected, particularly on the left side. There was a small area of scarring at the apex of the left lung with a residual emphysematous bleb approximately two centimeters in diameter at the apex of the left lung. There was a small scarred area at the apex of the right lung, but no definite bleb could be demonstrated. There was no evidence of an air-leak or bronchopleural fistula at this time. The bleb at the apex of the left lung was then resected. The visceral and parietal surfaces of both pleural spaces were then lightly abraded with a dry gauze sponge and powdered with sterile USP talc. Chest catheters were then inserted in the second interspace in the anterior axillary line and the eighth interspace in the posterior axillary line bilaterally. The wounds were then closed in layers in routine fashion. A postoperative roentgenogram of the chest demonstrated full expansion of both lungs.

Postoperatively, there was no evidence of air-leak from either pleural space. There was a small amount of serosanguineous drainage from both pleural cavities for the first 48 hours postoperatively. All chest tubes were removed on the third postoperative...
day. The remainder of the convalescence was not remarkable except for a superficial wound infection in the right thoracotomy incision. This was treated with irrigation and daily dressings and healed satisfactorily. His lungs remained fully expanded and he was discharged from the hospital on his 22nd postoperative day and returned home.

He was last seen on January 9, 1959 as an out-patient. At that time he was asymptomatic, the wounds were well healed and both lungs were fully expanded (Fig. 2).

**Discussion**

It has been our policy to advise thoracotomy in those patients who have had a recurrent spontaneous pneumothorax or in those cases where a persistent air-leak exists after four to five days of treatment with water seal drainage. At the time of operation any blebs which may be present are resected and the surface of the lung is powdered with USP talc. This serves to create adhesions between the visceral and parietal pleura and prevents any subsequent development of pneumothorax.²,³

It would appear, however, that in the event of bilateral simultaneous spontaneous pneumothorax, one should be somewhat more aggressive in the surgical approach. At the time of the initial episode, once the lungs have been expanded either by aspiration or water seal drainage, early elective thoracotomy should be carried out. It would seem unwise in this situation to wait for a recurrence, since this could possibly occur in a location where the patient would be unable to obtain immediate medical care and the result could easily be fatal. It is apparent that the immediate treatment instituted at the time of the second episode in the case described was lifesaving. If this episode had occurred under circumstances where immediate care was not available, the patient probably would not have survived.

Bilateral simultaneous thoracotomy has gained popularity in recent years, especially in operations on the heart and great vessels. This approach has also been advocated for simultaneous bilateral pulmonary resection,²,³ and Baronofsky has advocated bilateral thoracotomy in the treatment of unilateral pneumothorax and pulmonary blebs.⁴ It is our opinion that simultaneous bilateral thoracotomy is rarely necessary for pulmonary disease. We do not agree with Baronofsky's concept of routine bilateral thoracotomies in the treatment of unilateral pneumothorax. In patients with bilateral pulmonary blebs, with or without associated pneumothorax, when bilateral operations are indicated, it has been our practice to operate on one side at a time. Under such circumstances we believe that these operations should be performed in two stages at intervals of three weeks or more.

On the other hand, in a patient with bilateral simultaneous pneumothorax, simultaneous bilateral operation would appear to be advisable. The possibility of recurrent contralateral pneumothorax in the postoperative period following thoracotomy on one side would appear to be great. A case similar to the one reported herein has been recorded by Reeves et al.⁵ We disagree slightly with these authors in that we do not believe that bilateral thoracotomy for this condition requires transection of the ster-
num. In addition, we believe that talc poudrage is of great benefit in the prevention of further episodes of pneumothorax. The use of talc does not appear to increase the postoperative pain or morbidity and is certainly more simple and less dangerous than pleurectomy, as advocated by some authors.\textsuperscript{7,8} Talc poudrage does not reduce subsequent pulmonary function.\textsuperscript{9}

REFERENCES


