also a box in which the patient was in a sitting position. The pressures used were plus or minus 5 to 9 cm H₂O. Similar physiologic effects have been described as the result of therapy with intermittent positive-pressure breathing (IPPB), whether induced by supra-atmospheric pressure (ie, IPPB apparatus) or by atmospheric pressure induced by the same intratank negative pressure.²⁻³⁻⁶

There is no differential pressure on the circulation or on the cranium with CPPB (or CPAP, the same, of course), as compared to continuous negative pressure, since there is no effective tracheobronchial resistance in the nonturbulent flow of air with CPPB, as compared to continuous negative pressure. Although there has been some dispute about this in the past, there is no basis for argument if it is conceded that the difference in density of 3 percent at a differential of 20 mm Hg could not be sufficient to start a differential pressure on the cranium or the circulation.

If a further investigation seems warranted, reference can be made to the studies on the use of the equalizing pressure chamber, in which a high flow of air, equivalent to one-seventh of an atmosphere, was induced in a chamber 25 times a minute.⁵ The tracheobronchial resistance amounted to 4 cm H₂O in normal individuals and 5 to 7 cm H₂O in those with chronic pulmonary disease. In this instance, there was an unequal pressure applied to the cranium when the pressure differential was counterbalanced by a restrictive neck piece between the head and the chest; however, experiments on normal subjects indicated that no such unequal pressures would be exerted with the negative intratank pressures generally used, although the pressure wave induced by therapy with continuous negative pressure around the chest wall would be applied to the alveoli a fraction of a second sooner than therapy with CPPB applied at the mouth.

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REFERENCES


Premature Ventricular Contractions and Subsequent Ventricular Tachycardia

To the Editor:

In the February 1977 issue (Chest 71:142-145, 1977), the article entitled “Harbingers of Paroxysmal Ventricular Tachycardia in Acute Myocardial Infarction” by Rothfeld and associates reported their interesting findings regarding premature ventricular contractions in patients with acute myocardial infarctions. It was stated that in their series, most episodes of ventricular tachycardia were related to late ventricular premature beats, in contrast to early premature contractions; however, unfortunately, the relative frequency of occurrence of these two types of ventricular premature beats in their patients was not stated. Therefore, one is left wondering whether or not the greater incidence of episodes of ventricular tachycardia associated with late premature beats might simply have been due to a much greater frequency of occurrence of the latter.

It would be of great interest to know what percentage of patients with late premature ventricular contractions in this series went on to develop ventricular tachycardia and what percentage of patients with early premature ventricular contractions did so; for example, it might be found that while there was an overall greater instance of ventricular tachycardia associated with late ventricular beats, this was due to a much greater frequency of their occurrence, and yet a greater percentage of patients with early premature beats went on to develop this serious arrhythmia. This information would be most useful in evaluation of the individual patient in terms of determining his risk of developing ventricular tachycardia. Analysis by Rothfeld et al of their data for such possibilities as those postulated herein might be especially useful in view of the other important findings which they reported.

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To the Editor:

Hutchinson's criticism of our article entitled “Harbingers of Paroxysmal Ventricular Tachycardia in Acute Myocardial Infarction” (Chest 71:142-145, 1977) and his request for additional data are certainly valid. One or more ventricular premature contractions were detected in 258 patients (61 percent) of our series of 424 patients. Early ventricular premature contractions occurred predominantly in 86 patients, while late ventricular premature contractions were observed in 172 patients. Of
those 86 patients with mainly early ventricular premature contractions, nine (10 percent) developed one or more episodes of paroxysmal ventricular tachycardia, while 28 (16 percent) of those 172 patients with late ventricular premature contractions had paroxysmal ventricular tachycardia. In five patients, paroxysmal ventricular tachycardia was initiated by atrial premature contractions. Hutchinson's assumption that late ventricular premature contractions occurred more often is correct, but the percentage of patients with early ventricular premature contractions who went on to develop paroxysmal ventricular tachycardia is similar to the percentage of those with late premature ventricular contractions and paroxysmal ventricular tachycardia.

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Role of Fiberoptic Bronchoscopy in Removal of a Foreign Body

To the Editor:

Despite encouraging results, the role of the fiberoptic bronchoscope in the removal of foreign bodies remains largely ill-defined. In an attempt to better define this function and propose a logical approach to the use of the fiberoptic bronchoscope in the removal of foreign bodies, we cite the following report of the findings in a patient from whom a metal pin was removed using the fiberoptic bronchoscope, after two unsuccessful attempts with the rigid instrument.

Case Report

A 48-year-old man came to the Boston City Hospital after accidentally inhaling a pin. While trying on clothing in a store, he sneezed and inhaled a pin that he had been holding in his mouth. The findings from physical examination were completely unremarkable. A chest x-ray film (Fig 1) confirmed the presence of a metal pin in the right lower lobe.

Endoscopic examination with a rigid bronchoscope (No. 9) under general anesthesia visualized the pin in the posterior basal segment of the right lower lobe. Attempts to remove the pin with a biopsy forceps having failed, after using both No. 9 and No. 7 rigid bronchoscopes, endoscopic examination with the fiberoptic bronchoscope was undertaken as the last resort before thoracotomy. This time the pin was successfully extracted using a forceps (Olympus FB-IC).

Discussion

Except for the evaluation of massive hemoptysis and the removal of foreign bodies, the fiberoptic bronchoscope has virtually replaced the rigid bronchoscope for most examinations of the tracheobronchial tree.1 Recently, several reports, both clinical and experimental, have documented successful retrieval of a wide variety of foreign bodies as well, using fiberoptic bronchoscopy.2-6 Our experience with the present case indicates that under certain circumstances, flexible bronchoscopy is the procedure of choice in removing a foreign body.

Formulating an approach to the removal of aspirated foreign objects requires consideration of the object's size, shape, and location in the tracheobronchial tree. Large objects (smallest dimension greater than 5 mm) ordinarly lodge in bronchi of the first or second order, whereas smaller or slender objects tend to gravitate into the segmental or subsegmental airways. Since foreign bodies beyond lobar bronchi are usually out of the range of the rigid bronchoscope,7 initial attempts at their removal should invariably be made with the fiberoptic bronchoscope. Aspirated objects lodged in the main-stem or lobar bronchi are best approached initially with the rigid bronchoscope. If this fails, an attempt with the fiberoptic bronchoscope may be fruitful.8 Development of new instruments for extraction that can be passed through the flexible bronchoscope will definitely expand its role in the removal of foreign bodies, even from large airways.

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References


Figure 1. Posteroanterior chest x-ray film. Foreign body is visible in right lower pulmonary field.