POSTOPERATIVE ATELECTASIS.* CASE REPORT

Postoperative atelectasis is an ever present possibility following anesthesia and operation. The many factors which may result in this condition have recently been reviewed by Brace (1). An adequate method of treatment has been described earlier by Waters (2).

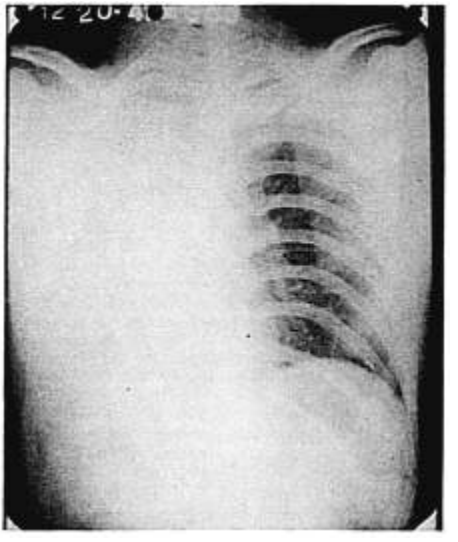

FIG. 1. The chest at 11:00 a.m. on the fourth postoperative day, December 20, 1941.

It is the author's purpose to present a case report and several roentgenograms which demonstrate the importance of early adequate treatment using equipment familiar to all anesthesiologists.

CASE REPORT

Corporal C. L., age 24, was admitted to Barnes General Hospital, July 14, 1941, because of asthmatic attacks which had not improved during two weeks of symptomatic treatment in a station hospital.

The history indicated that the patient had had an acute cold followed by an asthmatic type of bronchitis. No previous attacks of asthma, urticaria, eczema or hay fever were described. Physical examination revealed that he was well-developed, well-nourished and weighed approximately 175 pounds. He breathed without respiratory distress. The tonsils were infected. Examination of the lung revealed very fine crepitant râles heard over the right posterior chest. The circulatory system was normal and the blood pressure in millimeters of mercury was 136 systolic and 80 diastolic. During the patient's hospitalization no attacks of asthma developed, the tonsils were removed, and on August 12, 1941, he returned to duty.

* Reviewed by Manuscript Board, War Department.

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On October 14, 1941, the patient was readmitted because of paroxysmal attacks of bronchial asthma, associated with numerous sibilant and sonorous râles in the chest without change in the quality of the percussion note or change in breath sounds. After two months' hospitalization no abnormal findings in the thorax were demonstrable and no attacks of asthma occurred. Extensive laboratory studies demonstrated a few pus cells in the urine and urologic examination revealed left hydronephrosis thought to be due to an aberrant renal vessel or to obstructing fibrous bands.

On December 16, 1941, exploratory operation of the left kidney was performed, using nitrous oxide-ether anesthesia. A small vein was demonstrated crossing the ureter. The vein was ligated and all adhering bands and fat were stripped from the renal pelvis. Anesthesia time was one hour and a half, with satisfactory blood pressure, pulse and respiratory readings. The immediate postoperative course of the patient was satisfactory, with elevation of temperature to 102 F. on the first day and gradual return to normal on the third day after operation at which time the temperature was 98.6 to 99.8 F., pulse 100 to 110 beats per minute, and respirations 18 to 20 per minute. Examination of the chest demonstrated normal expansion. There was no clinical evidence of atelectasis. During the morning of the fourth day the patient noted a peculiar sensation in his chest, described by him "as though his heart felt like it fell through space," it became hard for him to breathe and he began to perspire. Temperature was recorded at 102.4 F., pulse 120 and respiration 20 per minute. Inspection of the chest showed marked decrease in expansion on the right side, the apex beat of the heart was observed in the fifth right interspace. A radiogram revealed massive collapse of the right lung (fig. 1), with deviation of

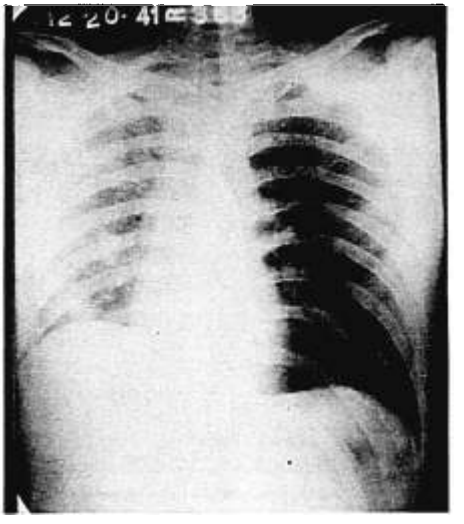

FIG. 2. The chest at 12:15 p.m. the same day immediately after tracheobronchial toilet.

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the trachea to the right, and a shift of the cardiac silhoutte.

As soon as possible a tracheobronchial examination was performed, using a 5 per cent solution of cocaine, sprayed over the back of the tongue, pharynx and vocal cords. With the aid of an anesthetist's laryngoscope, a number 10 Magill tube was inserted through the larynx. A number 14 F., soft rubber urethral cathether connected to a suction apparatus was used to aspirate mucus from the tracheobronchial tree. Considerable thick yellow mucus was removed by aspiration and the right chest expanded during inspiration. A roentgenogram made immediately after removal of the suction and Magill tubes demonstrated relief of the atelectasis and expansion of the right lung (fig. 2). Inhalations of carbon dioxide air were ordered at intervals of one hour for the remainder of the day. On the fifth day the temperature, pulse and respiratory readings were normal. The patient made an uneventful recovery, and was discharged to duty February 6, 1942.

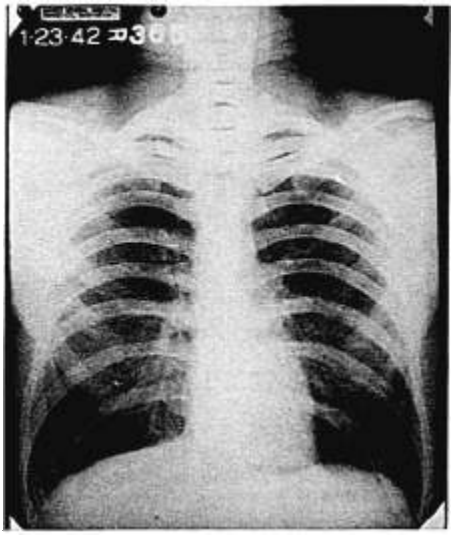

FIG. 3. The chest thirty-three days after atelectasis, January 23, 1942.

REFERENCES

1. Brace, Donald E.: Atelectasis, Anesthesiology 3: 131–140 (March) 1942.
2. Waters, Ralph M.: Tracheobronchial Toilet, Brit. J. Anaesth. 18: 1–10 (March) 1942.

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