A complication of pacemaker implantation: a large pneumothorax compressing the entire left lung

A 62-year-old man was admitted to our hospital with palpitation and recurrent syncope. He was a smoker and his body weight and height were 53 kg and 162 cm, respectively. The admission electrocardiogram showed a sinus bradycardia at a rate of 32 beats/min. Holter monitoring showed recurrent atrial fibrillation. A VVIR permanent pacemaker was implanted through the left subclavian vein. Ventricular pacing threshold was 0.5 V, pacing impedance was 720 ohms, and pulse width was 0.50 msec. The patient started to complain of difficult breathing early after implantation. Auscultation revealed coarse crackles over the left chest with diminished breath sounds on the left hemithorax. A chest x-ray showed a large left pneumothorax, compressing the left lung and resembling a mass (Fig. A). The electrocardiogram showed normal single-chamber pacing. Tube thoracostomy drainage was performed immediately. The chest tube was removed on the third day of hospitalization. A subsequent chest radiograph showed almost complete healing of the pneumothorax and disappearance of the mass (Fig. B). Pneumothorax is one of the serious complications of pacemaker implantation seen in 2-3% of patients. It is more common in older patients, lightweight subjects, and patients with lung disease. Therefore, implantation via the subclavian route requires special care especially in older, lean, and diseased patients.

Figures. (A) The chest radiograph showing a large left pneumothorax compressing the left lung and resembling a mass (black arrow). (B) Repeat chest radiograph after tube drainage showing almost complete healing of the pneumothorax.