Contralateral pneumothorax and pneumopericardium: An unanticipated complication of intracardiac device implantation

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Introduction: The development of contralateral pneumothorax after intracardiac device implantation is a rare complication with the association of contralateral pneumothorax and pneumopericardium being unexpected and even rarer. We present such a case of concomitant right-sided pneumothorax and pneumopericardium following left-sided pacemaker implantation.

Methods: A 62-year-old man presented with complaints of recurrent episodes of presyncope for nine months. The baseline electrocardiogram (ECG) showed trifascicular block. Twenty-four-hour Holter monitoring further revealed intermittent high-grade second degree atrioventricular (AV) block. Echocardiography did not reveal any structural heart disease with normal biventricular function. For this symptomatic AV block, a dual-chamber permanent pacemaker was implanted via left axillary venous access with active fixation leads in right atrium (RA) and right ventricle (RV). Pacing parameters were normal and patient was stable after the procedure. Chest radiograph done two hours after the implantation showed normal lead position and no pneumothorax. There was no pericardial effusion on echocardiogram.

Result: About seven hours after the procedure, the patient complained of sudden onset central chest pain that worsened with inspiration. Vitals, chest auscultation, heart sounds, bedside anteroposterior chest radiograph, device interrogation and repeat echocardiogram were within normal limits and the patient was given symptomatic treatment. The pain persisted and decrease in the breath sounds was detected on the right side of the chest with appearance of mediastinal crunch. There was pneumopericardium (white arrow) and right-sided pneumothorax (white asterisk) with partial collapse of right lung on non-contrast CT with probable extrusion of the helix of the RA lead (Figure 1). The pneumothorax was managed by inserting an intercostal drainage tube. The patient remained stable and one week later, the chest radiograph showed no abnormality. RA lead repositioning was not required.

Conclusion: Contralateral pneumothorax with or without pneumopericardium is an extremely rare complication of intracardiac device implantation and may be missed on an initial radiograph. Caution should be exercised in screwing of the atrial lead during placement and an early CT is warranted in cases with high suspicion.