Pneumopericardium after attempted left ventricular lead insertion

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Cannulation of the coronary sinus (CS) and its branches is the cornerstone of cardiac resynchronization therapy and implantable cardioverter defibrillator implantation. In the present case, the CS was cannulated using a Daig fixed-curve CS decapolar catheter (Daig Corporation, USA). Cannulation of the CS was extremely difficult, most likely due to the presence of a valve occluding the CS ostium (extreme tortuosity or an acute takeoff were not observed). A Rapido sheath (Boston Scientific, USA) was advanced into the CS, followed by withdrawal of the CS diagnostic catheter. A CS dissection was noted following the injection of noncontrast dye into the CS ostium. No hemodynamic deterioration occurred, and careful attempts to cannulate the true lumen were subsequently made with noncontrast dye injections for sheath guidance.

After several failed attempts to cannulate the true lumen of the CS, contrast was evident in the pericardial space on fluoroscopy; thus, attempts at CS lead placement were abandoned. A postoperative chest x-ray was performed and pneumopericardium was noted (Figure 1A). In the lateral view, an air-fluid level could be seen (Figure 1B). The most reasonable explanation for this complication is that the CS was dissected with the mapping catheter or by advancing the Rapido sheath; further contrast injection likely introduced air and contrast into the pericardium.

A chest x-ray was repeated two days later and the pneumopericardium had spontaneously reabsorbed (Figure 2).

CS dissection is a relatively common (6% to 7%) complication of biventricular pacing insertion (1); however, usually a left ventricular lead can advance through the true lumen. Pneumopericardium in the

absence of concomitant pneumothorax is a rare complication of device implantation (2). Once CS dissection is detected, a postoperative chest x-ray is recommended to exclude pneumopericardium. In the present case, there were no symptoms or clinical sequelae, and no interventions were required.

REFERENCES

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Figure 1) A A postoperative chest x-ray showing pneumopericardium (arrow). B A chest x-ray, in the lateral view, showing the air-fluid level (arrow)

Figure 2) A repeat chest x-ray performed two days later showed spontaneous pneumopericardium reabsorption

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