An Unusual Position for the Permanent Pacing Wire

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Abstract

Complications related to permanent pacing wires insertion include ventricular perforation. It commonly perforates the right ventricle. We present images of an unusual case where the pacing wires perforated the anterior left ventricular wall between the left anterior descending artery and diagonal artery.

Keywords

- permanent pacing wires
- left ventricular perforation
- artery

Introduction

Complications related to permanent pacing wires insertion include ventricular perforation. It commonly perforates the right ventricle (RV).

We present images of an uncommon complication where the permanent pacing wires perforated the anterior left ventricular wall adjacent to left anterior descending artery (LAD) (►**Fig. 1**). Obviously, it went through the interventricular septum into the left ventricular cavity and then perforated the left ventricular wall between the diagonal artery and LAD artery. It also perforated the overlying pericardium and eroded into the soft tissues of the anterior chest wall adjacent to left internal mammary artery (LIMA) (►**Fig. 2**). We also attach a video for clear description (►**Video 1**).

Video 1

An unusual position for the permanent pacing wire. Online content including video sequences viewable at: www.thieme-connect.com/products/ejournals/html/10.1055/s-0034-1384667.

Brief Summary

A 20-year-old female patient had ventricular standstill (6-second durations) on the "Reveal" monitoring device and hence underwent permanent pacing wire insertion.

Cardiac chamber perforation was suspected because of hemodynamic instability during the procedure. A transthoracic echocardiography confirmed a large pericardial collection. Attempts to drain the pericardial fluid in catheter laboratory by interventional cardiologists failed as part of the fluid could be drained. The patient was referred to the Cardiothoracic Surgeons, Heart and Lung Centre.

A midline sternotomy was performed under general anesthetic. The pericardium was incised and blood and blood clots were drained from the pericardial cavity. The RV pacing wire was seen coming out though the left ventricle just lateral to the LAD but medial to the diagonal for approximately 2 cm. It traveled through the pericardium and hit the left fourth intercostal artery on the anterior chest wall (►**Figs. 1** and **2**). It also left an indentation at the anterior chest wall adjacent to LIMA (►**Fig. 2B**).

The pacing wire was pushed back into the ventricular cavity and the ventricular wall defect was closed with 4–0 Prolene pledgetted sutures. The intercostal artery was diathermized to achieve hemostasis. The left pleural

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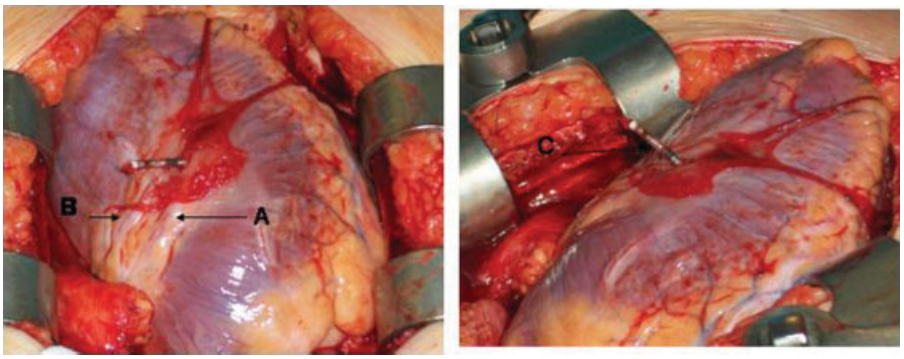

Fig. 1 Permanent pacing wire perforating the anterior left ventricular wall adjacent to the left anterior descending artery (LAD). (A) LAD, (B) diagonal artery, and (C) perforated permanent pacing wire

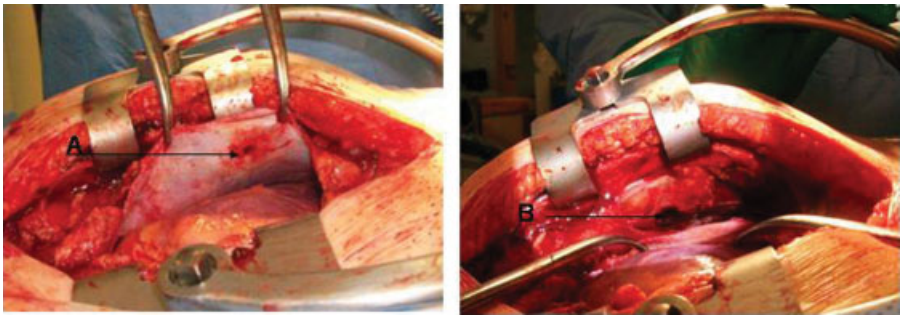

Fig. 2 The tip of the pacing wire perforated the overlying pericardium and left footprints on the adjacent soft tissues of the overlying chest wall. (A) Site of perforation in the pericardium and (B) erosion on the adjacent soft tissues of the chest wall caused by the tip of the pacing wire.

cavity was opened and 3 L of blood and a significant amount of clot was removed from the pleural cavity. No other bleeding points were identified. Temporary epicardial pacing wires were positioned (two atrial and two ventricular).

Once patient had recovered from surgery, the permanent pacing wires were pulled out by the cardiologists in the catheter laboratory and replaced with another permanent pacing device. Later, the epicardial pacing wires were pulled out. The patient made a good recovery.