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A provisional pacemaker implantation: an unexpected event

Implante de marca-passo provisório: um evento inesperado

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DOI: 10.31160/JOTCI202028A20200030

Figure 1. Coronary angiography. (A) Pacemaker electrode compressing the left anterior descending artery. (B) Normal left anterior descending artery after removal of the pacemaker electrode.

A 69-year-old female patient, with a history of hypertension and type 2 diabetes mellitus, was referred to our organization for an episode of intense dizziness and heart rate of 35bpm. A second grade 2:1 atrioventricular (AV) nodal block was identified, followed by sinus rhythm. Dizziness improved after return to sinus rhythm. The patient denied chest pain, dyspnea and syncope. The physical examination was normal and the electrocardiogram showed left ventricular overload.

She was admitted to the coronary unit, evolved with complaint of dizziness, being identified again a second-grade 2:1 AV nodal block, and a provisional pacemaker implantation was indicated. From then on, after brachial vein access provisional pacemaker implantation, the patient developed chest pain and increased levels of ultra-sensitive troponin (305ng/mL; 12,529ng/mL; 3,525ng/mL; 1,158ng/mL; upper reference value of 60.00ng/mL).

A coronary angiography was indicated and showed the pacemaker electrode had pierced the septum and compressed the left anterior descending artery (Figure 1A). Electrode removal was performed with assistance of the surgical team. After electrode removal, the flow of left anterior descending artery was normalized with no residual injuries (Figure 1B).

The implantation of the provisional pacemaker is a simple procedure, but may cause complications, the most common being failure of command or sensitivity, or both, regardless of the location of access. Other common complications are ventricular tachycardia during implantation, phlebitis and fever. Sepsis, local infection and pulmonary embolism seem to be related to femoral access and how long the catheter remains. Perforations are related to brachial access.¹

How to cite this article:

Montenegro GL, Montenegro PB, Parente BO. A provisional pacemaker implantation: an unexpected event. J Transcat Intervent. 2020;28:eA20200030. <https://doi.org/10.31160/JOTCI202028A20200030>

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Received on:

Sept 16, 2020

Accepted on:

Oct 15, 2020

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In the present case, the implantation of the provisional pacemaker electrode pierced the interventricular septum, and compressed the left anterior descending artery, which had an intramyocardial path. This led to a non-ST-segment elevation acute coronary syndrome, which was solved by removing the electrode without further complications.

SOURCE OF FINANCING

None.

CONFLICTS OF INTEREST

The authors declare there are no conflicts of interest.

CONTRIBUTION OF AUTHORS

Conception and design of the study: GLM and PBRM; data collection: GLM; data interpretation: GLM, PBRM and GBOP; text writing: GLM; approval of the final version to be published: GLM, PBRM and GBOP.

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