mild vasoplegia and the patient remained in the Coronary Care Unit for 48 hours. A semi-permanent catheter was placed in advance for long-term outpatient antibiotic infusion, and the patient was discharged on the 7th postoperative day.

After one-year follow-up, the patient continues without clinical signs or images of reinfection, and has returned to his daily routine.

Technically, the hemi-commando procedure for double valve endocarditis represents a suitable and relatively less complex option than the “commando surgery”, with the advantage of preserving most of the mitral valve and its subvalvular apparatus. This is beneficial in certain scenarios, such as young patients and patients with poor ventricular function. (1, 2, 3) The integrity of the posterior leaflet and the mitral valve anterior leaflet free edge is required when choosing this procedure. (2)

As a result of intraoperative findings, this procedure should be considered in the following cases:

- Invasive double-valve infective endocarditis.
- Involvement of the aortomitral fibrous skeleton or the anterior leaflet of the mitral valve.

Performing the procedure in a reoperation would increase the surgical risk.

Mid- and long-term outcomes in different series, such as those of David and Navia, support this procedure for endocarditis involving the aortic valve and part of the mitral valve, without need for a double prosthetic replacement. (4, 5)

In previous complicated replacements with extensive destruction, choosing homograft in combination with a bovine pericardial patch to reconstruct the cardiac anatomy is an excellent strategy. (4, 5) We believe that the hemi-commando procedure is a valid option, even in very complex scenarios such as cardiac reinterventions. In certain cases, this type of procedure is the only surgical option to restore the integrity of the heart. More importantly, preserving the mitral subvalvular apparatus and the left ventricular function provides an additional advantage in these high-risk patients.

Conflicts of interest
None declared.

(See authors’ conflicts of interest forms on the website/Supplementary material).

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Subcutaneous Implantable Cardioverter Defibrillator in a Patient with Pacemaker

The implantation of a cardioverter defibrillator has shown to reduce mortality in primary and secondary prevention, in patients at high risk of sudden death. In the last 10 years, a new generation of totally subcutaneous implantable devices has been developed, i.e. extravascular devices that have provided a solution when vascular access must be avoided or is not possible. (1)

Current indications for subcutaneous implantable cardioverter defibrillator (S-ICD) focus on patients with inadequate vascular access, history of infection, or situations where it is preferable to avoid the use of a vascular access. This type of device offers several advantages, including decreased infection risk and freedom from routine venous access, which is particularly important in patients with limited or compromised vascular access or in those with a history of recurrent infection. (2, 3)

Fig. 2. Intraoperative images. A: Prosthetic valve endocarditis. B: Extension of necrotic tissue. C, D: Homograft implantation
of endovascular devices. (2) Moreover, indications should be applied to patients who do not require antitachycardia stimulation or resynchronization therapy, since as they do not have an endocavitary lead they cannot be stimulated, except for subcutaneous post-shock stimulation (30 sec).

The first S-ICD implantation in Argentina was performed in 2017. (3) However, no reports of implantation in a patient with previous endovascular pacemaker have been published to date.

We report the interesting case of a 61-year-old female patient with a permanent pacemaker who required a S-ICD due to progressive deterioration of ventricular function associated with complex ventricular arrhythmia, suspected noncompacted myocardium, and a family history of sudden death.

The patient came to our center with a long-standing medical history. She referred that she had been implanted with a permanent pacemaker due to complete AV block 20 years ago, and had suffered from infectious complications during follow-up. After generator replacement, the patient presented with pocket infection (left prepectoral area) with its subsequent exposure to the armpit, requiring endovascular removal of the leads and contralateral reimplantation (right prepectoral area).

The patient showed progressive deterioration of ventricular function during follow-up. A new echocardiogram validated noncompacted myocardium as the most likely diagnosis since an MRI could not be performed due to MRI-non-compatible pacemaker. During the directed interrogation, the patient referred the sudden death of her son due to unknown reasons.

Taking into account the presence of noncompacted myocardium, the history of previous endovascular infections, and the patient’s reluctance to undergo another endovascular intervention, it was decided to implant a S-ICD as primary prevention of sudden death and to reduce the risks of infectious and mechanical complications in that clinical context.

The patient was permanently stimulated by the pacemaker. The usual screening for the correct detection of signals with three different vectors was successfully performed.

Finally, the device was implanted with the usual technique in a subcutaneous position, in the mid-axillary line between the serratus major and the wide dorsal muscles. The lead was tunneled and placed in the left parasternal area and an induction test was performed. Induced ventricular fibrillation was properly sensed, effective defibrillation was achieved with the first shock, and rhythm stimulated by endocavitary pacing was resumed. The patient was discharged, and outpatient follow-up continues without complications.

Implantation of cardioverter defibrillators may present complications. However, with the advent of S-ICD, all potential complications associated with endovascular implantation (pneumothorax, catheter displacement, endovascular infections, cardiac tamponade, etc.) have been overcome. One of the main remaining concerns about S-CDI are inappropriate shocks. Adequate QRS sensing is necessary to reduce them. This is done using pre-screening to evaluate whether the patient is a candidate or not, i.e. whether the sensing vectors will be able to discriminate the QRS properly.

The recent addition of specific filters has shown...
encouraging results in reducing inappropriate therapies. (4) Maintaining adequate sensing in pacemaker patients could be a challenge, given the potential presence of both native and stimulated QRS and, in turn, the resulting change in T-wave morphology.

International experience supports the use of S-ICD in patients with pacemakers or resynchronization devices. (5, 6) Recommendations to reduce the risk of sensing failure or oversensing include testing vectors with native and stimulated QRS, limiting the maximum pacemaker tracking rate, and performing a defibrillation test to confirm proper sensing of ventricular fibrillation.

Conflicts of interest
None declared.

(See authors’ conflicts of interest forms on the website/Supplementary material).

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