

ELECTRA

4-5 DÉCEMBRE 2021

HOTEL VILLA M.
MARSEILLE | FRANCE

1⁵èmes journées françaises
pratiques de rythmologie
& de stimulation cardiaque

COMITÉ D'ORGANISATION

Frédéric FOSSATI, Lille
Maxime GUENOUN, Marseille
Arnaud LAZARUS, Paris
Nicolas LELLOUCHE, Créteil
Jacques MANSOURATI, Brest
Jérôme TAÏEB, Aix-en-Provence

CONGRES-ELECTRA.COM





ELECTRA 

4-5 DÉCEMBRE 2025

VILLA M. - MARSEILLE | FRANCE

19^{èmes} journées françaises
pratiques de rythmologie
& de stimulation cardiaque

WWW.CONGRES-ELECTRA.COM

La loge du PM/DAI

Incision et hémostase optimale : préparation, technique, outils

Dr Guillaume Domain, CHU d'Orléans



ELECTRA



4-5 DÉCEMBRE 2025

VILLA M. - MARSEILLE | FRANCE

19^{èmes} journées françaises
pratiques de rythmologie
& de stimulation cardiaque

WWW.CONGRES-ELECTRA.COM

Conflit d'intérêt

Aucun



ELECTRA

4-5 DÉCEMBRE 2025

VILLA M. - MARSEILLE | FRANCE

19^{èmes} journées françaises
pratiques de rythmologie
& de stimulation cardiaque

WWW.CONGRES-ELECTRA.COM



ESC

European Society
of Cardiology

Europace (2021) 00, 1–26
doi:10.1093/europace/euaa367

POSITION PAPER

EHRA expert consensus statement and practical guide on optimal implantation technique for conventional pacemakers and implantable cardioverter-defibrillators: endorsed by the Heart Rhythm Society (HRS), the Asia Pacific Heart Rhythm Society (APHRS), and the Latin-American Heart Rhythm Society (LAHRS)

Table 6 Perioperative complications with PM and ICD implantation and their incidence

Complication	Incidence
Procedure-related mortality ^{17,157–159}	0–0.1%
30-day mortality	0.6–1.4%
Pneumothorax ^{17,42,43,135,160,178–180}	0.4–2.8%
Clinically relevant perforation ^{17,84,120,135,160–165}	0.1–1.5%
Pericardial effusion ¹⁶²	10.2%
Tamponade ^{84,162}	0.5–1.5%
Pocket haematoma ^{10,11,17,118,119,181}	0.2–16.0%
Infection ⁷	0.6–3.4%
Lead dislodgment ^{3,45,135,160,180,187,188}	1.2–3.3%
Other: arrhythmias ¹²⁰ , pleural effusion, haemothorax, ^{120,169} aortic root perforation, ^{124,130–133} lung perforation, ¹⁷¹ pneumopericardium, ^{128,170} constrictive pericarditis, ^{168,242} air embolism, ^{190,191} myocardial infarction, ^{96–98,120} diaphragmatic ¹³⁵ / intercostal ¹⁷² muscle stimulation, stroke, ¹²⁰ brachial plexus palsy, phrenic nerve palsy, ⁴⁹ acute access vein thrombosis, pulmonary embole, ¹⁹³ allergy, ^{238–241} damage to tricuspid valve ¹³⁵	<0.5%



Original Investigation

Iodinated Adhesive Drapes for Repeat Cardiac Implantable Device Implantation A Randomized Clinical Trial

Alper Aydin, MD¹; Mehrdad Golian, MD¹; Andres Klein, MD¹ ; et al

Preoperat

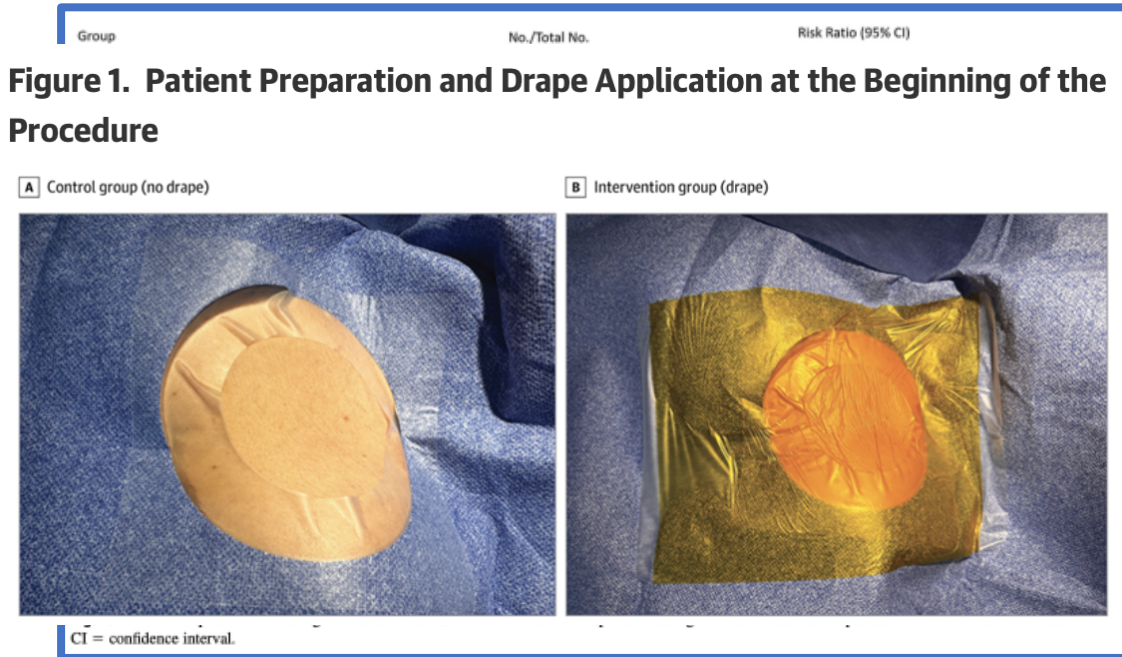
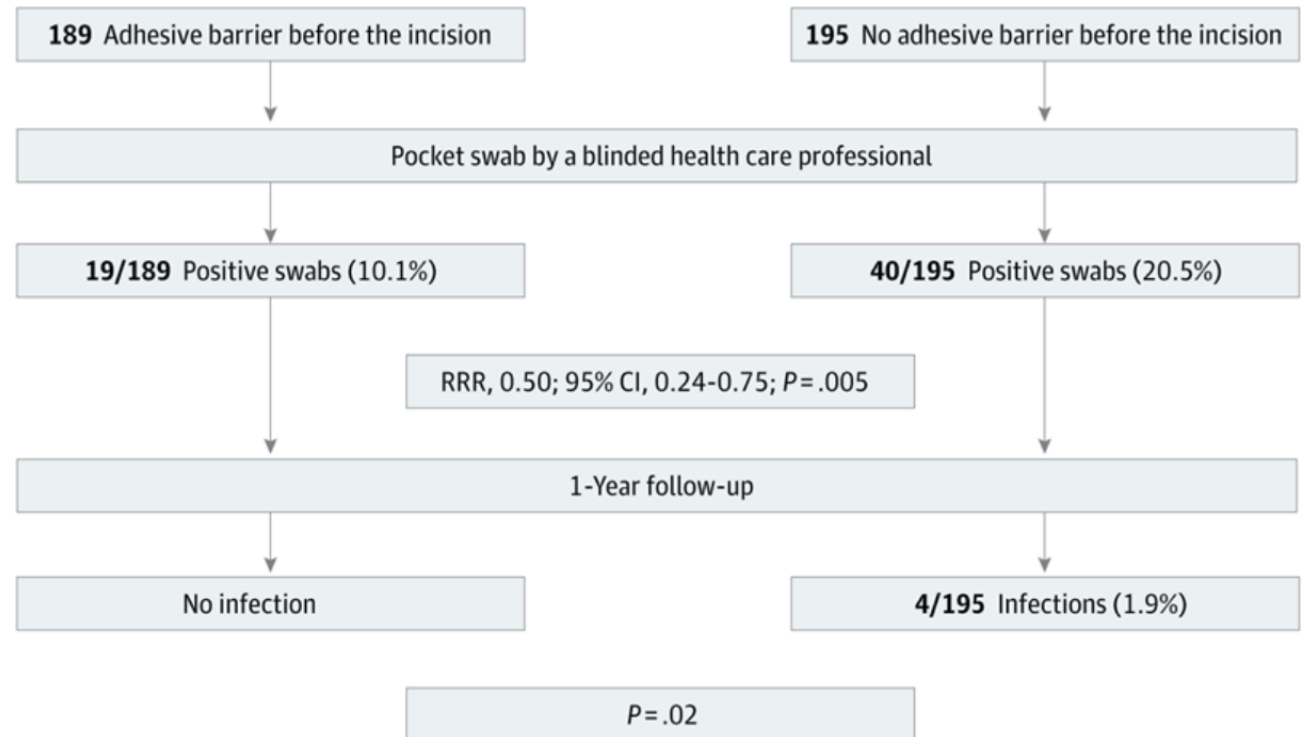


Figure 3. Primary and Secondary Outcomes





ELECTRA



4-5 DÉCEMBRE 2025

VILLA M. - MARSEILLE | FRANCE

19^{èmes} journées françaises
pratiques de rythmologie
& de stimulation cardiaque

WWW.CONGRES-ELECTRA.COM

Local anesthesia

Xylocaïne (Lidocaïne 1%)

Maximum dose 4,5 mg/kg ou 300 mg

Semi-diluted to administer a larger volume over a greater area.

Mixed with a **long-acting local anaesthetic** (Bupivacaine 0,25%, Ropivacaine 0,5%).

LAS = Local Anesthetic Systemic Toxicity (generally does not occur with lidocaine plasma levels less than 10 µg/mL)



ELECTRA



19^{èmes} journées françaises
pratiques de rythmologie
& de stimulation cardiaque

WWW.CONGRES-ELECTRA.COM

2 sites for incision

- Inferior and parallele
- Oblique along the de

(A)



(B)



(C)



(D)





ELECTRA

4-5 DÉCEMBRE 2025

aises
ogie
liaque
A.COM

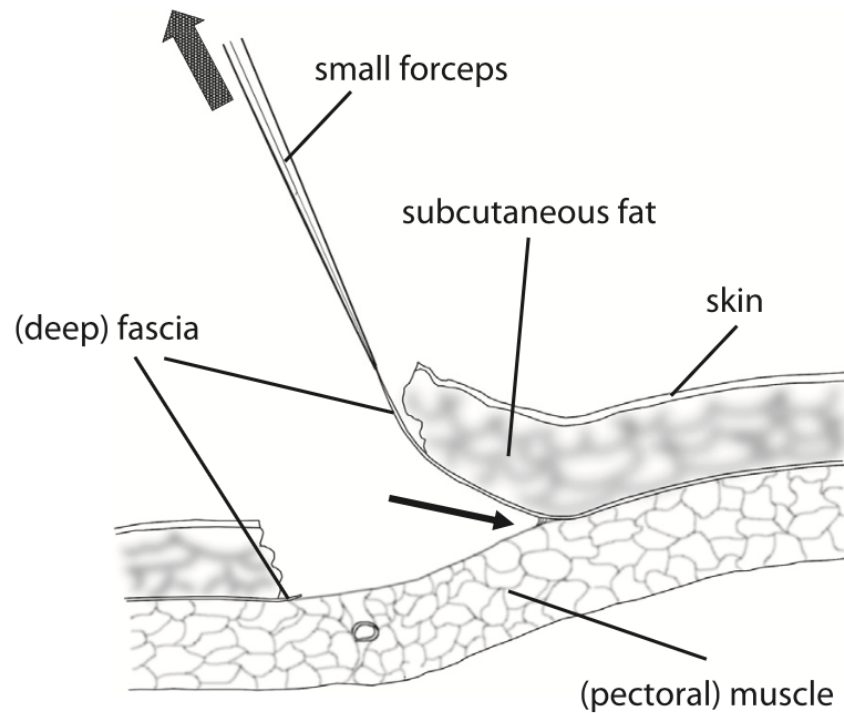


Fig. 1. To minimize traumatic pocket complications such as hematoma formation, prepectoral subfascial implantation has been employed. By chipping off the entire muscle body, using the fingers to gently spread the tissues apart slightly medially and caudally, the pocket is formed simply by the reduced adhesion between the fascia and muscle.

il and
durin
ng an
rigrat





ELECTRA

4-5 DÉCEMBRE 2025

VILLA M. - MARSEILLE | FRANCE

19^{èmes} journées françaises
pratiques de rythmologie
& de stimulation cardiaque

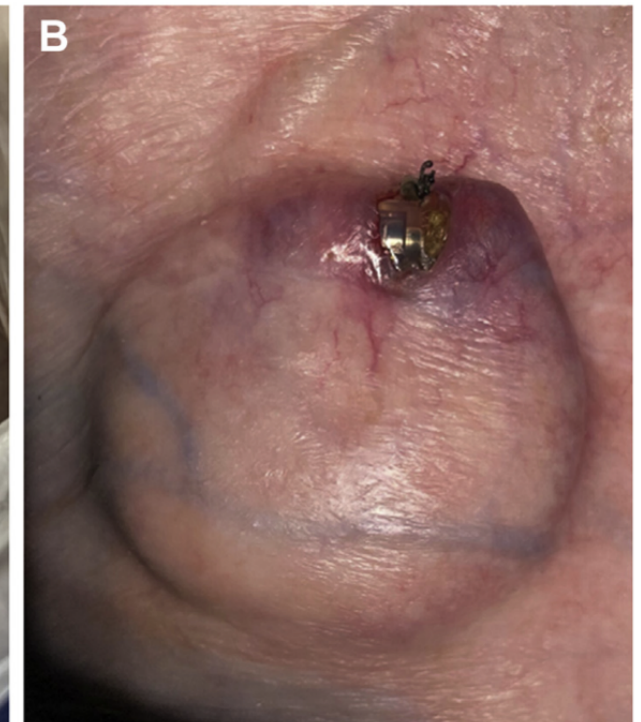
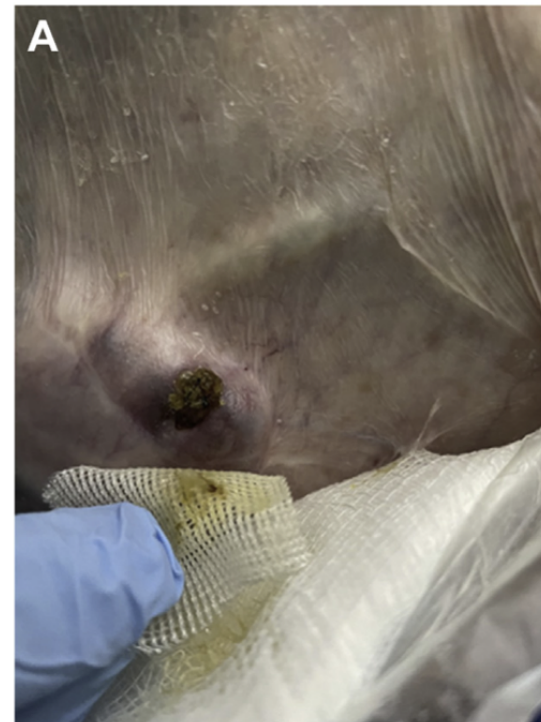
WWW.CONGRES-ELECTRA.COM

Novel Teaching Points

- Pacemaker pocket erosion is uncommon, but elderly, frail patients are at increased risk due to loss of subcutaneous fat and fat redistribution.
- The risk for device erosion could be mitigated during a generator replacement by increasing the size of the pocket, using a submuscular pocket, and potentially, using an absorbable antibacterial envelope.
- Fixation of device generators is considered optional.

erc

ie a





ELECTRA

4-5 DÉCEMBRE 2025

VILLA M. - MARSEILLE | FRANCE

19^{èmes} journées françaises
pratiques de rythmologie
& de stimulation cardiaque

WWW.CONGRES-ELECTRA.COM

Table 4: Characteristics of the patients with PH

Patients	1	2	3	4	5	6	7
Study Group	A	B	A	A	A	A	A
Age	64	64	64	66	64	57	69
Gender	male	female	male	male	male	male	male
BMI	34,5	27,2	28,4	21,6	42,9	31,7	34,1
AP/AC treatment	-	AC	AC	AC	-	AC	AC
Pacemaker type*	DCh	DCh	SCh	DCh	DCh	SCh	SCh
Site of device pocket**	SC	SC	SF	SC	SC	SC	SC
Venous access***	C	S	C	S	S	S	C

*DCh – dual-chamber, SCh – single-chamber; **SC-subcutaneous, SF-subfascial; ***C-cephalic, S-subclavian

Solution of
To reduct po



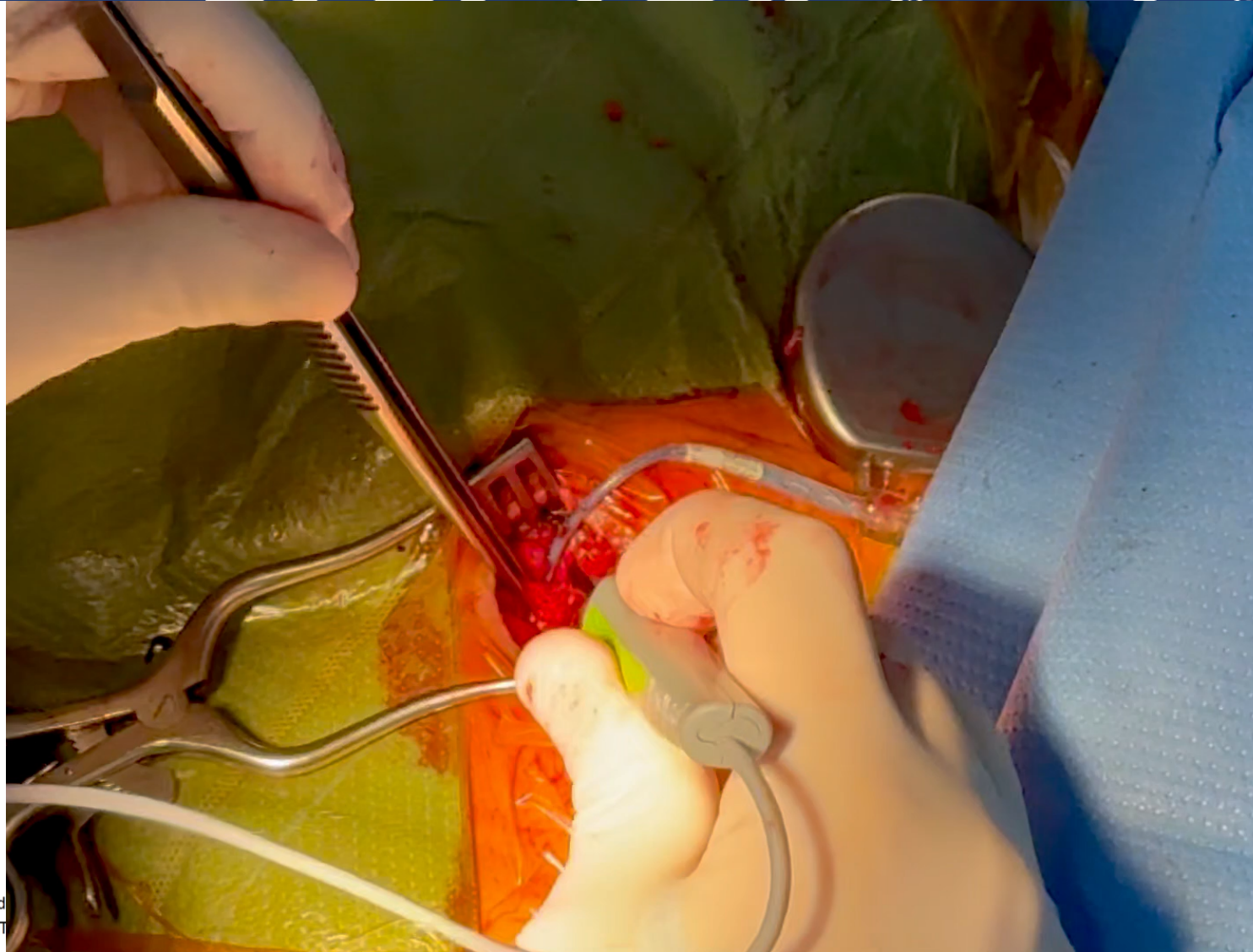


Low-temper

Low-temper
implantable

Parallel to th
Without proc

Lead or Procedure Related Adverse Event Rate (%)



Stand
Low T

cardiac



ELECTRA

4-5 DÉCEMBRE 2025

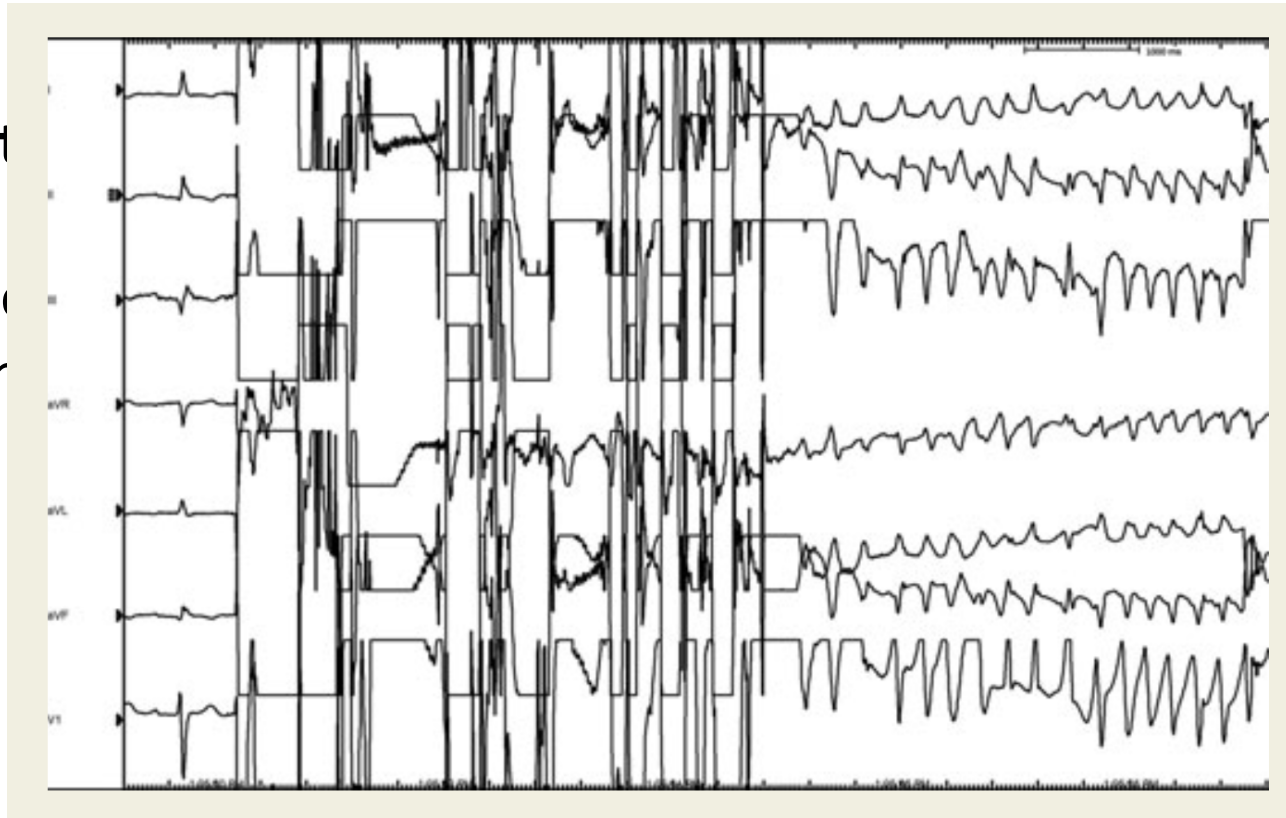
VILLA M. - MARSEILLE | FRANCE

19^{èmes} journées françaises
pratiques de rythmologie
& de stimulation cardiaque

WWW.CONGRES-ELECTRA.COM

Ventricular arrhythmia

Electrocautery should not come into contact with the lead insulation failure,



generator (and should not be used in case of lead



ELECTRA

4-5 DÉCEMBRE 2025

VILLA M. - MARSEILLE | FRANCE

19^{èmes} journées françaises
pratiques de rythmologie
& de stimulation cardiaque

WWW.CONGRES-ELECTRA.COM

Suction Drain

67 patients

18-month follow-up

1 hematoma (1.4%)

No infection

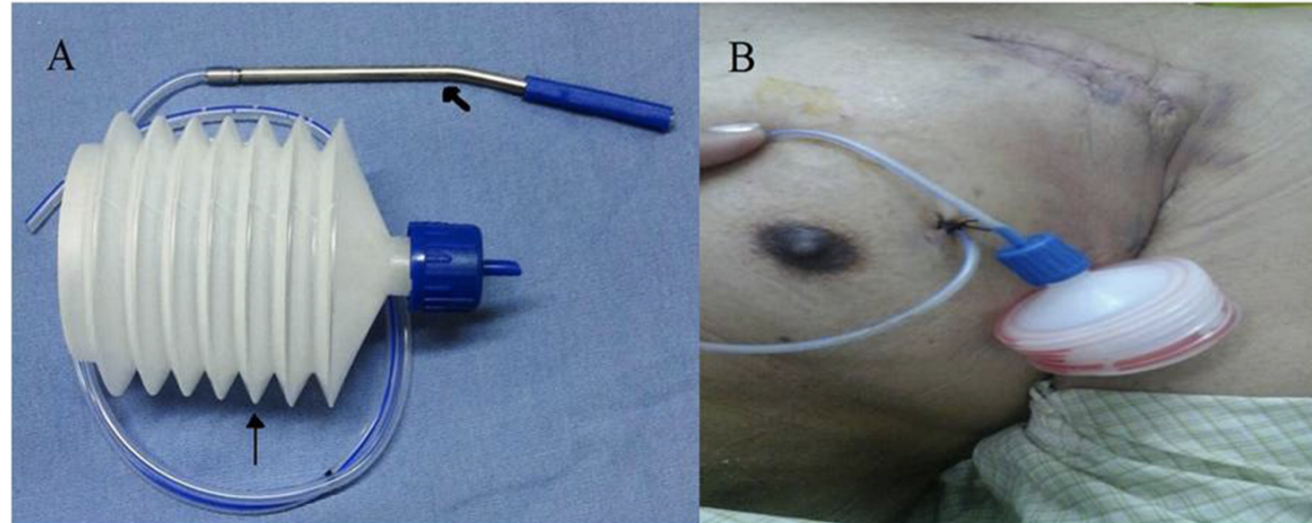


Fig. 1. Close Wound Suction Unit.

Panel A: The short arrow points to the needle with extension tube and long arrow points to the suction drain. Panel B: Shows the suction unit in situ in the pacemaker pocket of a patient who had undergone device implantation.



ELECTRA

4-5 DÉCEMBRE 2025

VILLA M. - MARSEILLE | FRANCE

19^{èmes} journées françaises
pratiques de rythmologie
& de stimulation cardiaque

WWW.CONGRES-ELECTRA.COM

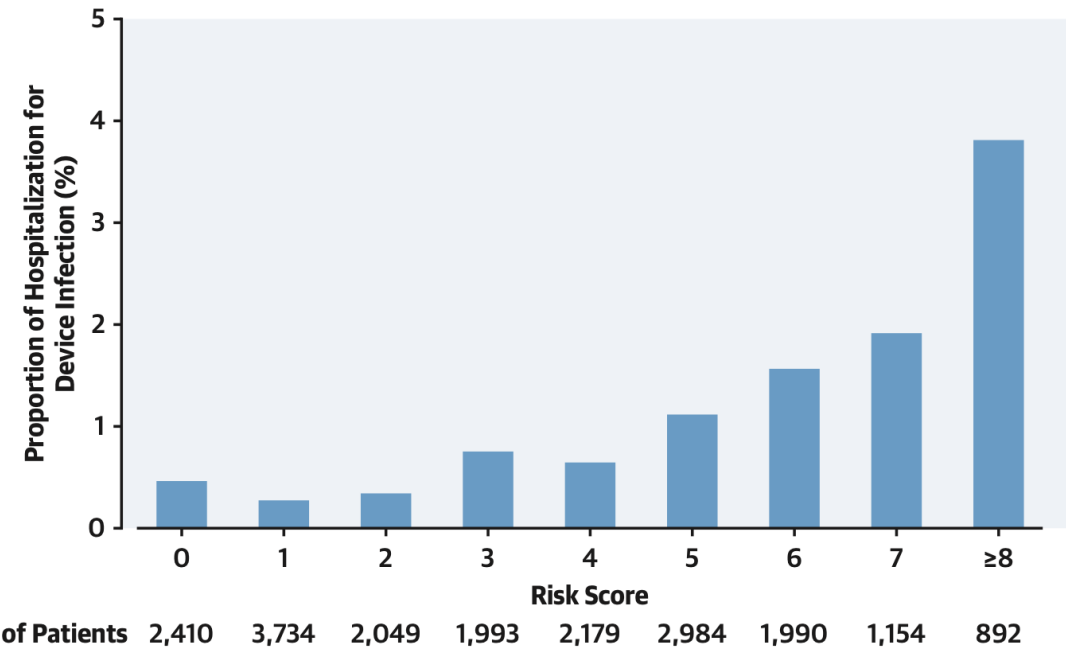
TABLE 3 Full Prediction Model for Hospitalization due to Device Infection

	OR (95% CI)	β Coefficient	p Value
Age*	–	-0.0274	0.018
1/age ^{2*}	–	-1441.798	0.127
Procedure type (reference: pacemaker)			
ICD	1.77 (1.09-2.87)	0.5717	0.020
CRT	2.73 (1.72-4.31)	1.0026	<0.001
Revision/upgradet	4.01 (2.62-6.13)	1.3881	<0.001
Renal insufficiency	1.45 (1.00-2.09)	0.3697	0.047
Immunocompromised	2.28 (1.05-4.96)	0.8261	0.037
Number of previous procedure (reference: 0)			
1	1.51 (0.99-2.32)	0.4146	0.058
≥2	3.43 (2.14-5.48)	1.2321	<0.001
Intercept	–	-3.3207	0.001

All variables identified in univariate analysis with $p < 0.25$ were tested for inclusion with a backward elimination approach. Covariates with p values of >0.1 in the multivariable model were individually removed in a stepwise fashion, starting with the one with the highest p value. Finally, to identify other remaining potential confounders, all dropped variables were individually added to the multivariable model and kept in the model if the effect size of any of other predictors changed by $>10\%$. *Age was fractional polynomial transformed. †Revision or upgrade: pocket and/or lead revision and/or system upgrade (i.e., with adding new lead[s]).

CI = confidence interval; OR = odds ratio; other abbreviations as in [Table 1](#).

CENTRAL ILLUSTRATION Rate of Device Infection Stratified by PADIT Infection Risk Score



Birnie, D.H. et al. *J Am Coll Cardiol.* 2019;74(23):2845-54.

This figure illustrates how the PADIT score might be used in clinical practice, with the graph showing the estimated risk of infection based on the calculated score.



ELECTRA

4-5 DÉCEMBRE 2025

VILLA M. - MARSEILLE | FRANCE

19^{èmes} journées françaises
pratiques de rythmologie
& de stimulation cardiaque

WWW.CONGRES-ELECTRA.COM

Take Home Message

Use iodinated adhesive drapes

Oblique incision along the delto-pectoral groove

Pocket subfascial creation at the beginning with electrocautery

Consider a submuscular pocket

Rigorous hemostasis and irrigation with saline

Low temperature electrocautery for pocket revision

Consider an antibacterial envelope based on the PADIT risk score.

No suction drain, no hemostatic agent

