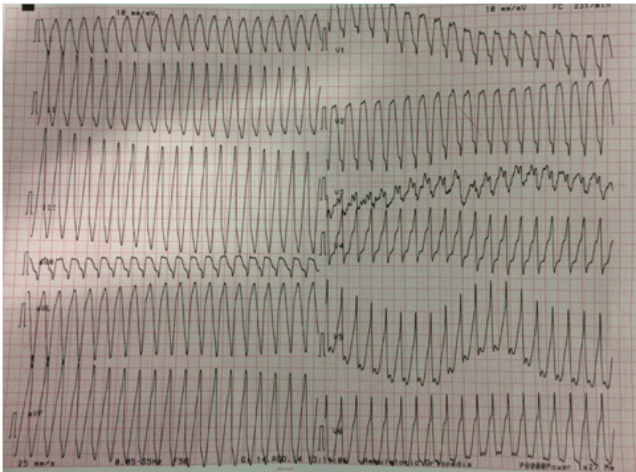


# V course on adult congenital heart disease

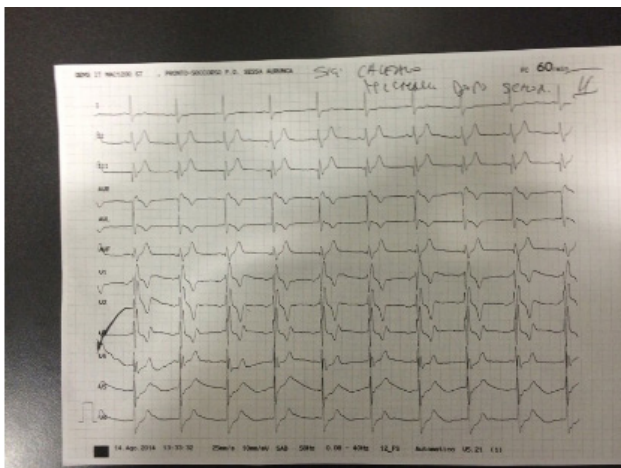
## Proceeding

Absence of symptoms and clinical events until 14.08.2014 when he felt palpitation during strenuous physical activity (running).

ECG recorded at Sessa Aurunca Hospital showed monomorphic ventricular tachycardia



Successful Electrical Cardioversion with 200 J DC Shock



Ecg After Electrical Cardioversion

## Asymptomatic

- 63 KG, 171 CM, B.P. 86/50 MMHG.
- Systolic Murmur: 4/6 over the left third and fourth intercostal spaces along the sternal border.
- ECG: HR 57 BPM. PR = 180 MSEC. QRS = 150 MSEC. Complete Right Bundle Branch Block With Secondary Abnormalities Of The Ventricular Repolarization.

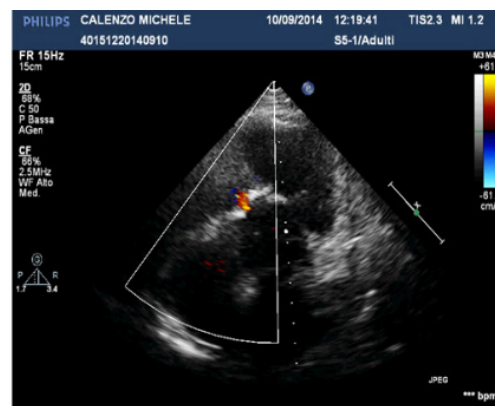
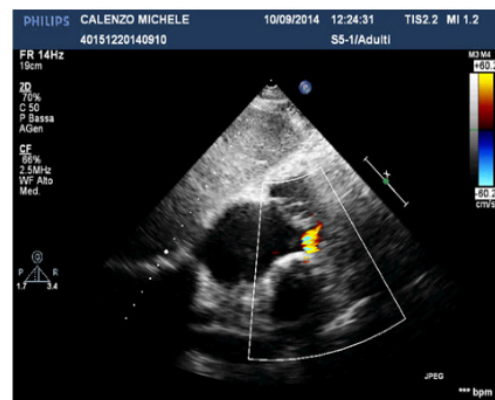
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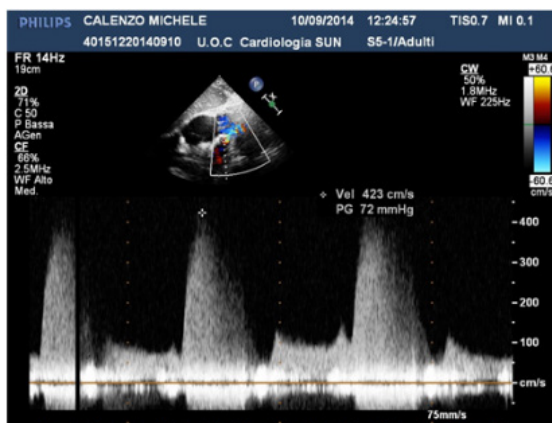
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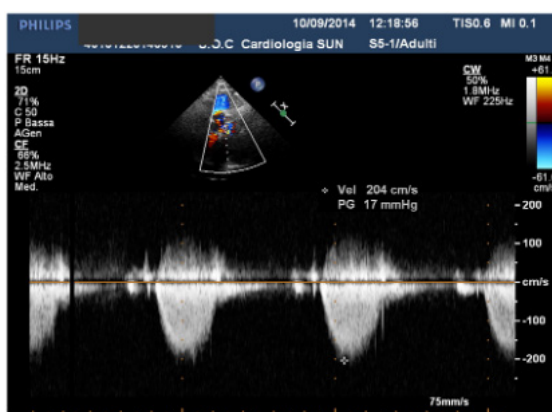
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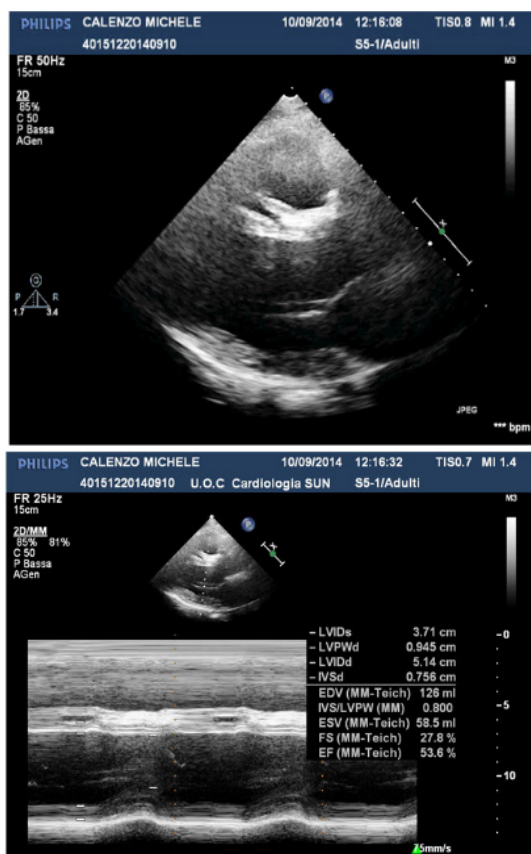




Residual mild VSD.



No residual RVOT obstruction.



## Echocardiography

- Residual mild VSD.
- No residual right outflow tract obstruction.
- Good biventricular size and function.
- Slight biatrial dilatation.

## What guidelines says

ESC Guidelines for the management of grown-up congenital heart disease (new version 2010).

## Sudden cardiac death (SCD) in GUCH

- SCD is of particular concern IN GUCH patients.
- Five defects with greatest known risk:
  - Repaired Tetralogy of Fallot,
  - TGA with atrial switch,
  - Congenitally corrected TGA,
  - Aortic Stenosis,
- Univentricular syncope is a warning event requiring careful evaluation of arrhythmia.
- Although various risk factors have been defined, algorithms for risk assessment and indications for ICD implantation have so far not been well established.

## Atrial/ventricular tachycardia and SCD in TOF

This is related to progressive haemodynamic problems and/or surgical scarring, and thus is seen with increasing frequency with longer follow-up. SCD is reported in 1-6% of cases [in most instances due to VT/ventricular fibrillation (VF)], accounting for approximately a third to a half of late deaths.

## Current guidelines for the prevention of scd give the following recommendations for patients with CHD: ICD

- Implantation is indicated in survivors of cardiac arrest after exclusion of reversible causes (IB9).
- Patients with spontaneous sustained ventricular tachycardia (VT) should undergo invasive haemodynamic and EP evaluation.
- Recommended therapy includes catheter ablation or surgical resection to eliminate VT. If that is not successful, ICD implantation is recommended (IC9).
- Invasive haemodynamic and EP evaluation is reasonable in patients with unexplained syncope and impaired ventricular function. In the absence of a defined and reversible cause, ICD implantation is reasonable (IIaB9).
- EP testing may be considered for patients with ventricular couplets or non-sustained VT to determine the risk of sustained VT (IIbC9).
- Prophylactic antiarrhythmic therapy is not indicated for asymptomatic patients with isolated premature ventricular beats (IIIC9).

### General Indications for EP and ICD Implantation in GUCH

Class*	Level <sup>b</sup>
I	B
I	C
IIa	B
IIb	C

- ICD implantation is indicated in survivors of cardiac arrest after exclusion of reversible causes.
- Patients with spontaneous sustained VT should undergo invasive haemodynamic and EP evaluation. Recommended therapy includes catheter ablation or surgical resection to eliminate VT. If that is not successful, ICD implantation is recommended.
- Invasive haemodynamic and EP evaluation is reasonable in patients with unexplained syncope and impaired ventricular function. In the absence of a defined and reversible cause, ICD implantation is reasonable.
- EP testing may be considered for patients with ventricular couplets or non-sustained VT to determine the risk of sustained VT.

a = class of recommendation, b = level of evidence  
EP = electrophysiology, ICD = implanted cardioverter defibrillator, VT = ventricular tachycardia

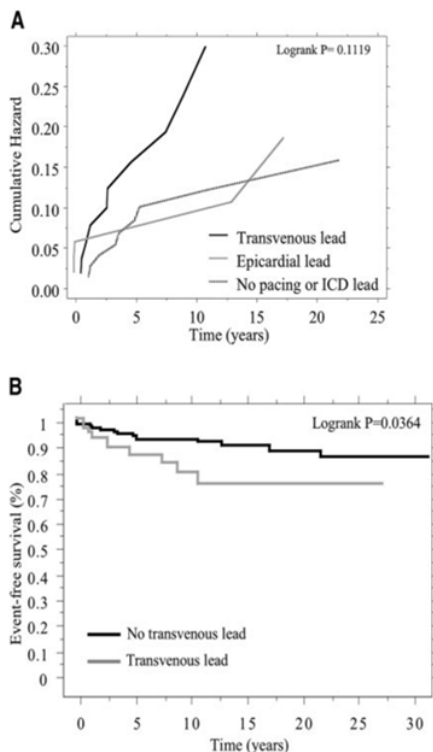


“The complex anatomy and history of multiple previous surgeries in adults with congenital heart disease pose many limitations and technical challenges related to the placement of a pacemaker or AICD.”

### Aicd implantation increases thromboembolic risk

#### Transvenous Pacing Leads and Systemic Thromboemboli in Patients With Intracardiac Shunts A Multicenter Study

Paul Khairy, MD, PhD; Michael J. Landzberg, MD; Michael A. Gatzoulis, MD, PhD; Lise-Andrée Mercier, MD; Susan M. Fernandes, MPH, PA-C; Jean-Marc Côté, MD; Jean-Pierre Lavoie, MD; Anne Fournier, MD; Peter G. Guerra, MD; Alexandra Frogoudaki, MD; Edward P. Walsh, MD; Annie Dore, MD; for the Epicardial Versus Endocardial pacing and Thromboembolic events (EVENT) Investigators



202 patients with documented intracardiac shunts

- Baseline risk of systemic thromboemboli in pts with intracardiac shunts was 0.5% to 0.7% per year.
- Transvenous PMK or ICD leads increased this risk >2 fold.
- Importance of an epicardial approach.

### Acknowledgment

None.

### Conflicts of interest

Author declares there are no conflicts of interest.

### Funding

None.