

## CONTINUING MEDICAL EDUCATION ΣΥΝΕΧΙΖΟΜΕΝΗ ΙΑΤΡΙΚΗ ΕΚΠΑΙΔΕΥΣΗ

### Electrocardiogram Quiz – Case 34

A 53-year-old male with a history of smoking and dyslipidemia under treatment presented to the Emergency Department with chest pain of half an hour duration. The clinical examination and the vital signs of the man were normal. The 12-lead surface electrocardiogram (ECG) is depicted in figure 1.

#### Questions

- What abnormalities are depicted on the 12-lead ECG (fig. 1)?
- What is the clinical significance of these abnormalities?

#### Comment

The *de Winter* ECG pattern is an anterior ST segment elevation myocardial infarction (STEMI) equivalent that presents without obvious ST segment elevation.

The pattern was first reported in a 2008 case series by *de Winter* and *Wellens*, who observed this ECG pattern in 30/1,532 patients with acute left anterior descending (LAD) artery occlusions (2% of cases). Patients with the *de Winter* ECG pattern are younger, more likely to be male and with a higher incidence of hypercholesterolemia compared to patients with a classic STEMI pattern. There is now growing evidence to suggest that the *de Winter* ECG pattern is highly predictive of acute LAD occlusion.

The ECG characteristics of *de Winter* sign include: tall, prominent, symmetric T waves in the precordial leads, upsloping ST segment

depression >1 mm at the J-point in the precordial leads, absence of ST segment elevation in the precordial leads, ST segment elevation (0.5–1 mm) in lead aVR. It should be noticed that “normal” STEMI morphology may precede or follow the *de Winter* ECG pattern.

#### References

- DE WINTER RJ, VEROUDEN NJ, WELLENS HJ, WILDE AA; INTERVENTIONAL CARDIOLOGY GROUP OF THE ACADEMIC MEDICAL CENTER. A new ECG sign of proximal LAD occlusion. *N Engl J Med* 2008, 359:2071–2073
- MARTÍNEZ-LOSAS P, FERNÁNDEZ-JIMÉNEZ R. *De Winter* syndrome. *CMAJ* 2016, 188:528

Corresponding author:

E.G. Petrou, Division of Cardiology, “Onassis” Cardiac Surgery Centre, 356 Sygrou Ave., GR-176 74 Kallithea, Greece  
e-mail: emmgpetrou@hotmail.com

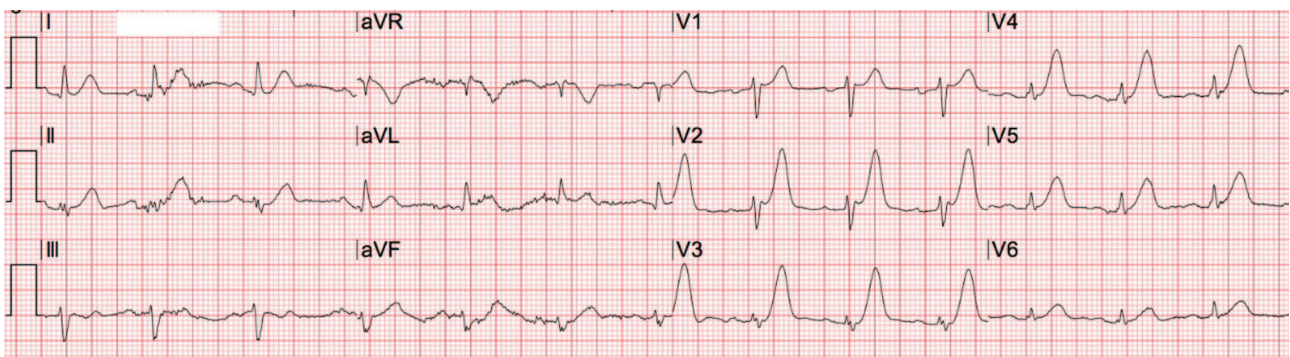


Figure 1

*Diagnosis: De Winter sign*