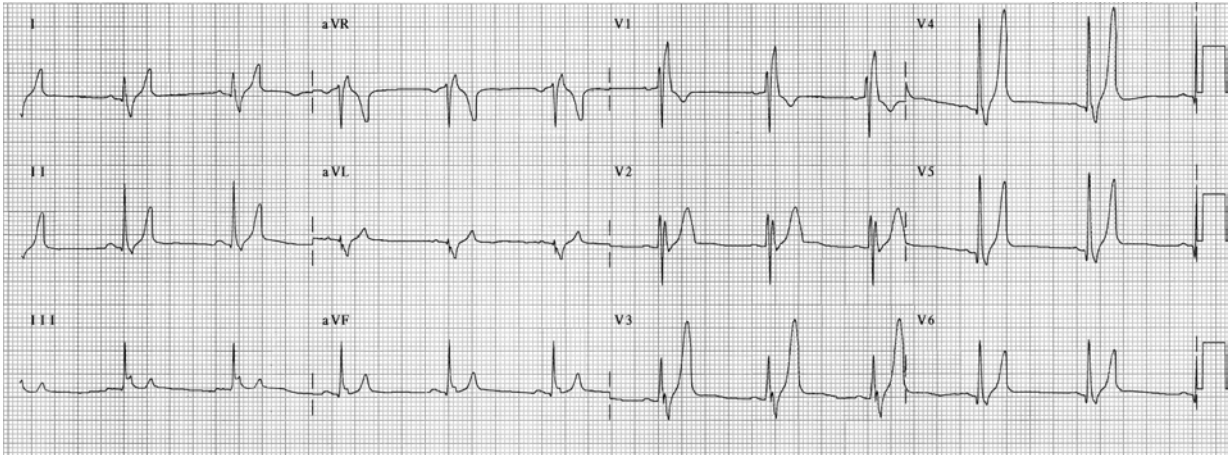


Figure 1

**Name:** JSVB; **Age:** 27; **Sex:** Male; **Race:** white; **Weight:** 67 Kg.  
**Height:** 1.72 m. **Date:** 24/06/2004; **Medication in use:** None.



**Rhythm:** Sinus rhythm; **Heart Rate:** 65bpm; **P wave:** S $\hat{A}$ P axis: + 54 $^{\circ}$  in FP e fore head in HP; Duration: 80ms; Voltage: 1mm; **PR interval:** 134ms; **QRS:** S $\hat{A}$ QRS: 106 $^{\circ}$ ; in FP and forehead in HP; QRS duration (QRSD): 120ms; QRS morphology: triphasic rSR' pattern in lead V<sub>1</sub> and wide S wave in left leads DI, aVL V<sub>5</sub> and V<sub>6</sub> (right terminal forces); R peak time > 50 ms in lead V<sub>1</sub>. **T wave:** Morphology: tall waves T from V<sub>3</sub> to V<sub>5</sub> with narrow bases and tending to be symmetrical (the patient does not have increase of the seric potassium); S $\hat{A}$ T: + 42 $^{\circ}$  in FP and directed lightly for front and below;

**QT/QTc:** 302/315: short for rate (The lower limit for a heart rate of 67 bpm in men is 324ms<sup>1</sup>);

**JT/JTc:** 182/199ms: extremely short (QT-QRSD = JT. 302-120 = 182ms). (The lower limit for a heart rate of 67 bpm in men is 224ms).

#### Conclusion

- 1) CRBBB;
- 2) Long QRSD;
- 3) Short QT interval without drugs, electrolytes unbalance or pathophysiologic states associates;
- 4) Very short JT interval;
- 5) Probable early repolarization patter.

#### Reference

- 1) Sagie A, Larson MG, Goldberg RJ, Bengtson JR, Levy D. An improved method for adjusting the QT interval for heart rate (the Framingham Heart Study) Am J Cardiol 1992; 70:797-801.

Figure 2

### QT AND JT INTERVALS

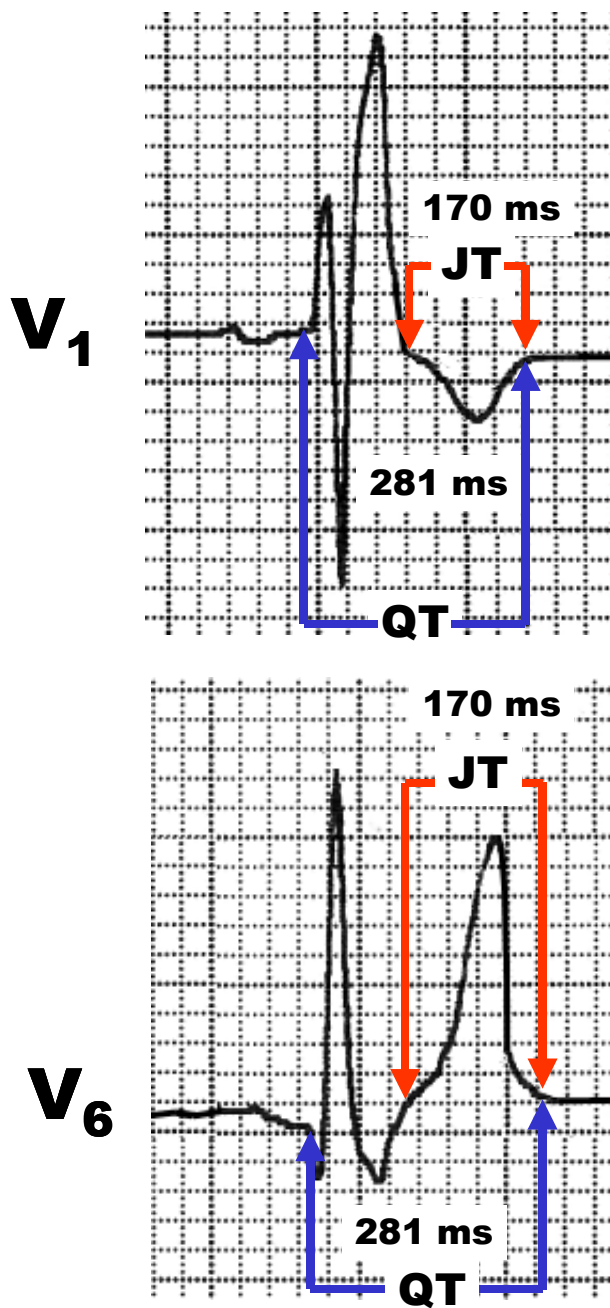


Figure 3

## VECTRCARDIOGRAM

Name: JSVB; Age: 27; Sex: Male; Race: white; Weight: 67 Kg.

Height: 1.72 m. Date: 24/06/2004; Medication in use: None.

Sensi. 4  
Timer 2 msec  
Loop All Loop  
Sagittal Left  
Z Axis Back  
Filter Hum  
Muscle  
Drift

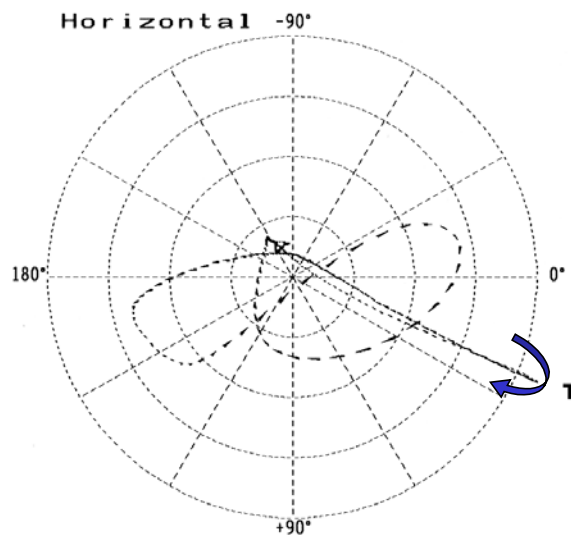
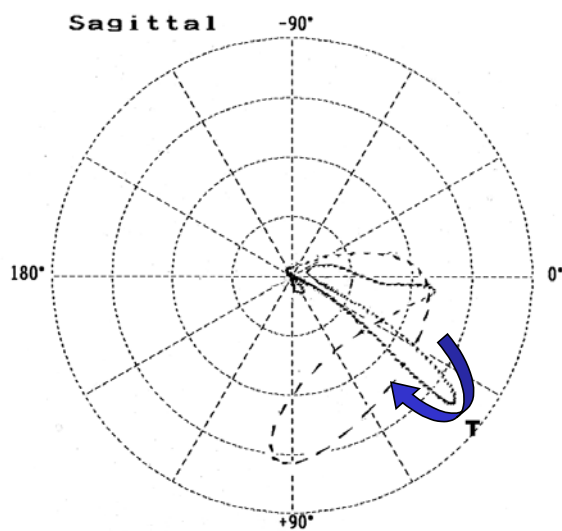
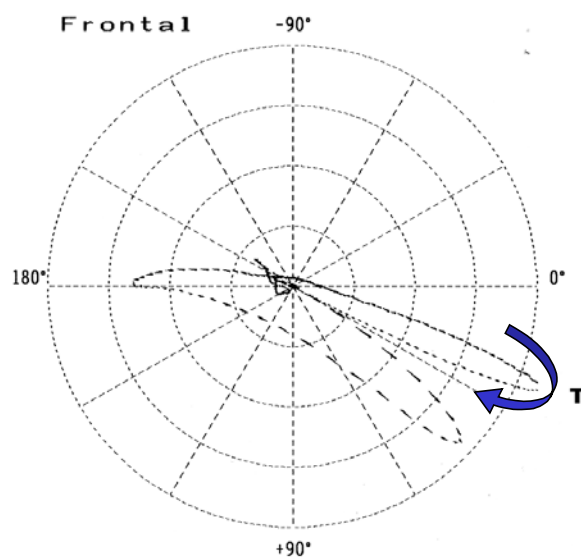


Figure 4

### FRONTAL PLANE ECG/VCG CORRELATION

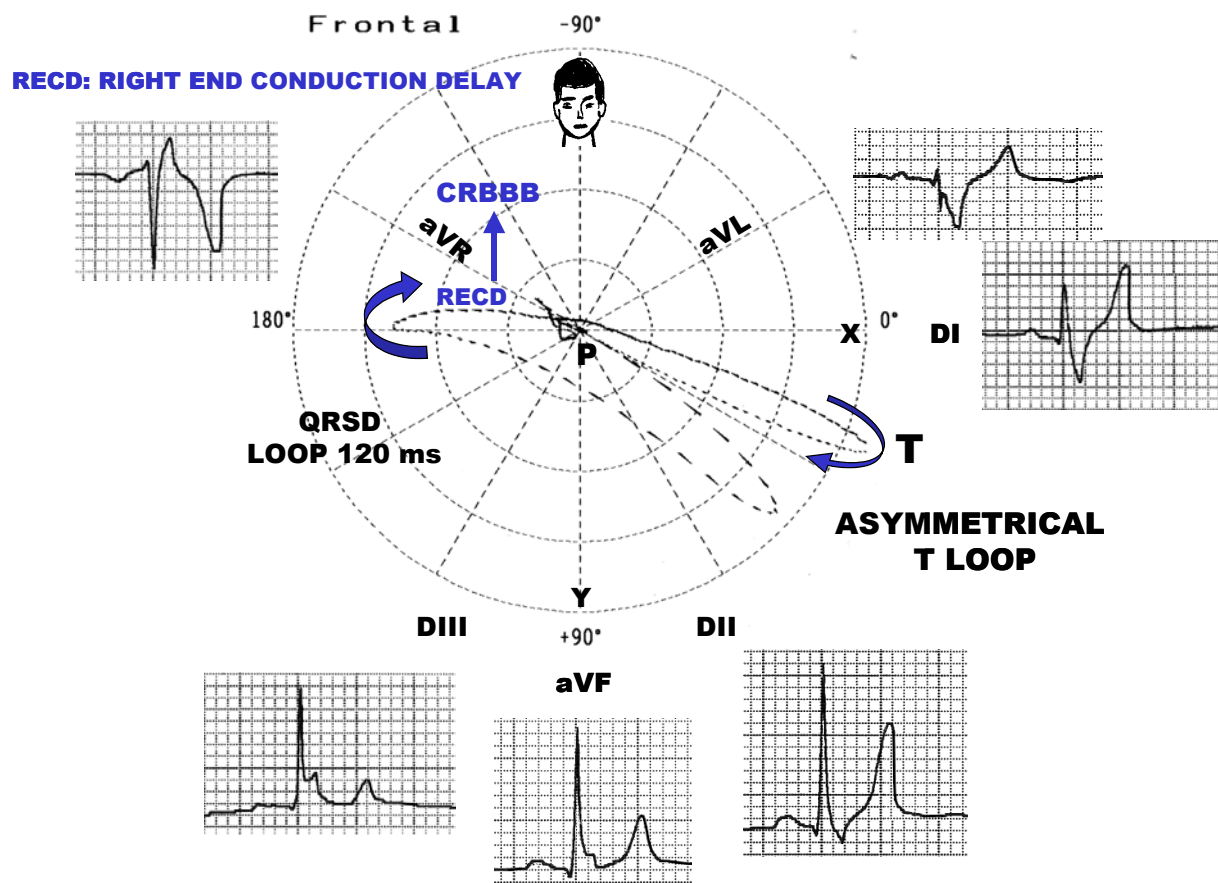


Figure 5

## HORIZONTAL PLANE ECG/VCG CORRELATION

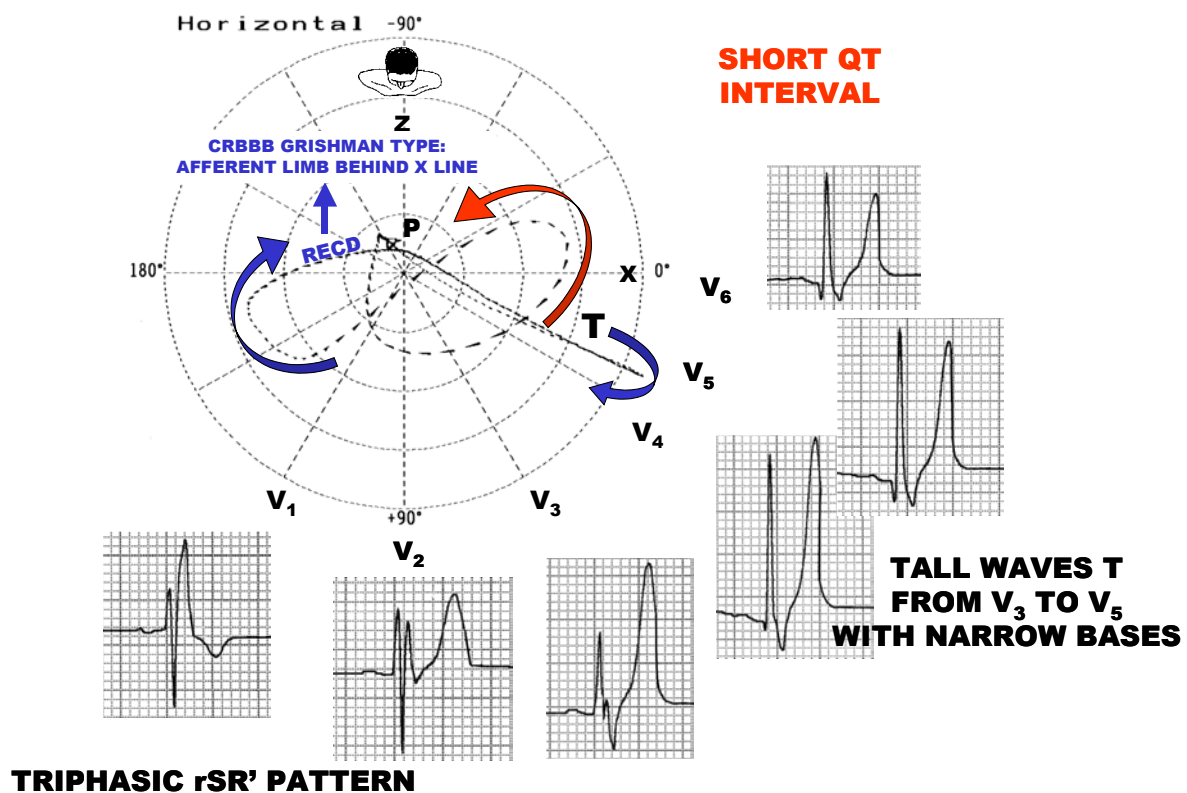


Figure 6

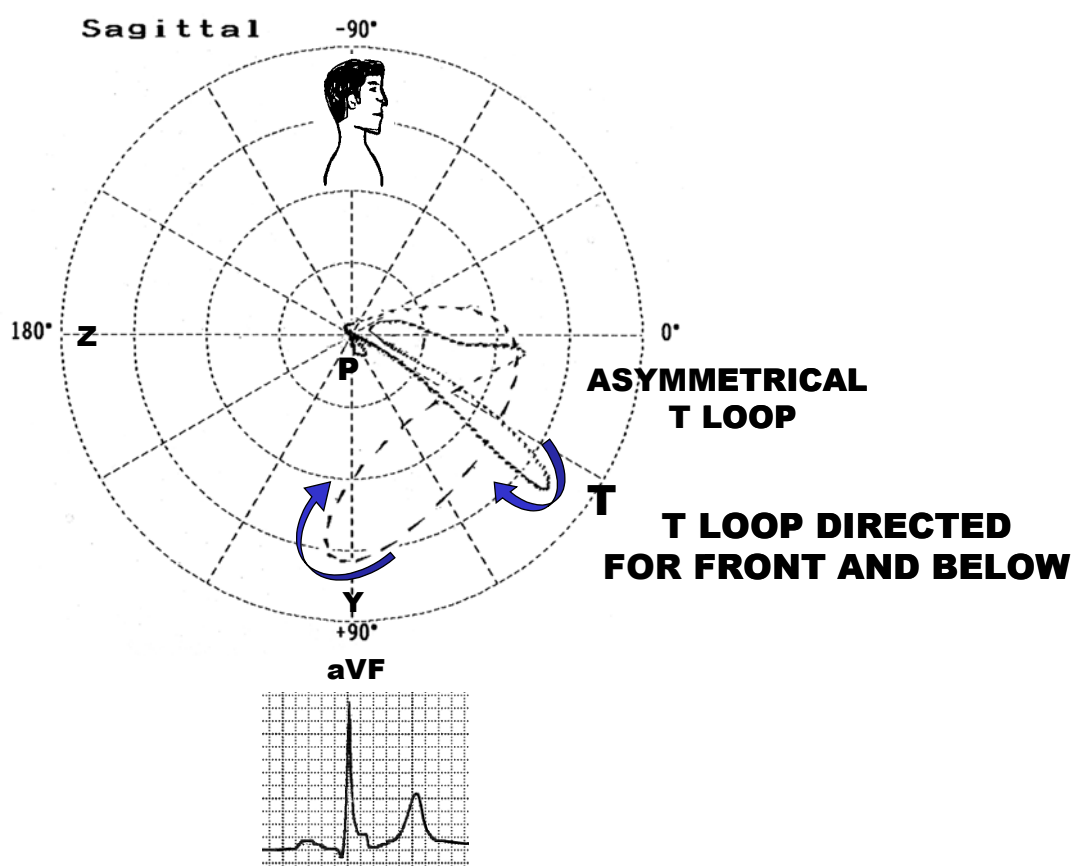
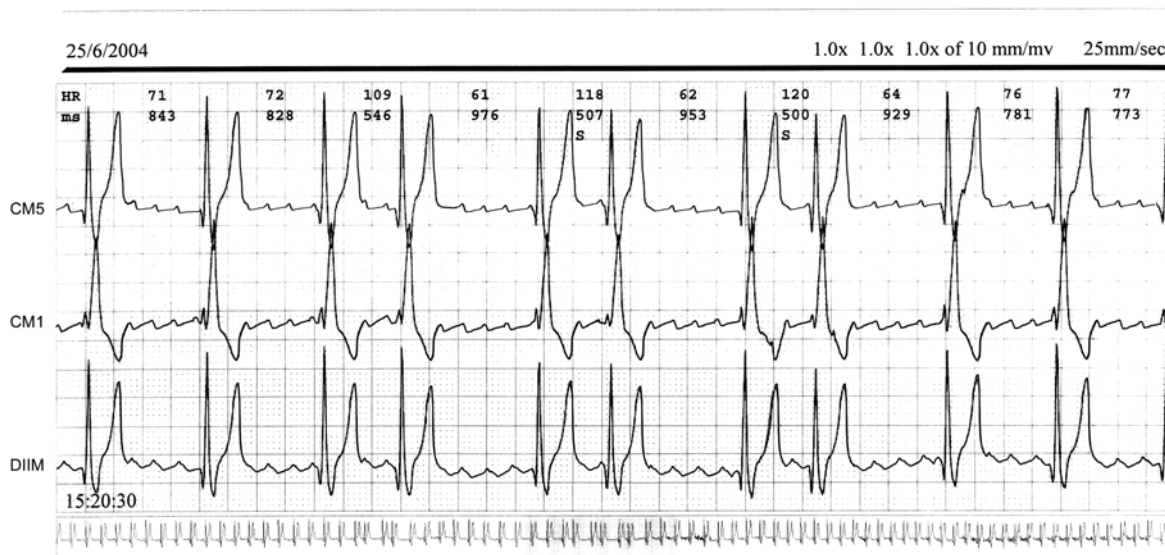
**RIGHT SAGITTAL PLANE ECG/VCG CORRELATION**

Figure 7

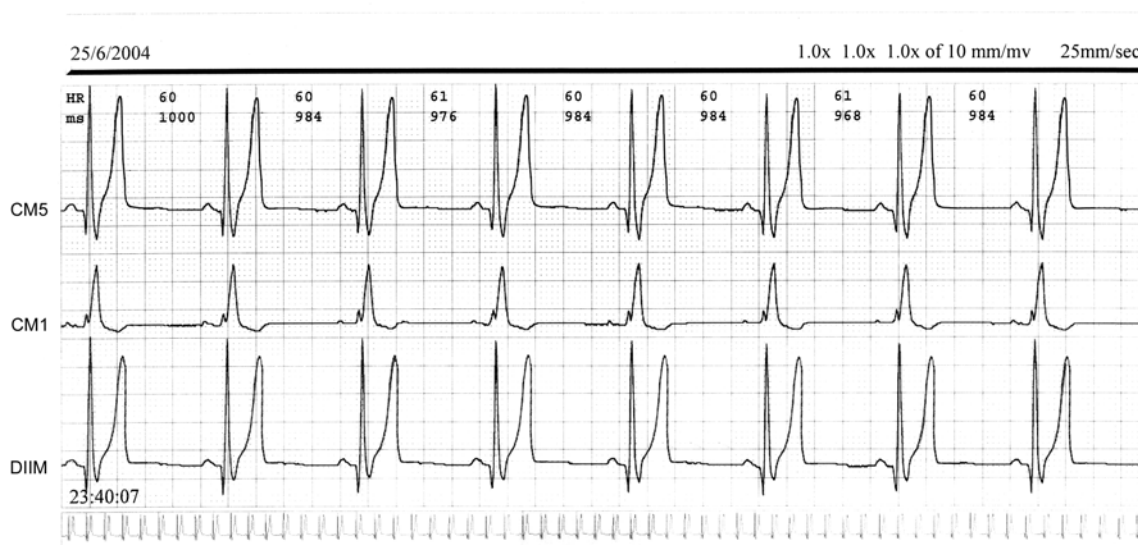
### AMBULATORY ELECTROCARDIOGRAPHY OR LONG-TERM ELECTROCARDIOGRAPHIC RECORDING (HOLTER MONITORING)



In this tracing we can see a short period of coarse atrial fibrillation. The patient related palpitations at this moment.

Congenital SQTs is associated with high incidence of paroxysmal atrial fibrillation that may cause palpitations, by heterogeneous abbreviation of action potential duration and refractoriness of atrial myocytes.

Figure 8



Approximately eight hours later during the accomplishment of the same examination the patient come back spontaneously to sinus rhythm.

**Table 1****Short-QT Syndromes Etiologies****A) Acquired and Drug-related Short-QT Syndrome:**

- Acidosis;
- Alterations of the autonomic tone;
- Digoxin toxicity and digoxin effect;
- Hypercalcemia;
- Hyperthermia;
- Increased potassium plasma levels.

**B) Hereditary or Familial Short-QT Syndrome (SQTS)**