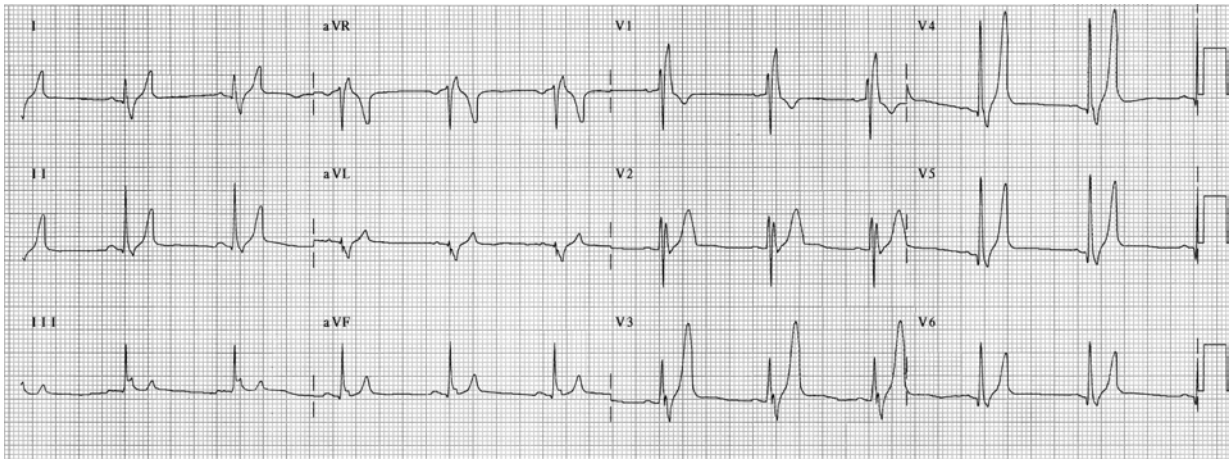
Figure 1

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:** SÂP axis: + 54^0 in FP e fore head in HP; Duration: 80ms; Voltage: 1mm; **PR interval**: 134ms; **QRS**: SÂQRS: 106^0; in FP and forehead in HP; QRS duration (QRSD): 120ms; QRS morphology: triphasic rSR' pattern in lead V_1 and wide S wave in left leads DI, aVL V_5 and V_6 (right terminal forces); R peak time > 50 ms in lead V_1. **T wave**: Morphology: tall waves T from V_3 to V_5 with narrow bases and tending to be symmetrical (the patient does not have increase of the seric potassium); SÂT: + 42^0 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[1]);
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

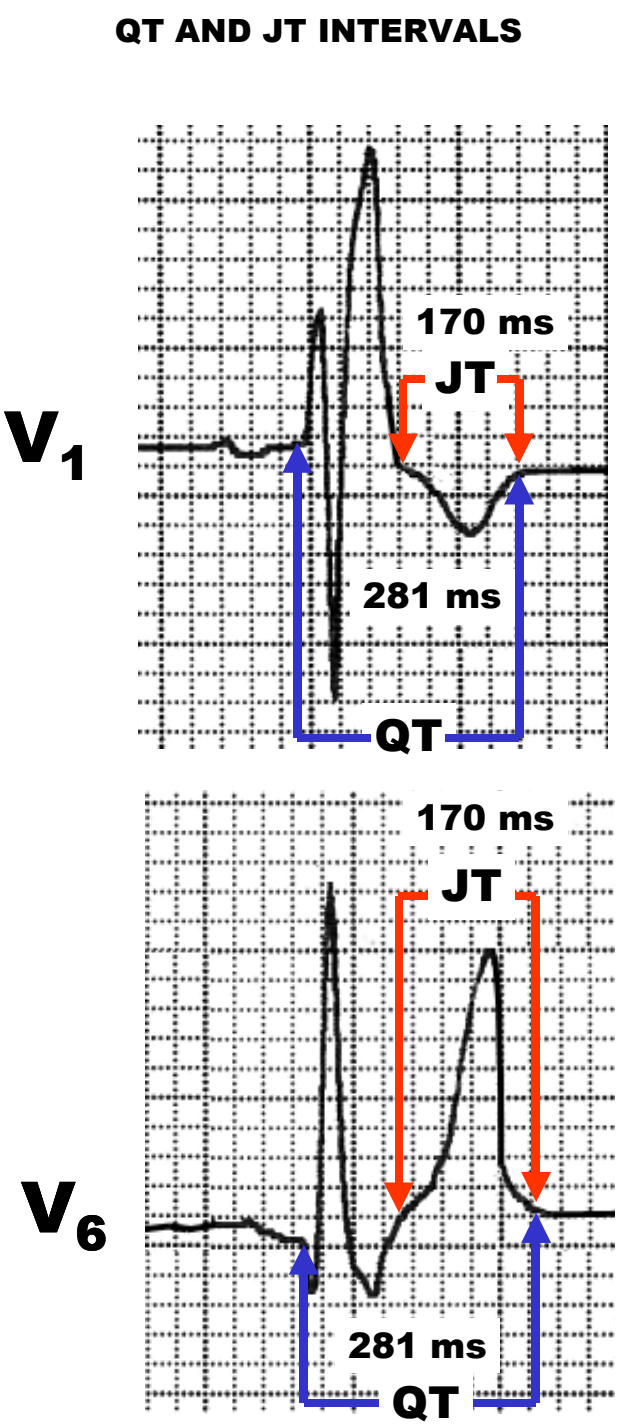


Figure 3

VECTORCARDIOGRAM

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

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

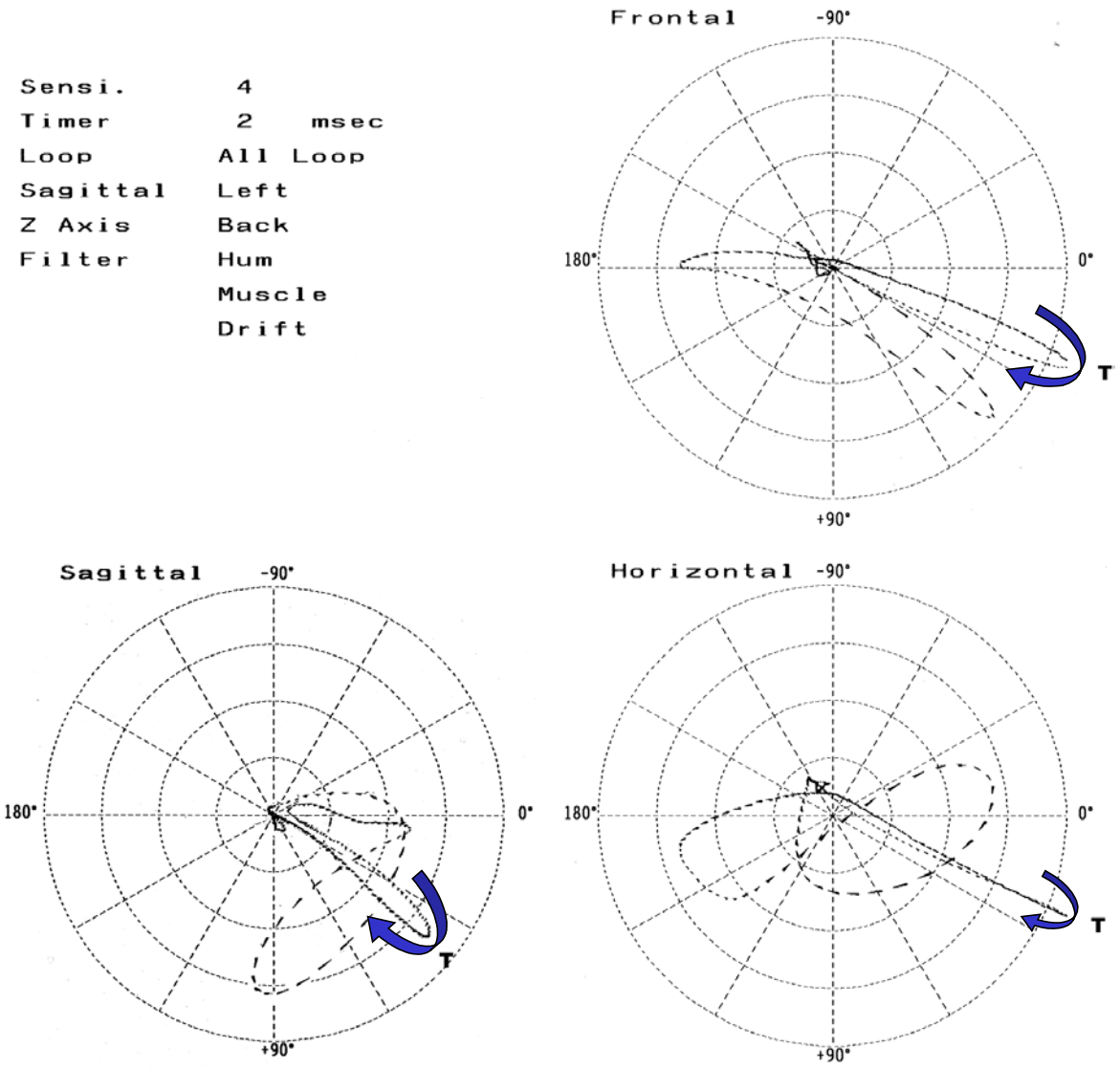


Figure 4

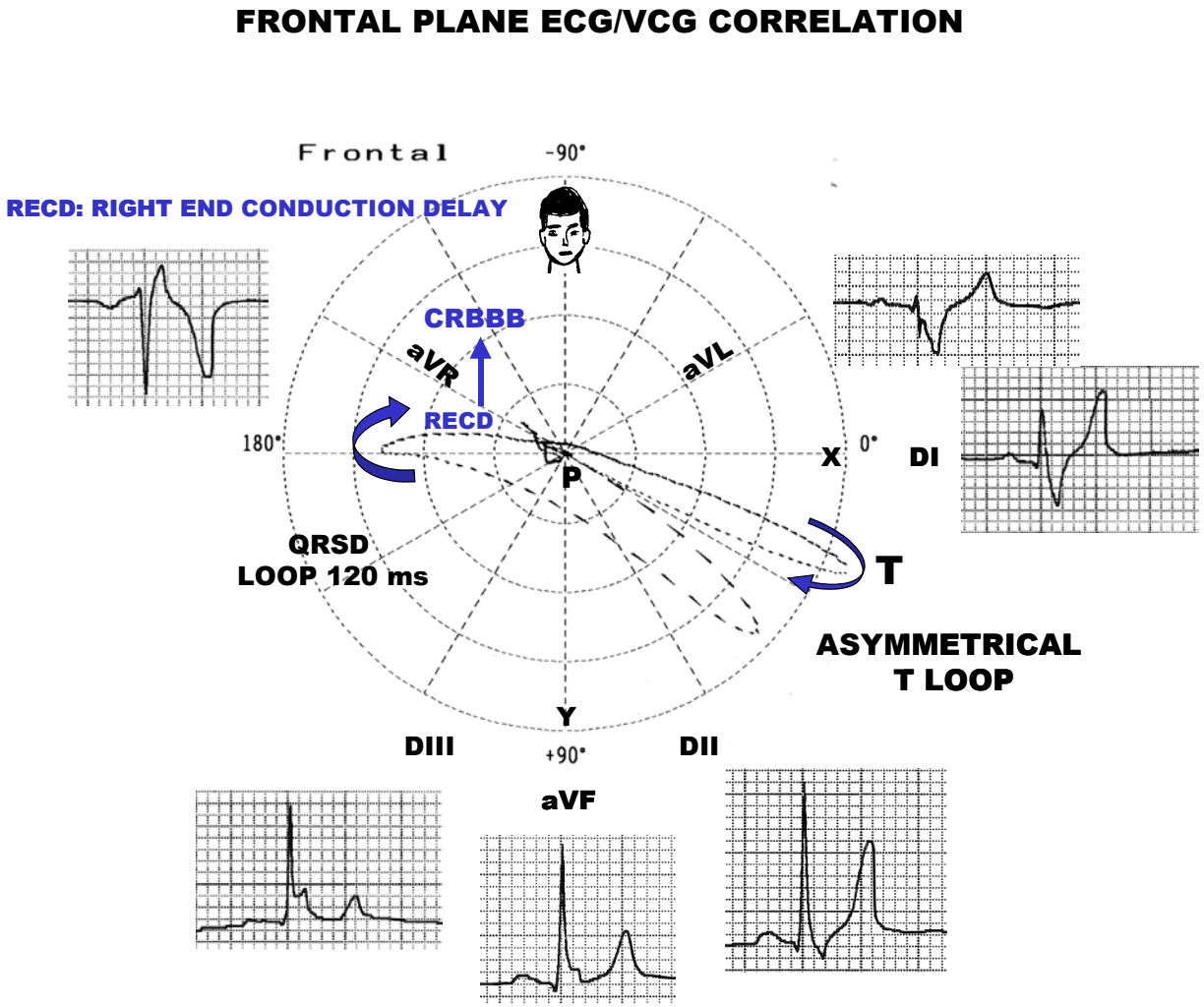

FRONTAL PLANE ECG/VCG CORRELATION
Frontal
-90°
RECD: RIGHT END CONDUCTION DELAY
CRBBB
aVR
aVL
RECD
180°
0°
X
DI
P
QRSD
LOOP 120 ms
T
ASYMMETRICAL
T LOOP
Y
DIII
DII
+90°
aVF

Figure 5

HORIZONTAL PLANE ECG/VCG CORRELATION

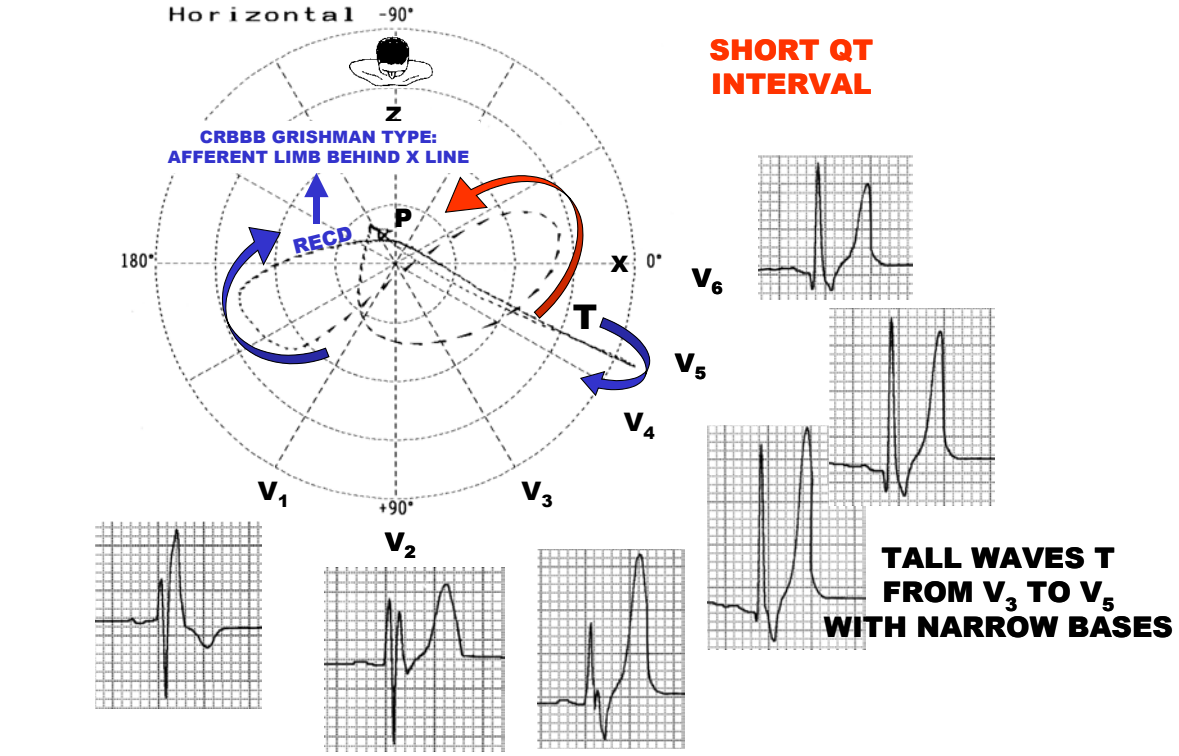


Figure 6

RIGHT SAGITTAL PLANE ECG/VCG CORRELATION

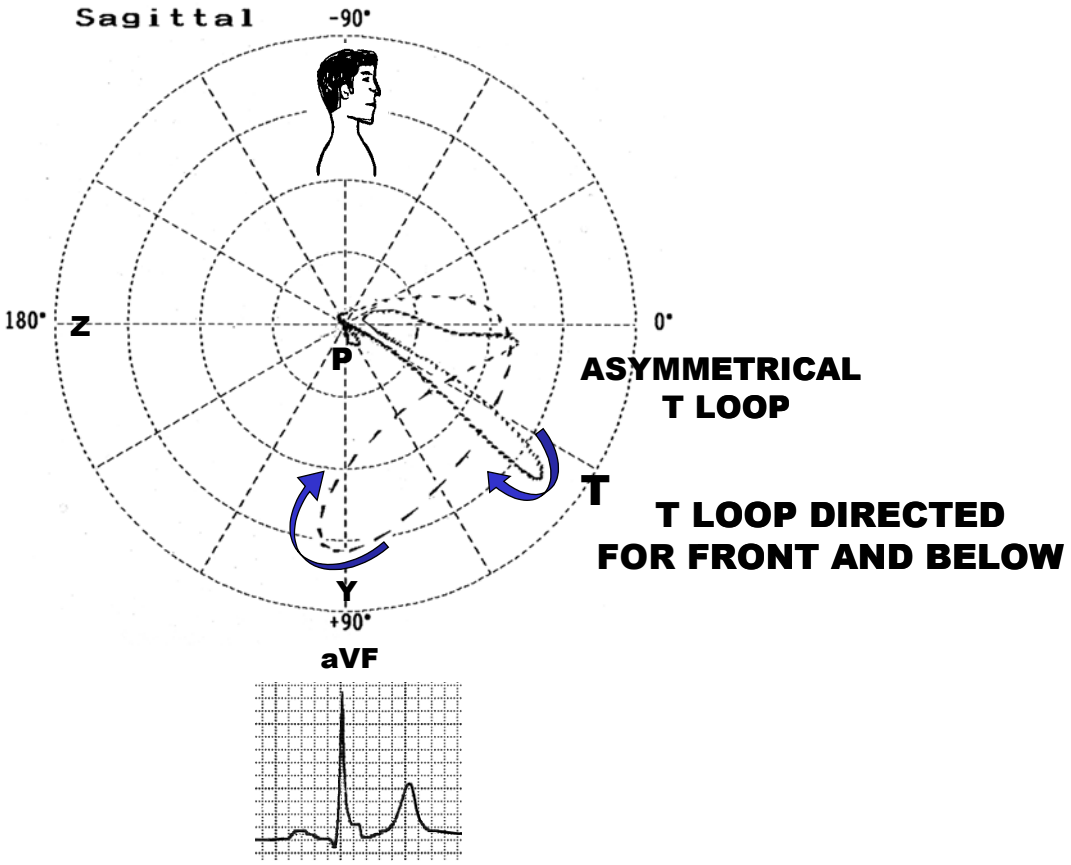
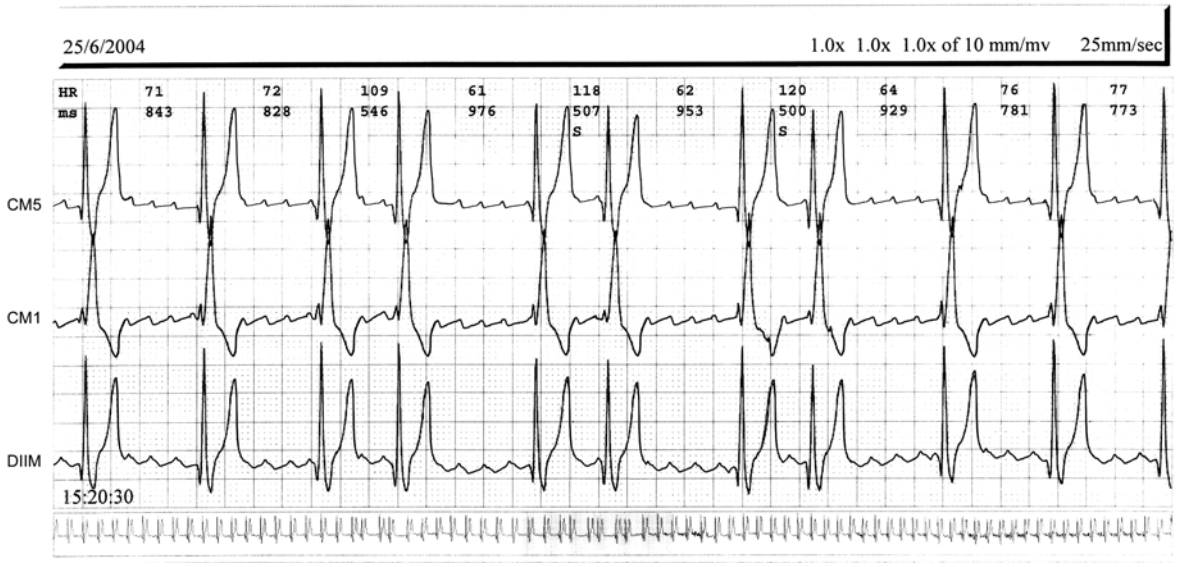


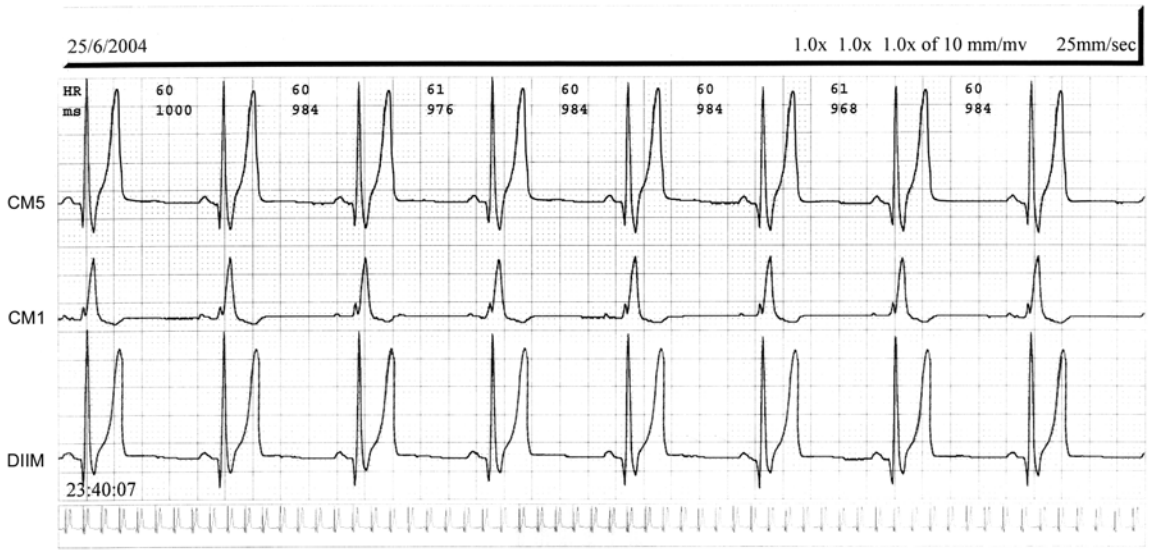
Figure 7

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)