

ECG Interpretation Course

Small group discussion cases

Chapter 3

Premature Beats and Tachyarrhythmias

(for participant use)

This information is for individual use and not for further dissemination



Chapter 3 – Premature Beats & Tachyarrhythmias – Case 1 – AD

77-yr-old female admitted with dizzy spell, nausea, shaking.

Rate:	Atrial:_____	Ventricular:_____
PR:	_____	
QRS:	_____	
Axis:	_____	
Rhythm:	_____	
Interpretation:	_____	

1. What is her rhythm?

2. How should this be managed?

GJ

ID

13-JUN-2007 09:03:09

ALBERTA HEALTH SERVICES - CHR

Male (96 yr)

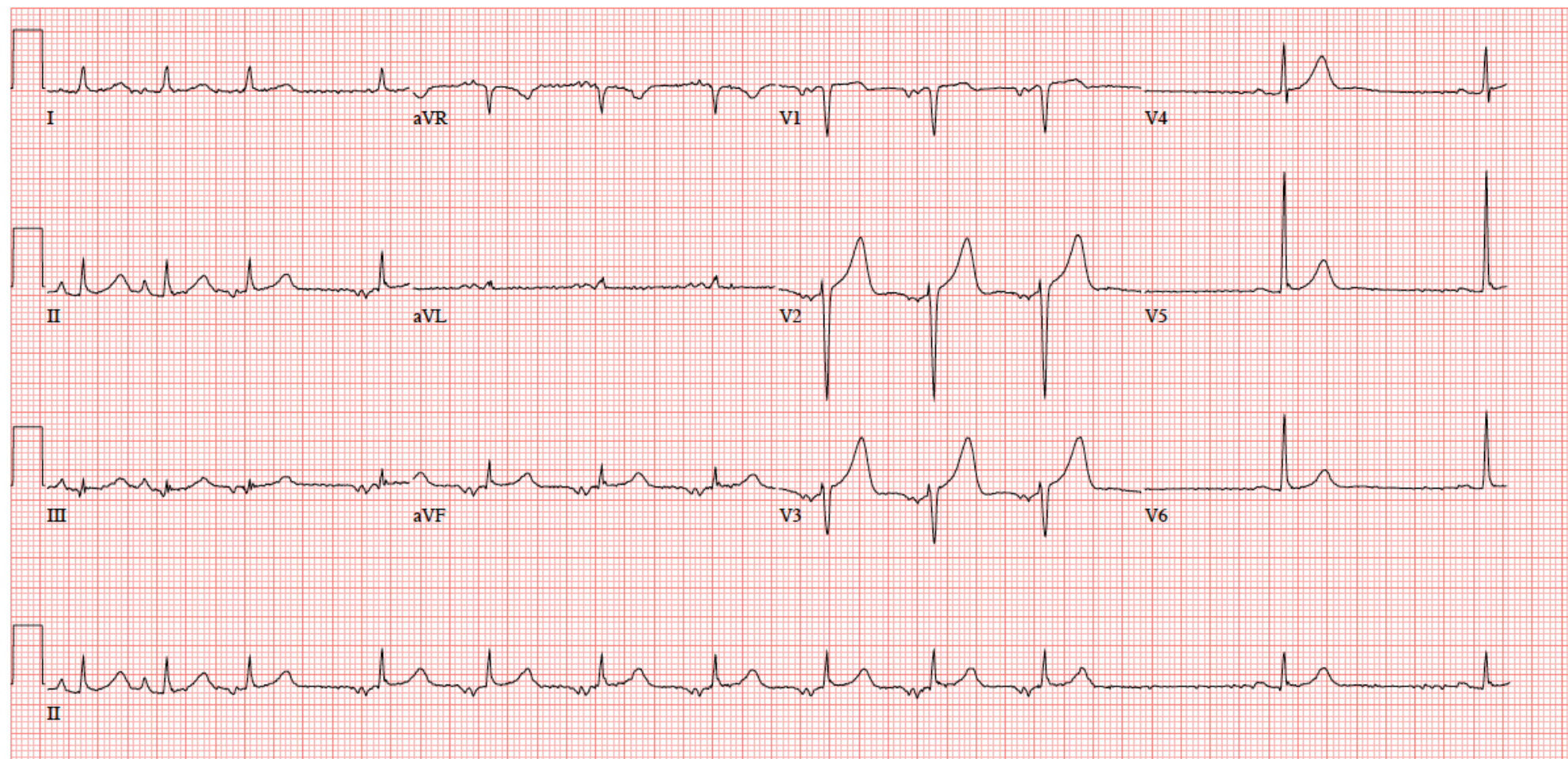
Room:11
Loc:315

Technician:
Test ind:

Referred by:

Confirmed by:

COMMENTS:



25mm/s 10mm/mV 100Hz 7.1.1 12SL 237 CID: 1

EID:1018 EDT: 16:24 14-JUN-2007 ORDER:

Page 1 of 1

Chapter 3 – Premature Beats & Tachyarrhythmias – Case 2 – GJ

96-yr-old male with history of CLL. Presented to ER with nausea / vomiting / diarrhoea.

Rate:	Atrial:_____	Ventricular:_____
PR:	_____	
QRS:	_____	
Axis:	_____	
Rhythm:	_____	
Interpretation:	_____	

1. What is the atrial rhythm?

2. What potential contributing factors should be considered?

RJ

ID

16-OCT-2008 16:59:21

ALBERTA HEALTH SERVICES - CHR

Male (64 yr)

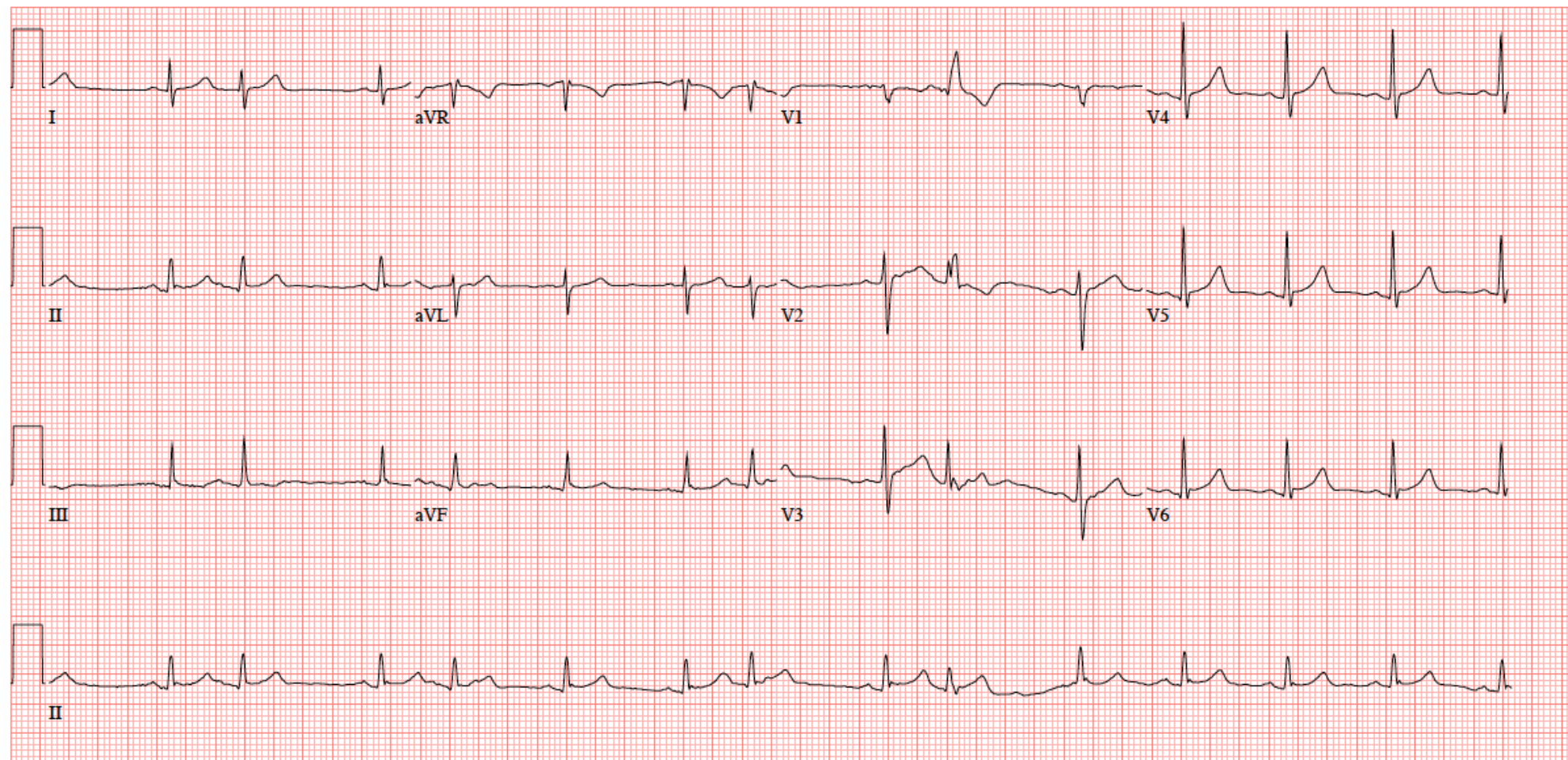
Room:
Loc:312

Technician
Test ind:

Referred by:

Confirmed by:

COMMENTS:



25mm/s 10mm/mV 100Hz 7.1.1 12SL 237 CID: 5

SID: 240681400 EID:1051 EDT: 15:41 18-OCT-2008 ORDER:

Chapter 3 – Premature Beats & Tachyarrhythmias – Case 3 – RJ

64-yr-old male. Attended ER with musculoskeletal chest pain.

Rate:	Atrial:_____	Ventricular:_____
PR:	_____	
QRS:	_____	
Axis:	_____	
Rhythm:	_____	
Interpretation:	_____	

1. What is the rhythm?

2. Why is the 9th QRS complex a different morphology?

TB1

'B* TTX#469 01-MAY-2007 17:11:20

Page 1

ALARM HIS. .Y *BRADY* 30-APR-2007 22:27:08 HR 37 MM/S



Chapter 3 – Premature Beats & Tachyarrhythmias – Case 4 – TB

54-yr-old male. Athlete - trains for Iron-man competitions. VF arrest on bicycle. Normal coronaries on cath. Unknown FHx (adopted).

Rate:	Atrial:_____	Ventricular:_____
PR:	_____	
QRS:	_____	
Axis:	_____	
Rhythm:	_____	
Interpretation:	_____	

1. What is the cause of the bradycardia at the start of the strip?

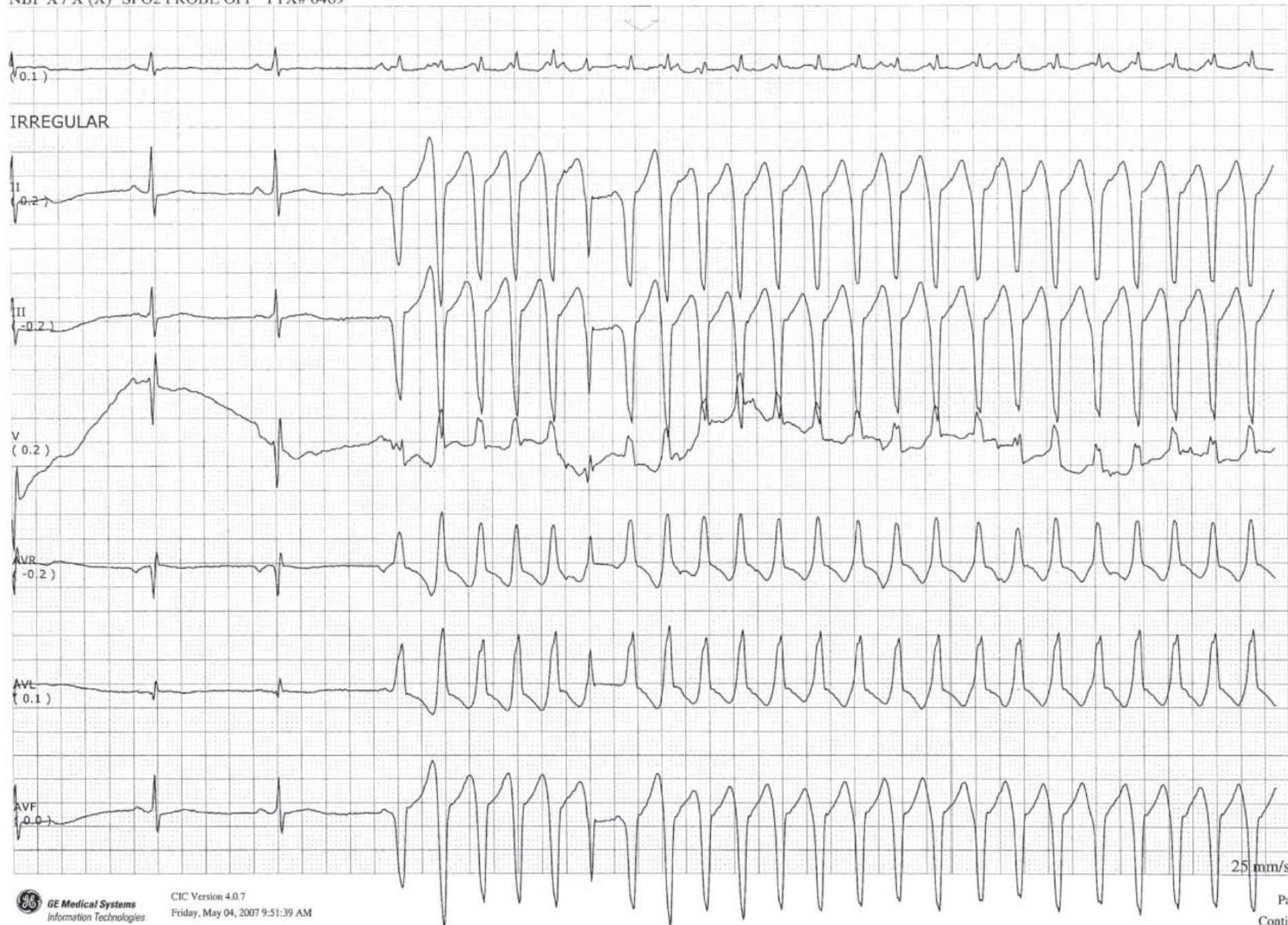
2. Why is the last QRS complex different?

TB2

3/07 9:01:44 PM

3TTX# 0469

IRREGULAR F... 56 PVC 7 ST II 0.2 mm
NBP X / X (X) SPO2 PROBE OFF TTX# 0469



Chapter 3 – Premature Beats & Tachyarrhythmias – Case 4 – TB

Same patient, on telemetry. Becomes hypotensive, but still conscious.

Rate:	Atrial:_____	Ventricular:_____
PR:	_____	
QRS:	_____	
Axis:	_____	
Rhythm:	_____	
Interpretation:	_____	

1. What rhythm develops?

2. What treatments should be considered (immediate & longer term)?

PM1

17-JUN-2009 21:55:00

ALBERTA HEALTH SERVICES -CALGARY

(67 yr)

Male Unknown

Room:

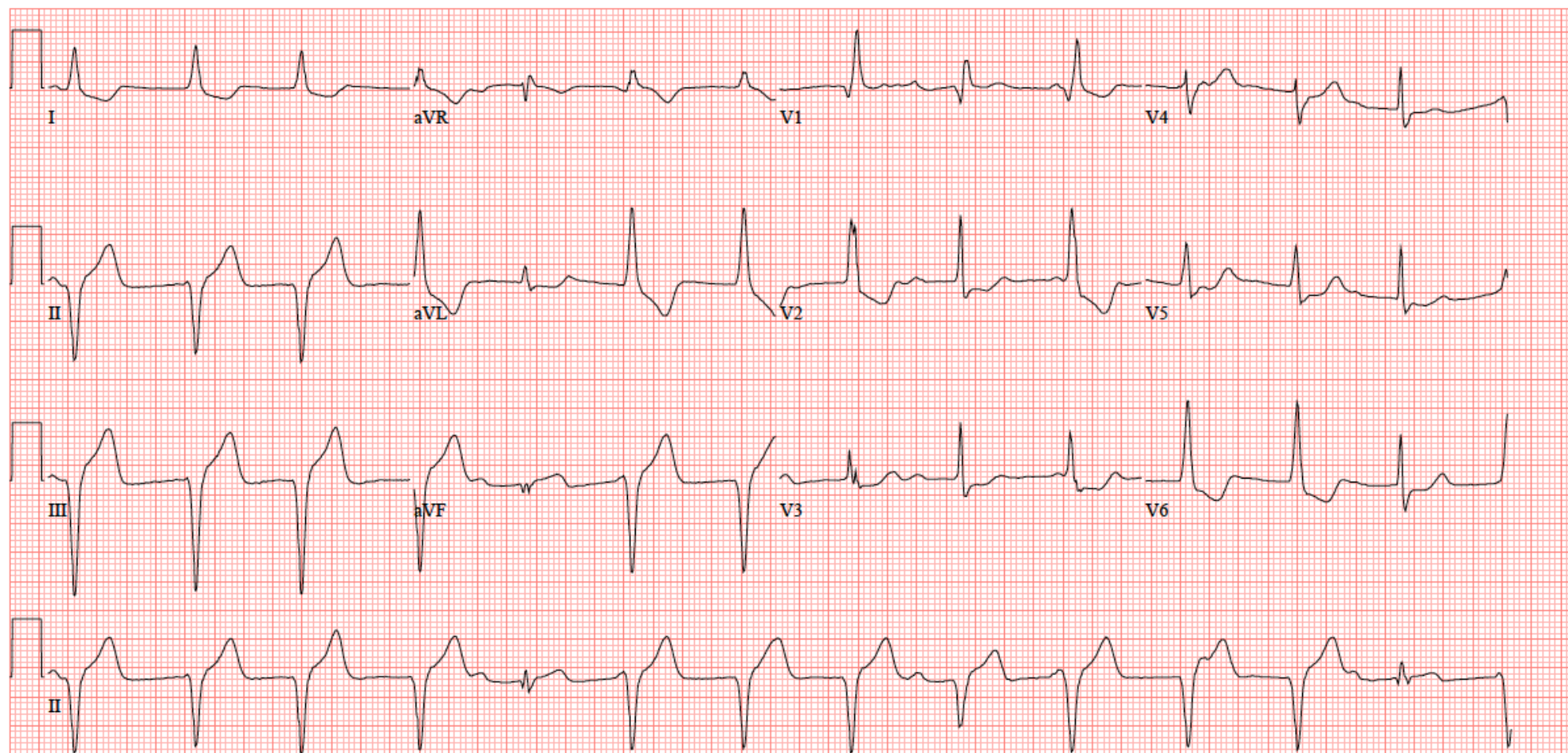
Loc:1

Technician:

Test ind:

Referred by:

Confirmed by:



25mm/s 10mm/mV 100Hz 7.1.1 12SL 86 CID: 1

SID: 945152900 EID:4315 EDT: 10:56 18-JUN-2009 ORDER:

Chapter 3 – Premature Beats & Tachyarrhythmias – Case 5 – PM1

67-yr-old male with no prior cardiac history. Presented with acute retrosternal chest pain.

Rate:	Atrial:_____	Ventricular:_____
PR:	_____	
QRS:	_____	
Axis:	_____	
Rhythm:	_____	
Interpretation:	_____	

1. What rhythm is present? What causes the varying QRS morphology?

2. What might be the underlying cause?

PM2

II

17-JUN-2009 20:08:37

ALBERTA HEALTH SERVICES -CALGARY

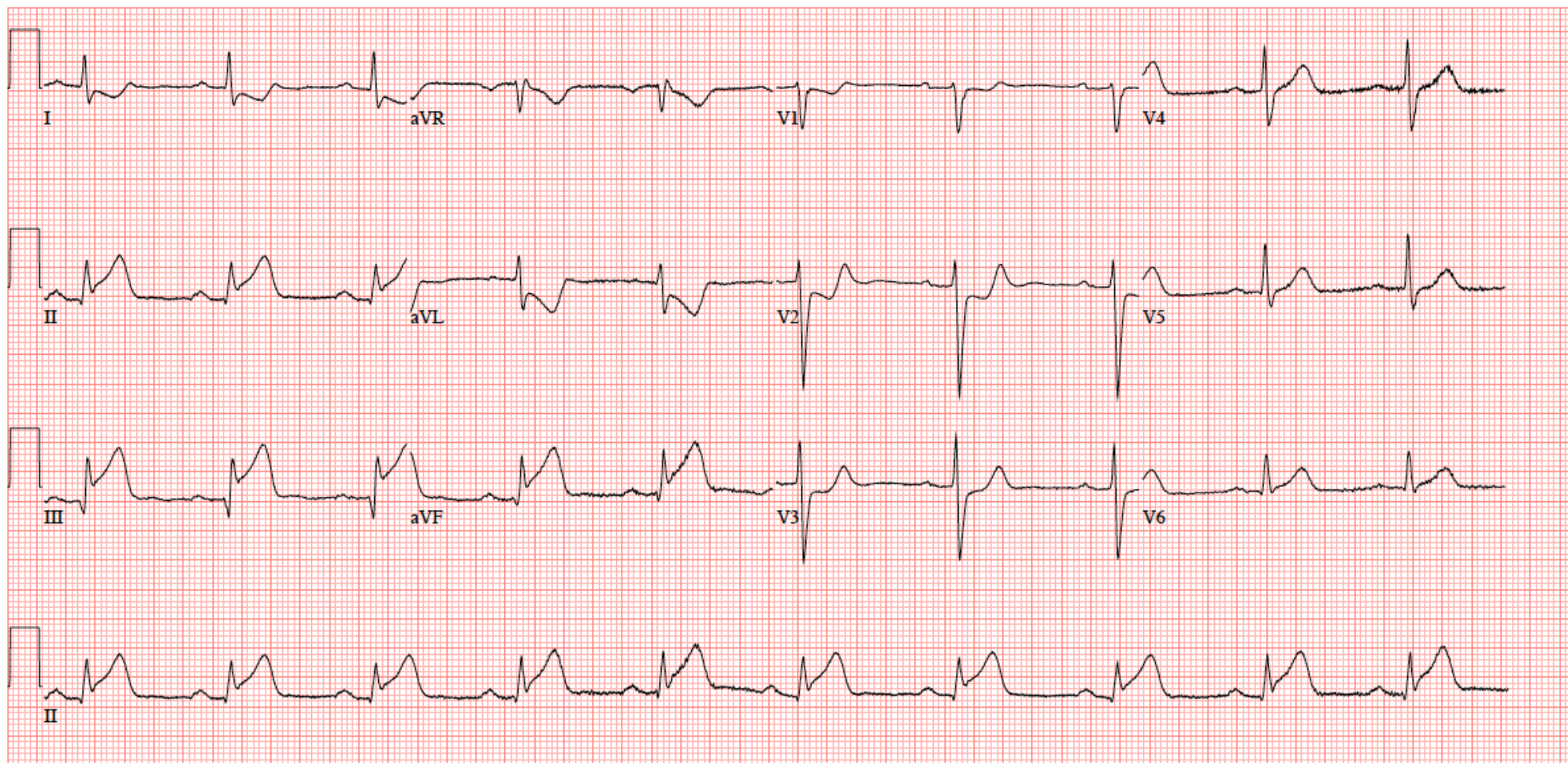
Male (67 yr)
Unknown

Room:
Loc:5

Technician:
Test inc

Referred by:

Confirmed by:



Chapter 3 – Premature Beats & Tachyarrhythmias – Case 5 – PM2

Same patient, few minutes later.

Rate:	Atrial:_____	Ventricular:_____
PR:	_____	
QRS:	_____	
Axis:	_____	
Rhythm:	_____	
Interpretation:	_____	

1. What does the ECG now show?

2. Does this fit with the prior ECG?

AJ

ID

10-JUN-2009 18:05:35

ALBERTA HEALTH SERVICES -CALGARY

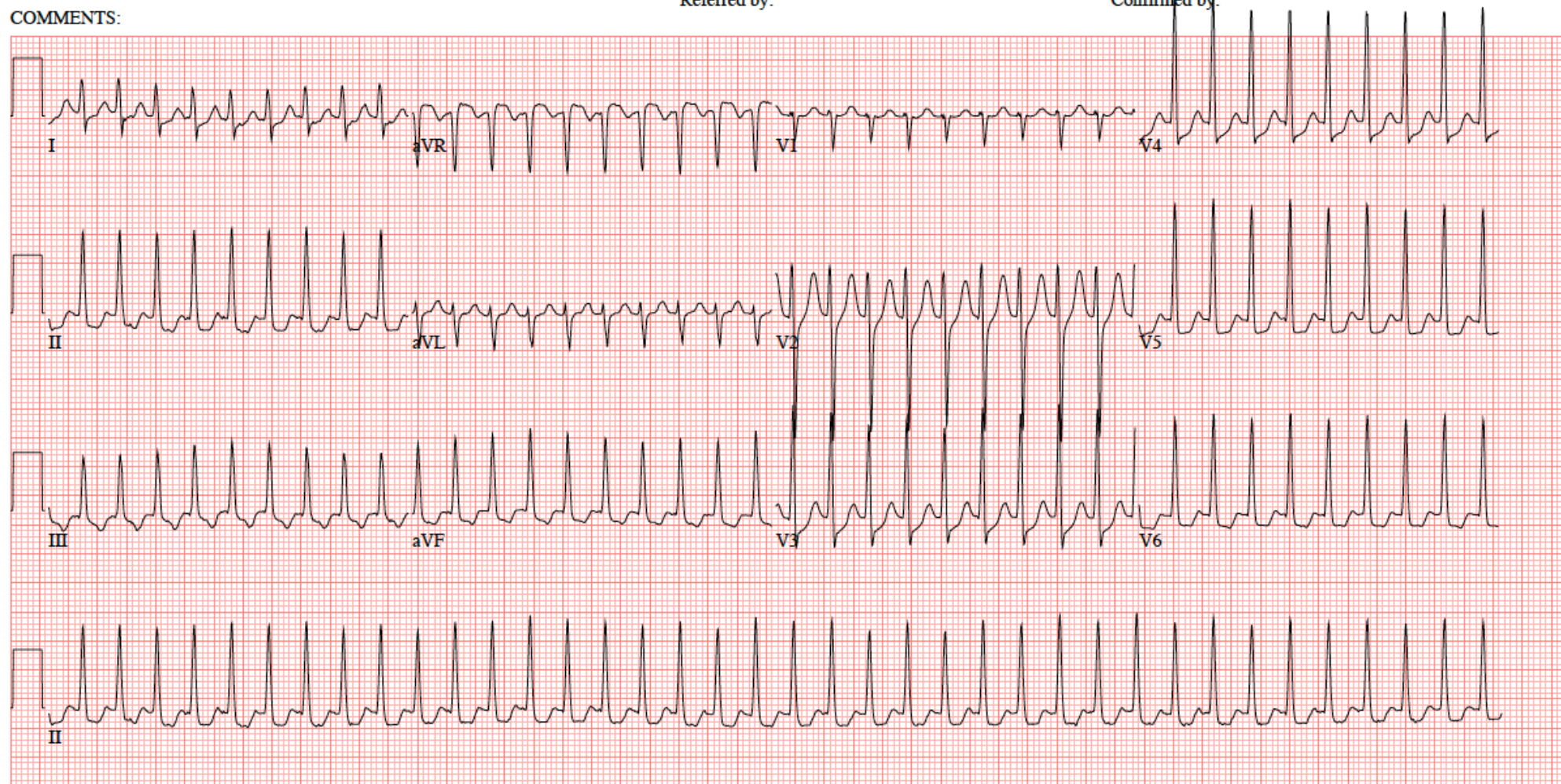
Female 18 yr)
0kg
Room:
Loc:12

Technician
Test ind:

Referred by:

Confirmed by:

COMMENTS:



25mm/s 10mm/mV 100Hz 7.1.1 12SL 237 CID: 12

SID: 978597010 EID:1028 EDT: 16:43 11-JUN-2009 ORDER:

Chapter 3 – Premature Beats & Tachyarrhythmias – Case 6 – AJ

18-yr-old female. Three episodes of palps, lasting up to 40 min, triggered by intense cardiovascular exercise.

Rate:	Atrial:_____	Ventricular:_____
PR:	_____	
QRS:	_____	
Axis:	_____	
Rhythm:	_____	
Interpretation:	_____	

1. What does this ECG show? What is the main differential diagnosis for this dysrhythmia?

2. What could be attempted to terminate the dysrhythmia?

SM1

ID

14-MAR-2009 12:40:55

ALBERTA HEALTH SERVICES -CALGARY

Male (38 yr)

0kg

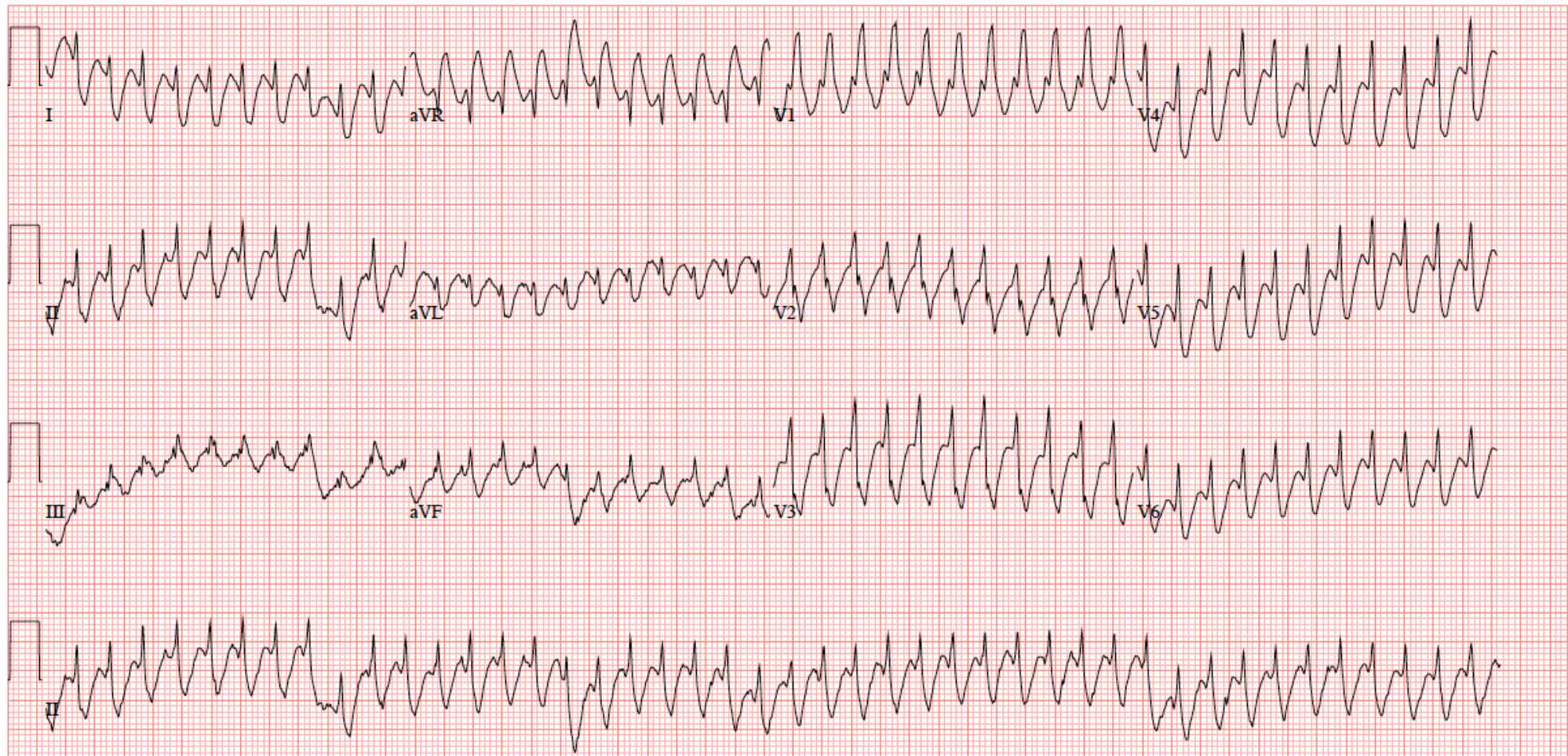
Room:CDRM1

Loc:212

Technician:
Test ind:

Referred by:

Confirmed by:



25mm/s 10mm/mV 100Hz 7.1.1 12SL 237 CID: 1

SID: 315788090 EID:1000 EDT: 16:00 14-MAR-2009 ORDER:

Chapter 3 – Premature Beats & Tachyarrhythmias – Case 7 – SM1

38-y-o male with episodes of palpitation, breathlessness & dizziness.

Rate:	Atrial:_____	Ventricular:_____
PR:	_____	
QRS:	_____	
Axis:	_____	
Rhythm:	_____	
Interpretation:	_____	

1. What is the differential diagnosis of this tachycardia?

2. What bedside manoeuvres could be attempted to terminate it or help with the diagnosis?

(38 yr)

Male

0kg

Room:CDRM1

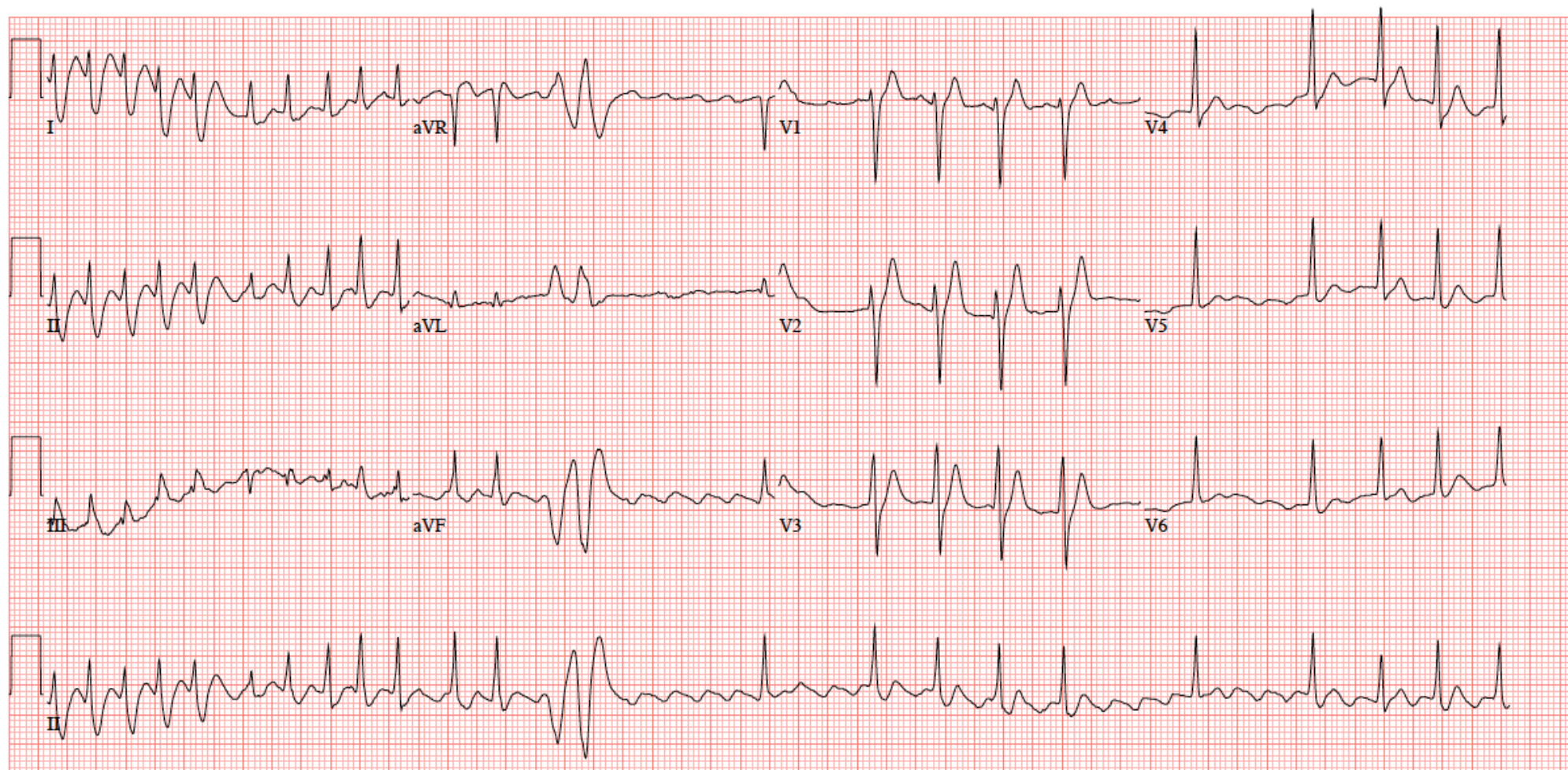
Loc:212

Technician:

Test ind:

Referred by:

Confirmed by:



Chapter 3 – Premature Beats & Tachyarrhythmias – Case 7 – SM2

Same patient, with carotid sinus massage.

Rate:	Atrial:_____	Ventricular:_____
PR:	_____	
QRS:	_____	
Axis:	_____	
Rhythm:	_____	
Interpretation:	_____	

1. What rhythm abnormality is revealed?

2. Why does the tachycardia change from wide-complex to narrow-complex?

DL

ID

21-MAR-2009 11:23:51

ALBERTA HEALTH SERVICES - CHR

Male (60 yr)
Caucasian

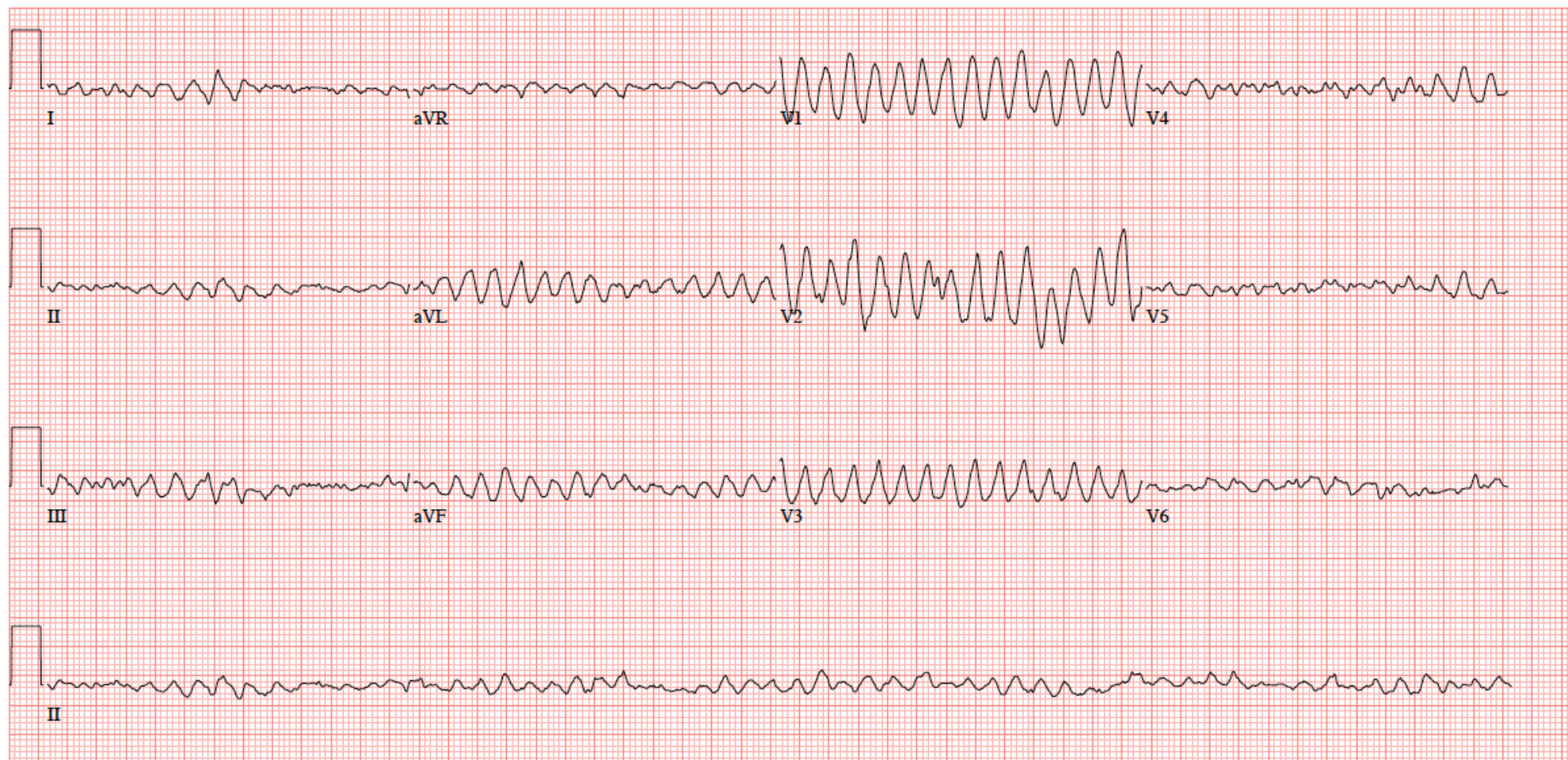
Room:
Loc:12

Technician:
Test ind:

Referred by:

Confirmed by:

COMMENTS:



25mm/s 10mm/mV 100Hz 7.1.1 12SL 237 CID: 12

SID: 9051419219 EID:1051 EDT: 17:56 21-MAR-2009 ORDER:

Chapter 3 – Premature Beats & Tachyarrhythmias – Case 8 – DL

60-yr-old male with severe dilated cardiomyopathy. Conscious & talking during this ECG(!). Leads are appropriately placed and no electrical interference is present.

Rate:	Atrial:_____	Ventricular:_____
PR:	_____	
QRS:	_____	
Axis:	_____	
Rhythm:	_____	
Interpretation:	_____	

1. What does the ECG show?

2. How can he still be conscious?

AM

ID

18-OCT-2010 20:34:41

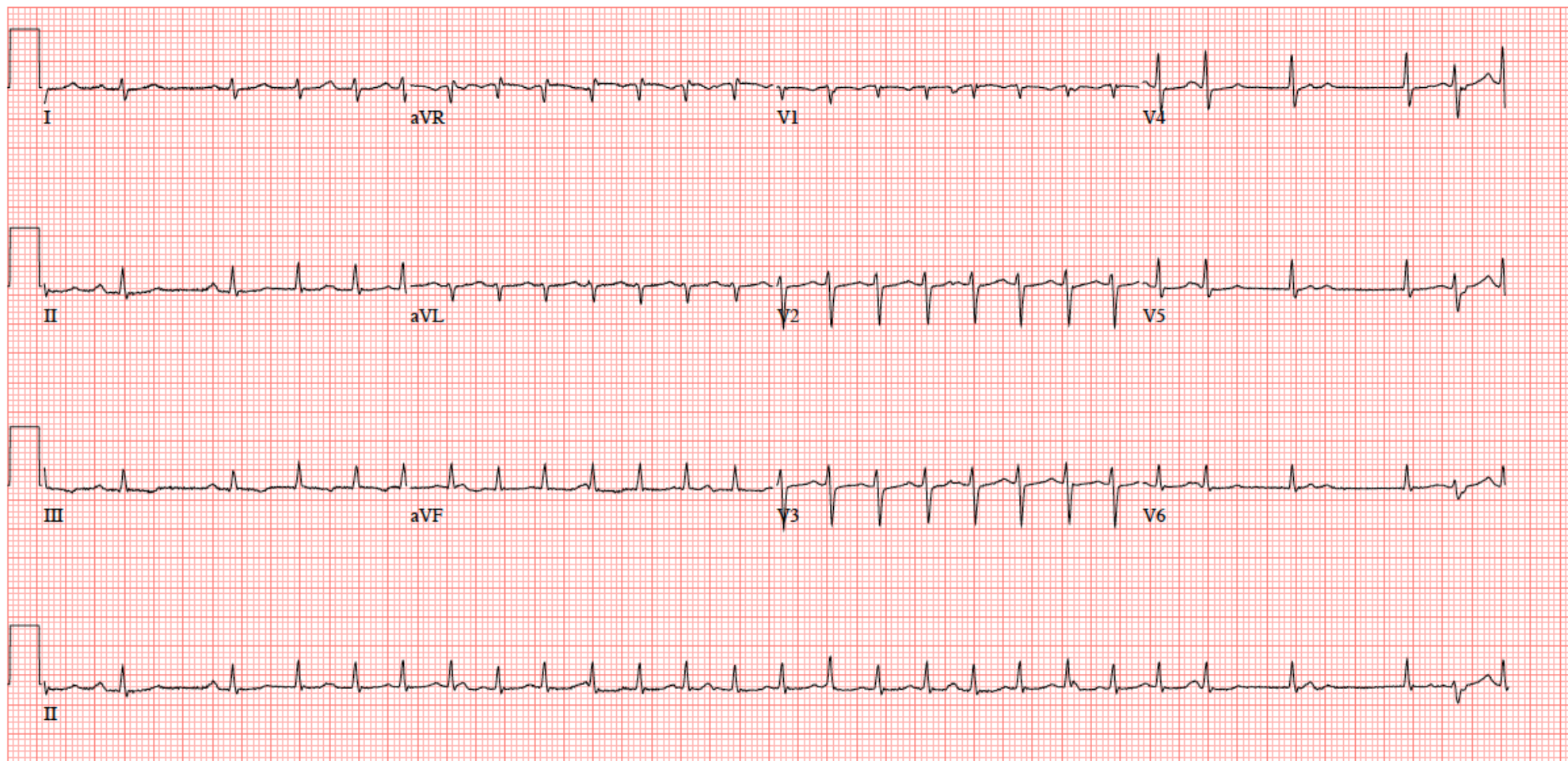
ALBERTA HEALTH SERVICES -CALGARY

(39 yr)
Female Unknown
0kg
Room:4808
Loc:248 Option:1

Technician
Test ind:

Referred by:

Confirmed by:



25mm/s 10mm/mV 100Hz 7.1.1 12SL 239 CID: 1

SID: 531183031 EID:1067 EDT: 16:39 20-OCT-2010 ORDER:

Chapter 3 – Premature Beats & Tachyarrhythmias – Case 9 – AM

39-yr-old female. Episodes of rapid palpitation. Nausea, vomiting. Elevated white cell count & pleural effusions.

Rate:	Atrial:_____	Ventricular:_____
PR:	_____	
QRS:	_____	
Axis:	_____	
Rhythm:	_____	
Interpretation:	_____	

1. What is the rhythm in the middle of the ECG?

2. What blood tests might be helpful?

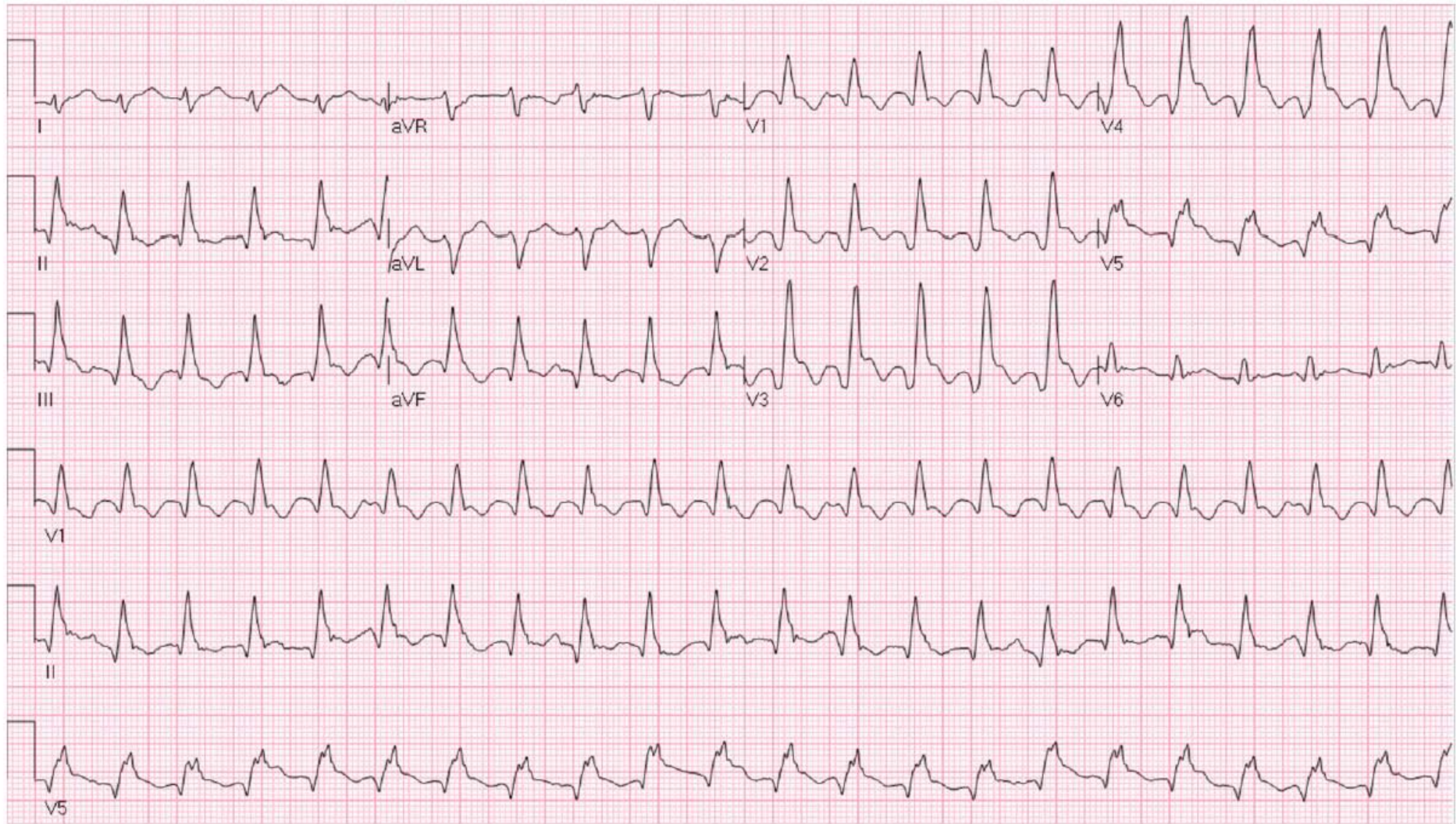
JW

ID

03-NOV-2009 09:27:00

ALBERTA HEALTH SERVICES -CALGARY

Male (75 yr)
0kg
Room:
Loc:301



25mm/s 10mm/mV 100Hz 7.1.1 12SL 86 CID: 1

SID: 427136931 EID:1006 EDT: 14:45 03-NOV-2009 ORDER:

Chapter 3 – Premature Beats & Tachyarrhythmias – Case 10 – JW

75-yr-old male with prior anterior MI 1998. Poor LV function with extensive scar. Admitted with chest discomfort.

Rate:	Atrial:_____	Ventricular:_____
PR:	_____	
QRS:	_____	
Axis:	_____	
Rhythm:	_____	
Interpretation:	_____	

1. What is the differential diagnosis for this rhythm? Based on the history alone, what is the most likely diagnosis?

2. What features on this ECG confirm the diagnosis?

VT1

ID

01-MAY-2007 19:47:53

CALGARY HEALTH REGION

Male (23 yr)

Room: 01b

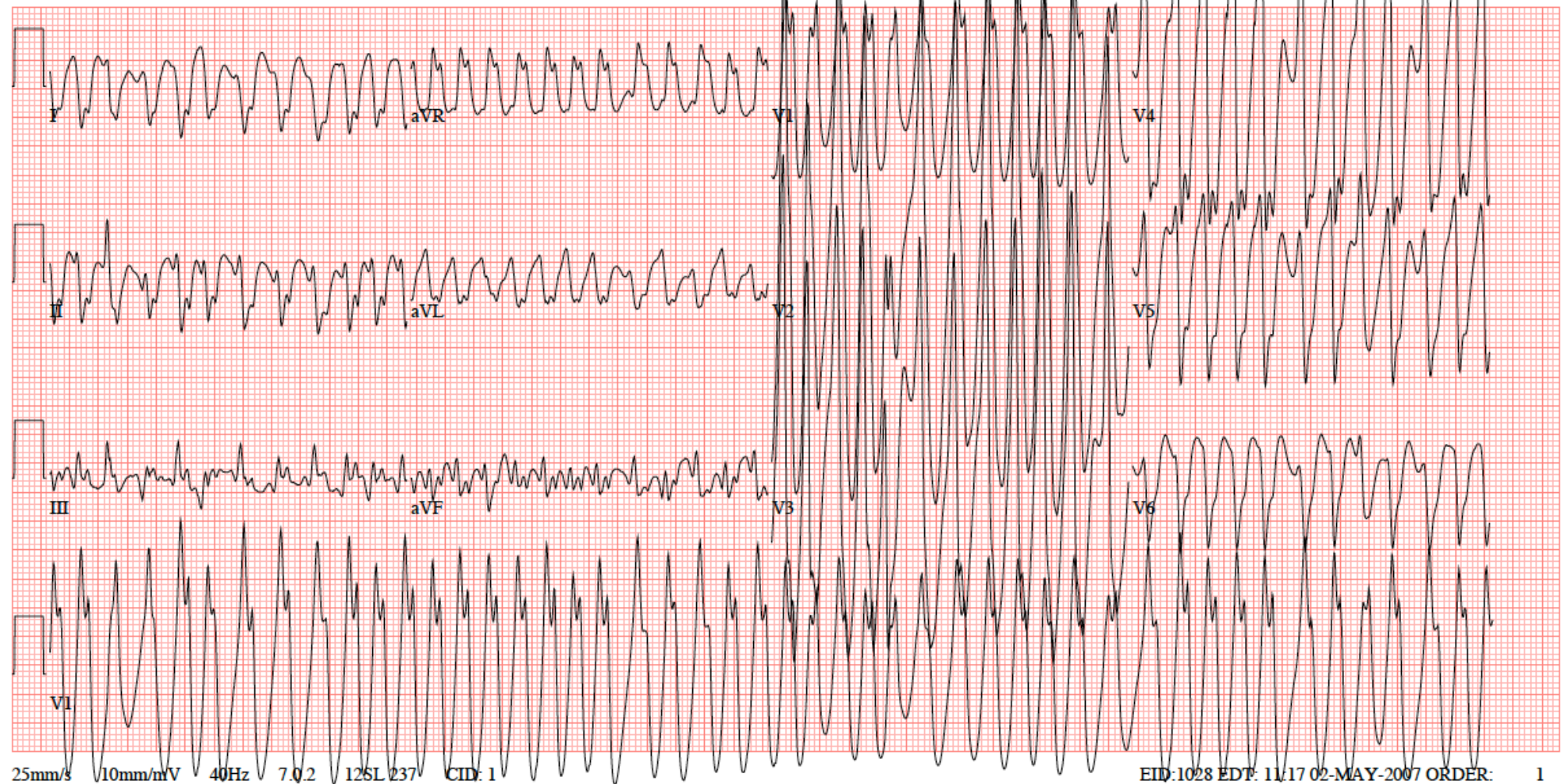
Loc: 12

Technician:
Test ind:

Referred by:

Confirmed By:

COMMENTS:



25mm/s 10mm/mV 40Hz 7.0.2 12SL 237 CID: 1

EID: 1028 EDT: 11:17 02-MAY-2007 ORDER: 1

Chapter 3 – Premature Beats & Tachyarrhythmias – Case 11 – VT1

23-yr-old male. Recurrent palpitation.

Rate:	Atrial:_____	Ventricular:_____
PR:	_____	
QRS:	_____	
Axis:	_____	
Rhythm:	_____	
Interpretation:	_____	

1. What does the ECG show?

2. What is the appropriate immediate treatment?

VT2

ID

01-MAY-2007 19:58:52

CALGARY HEALTH REGION

Male (23 yr)

01b

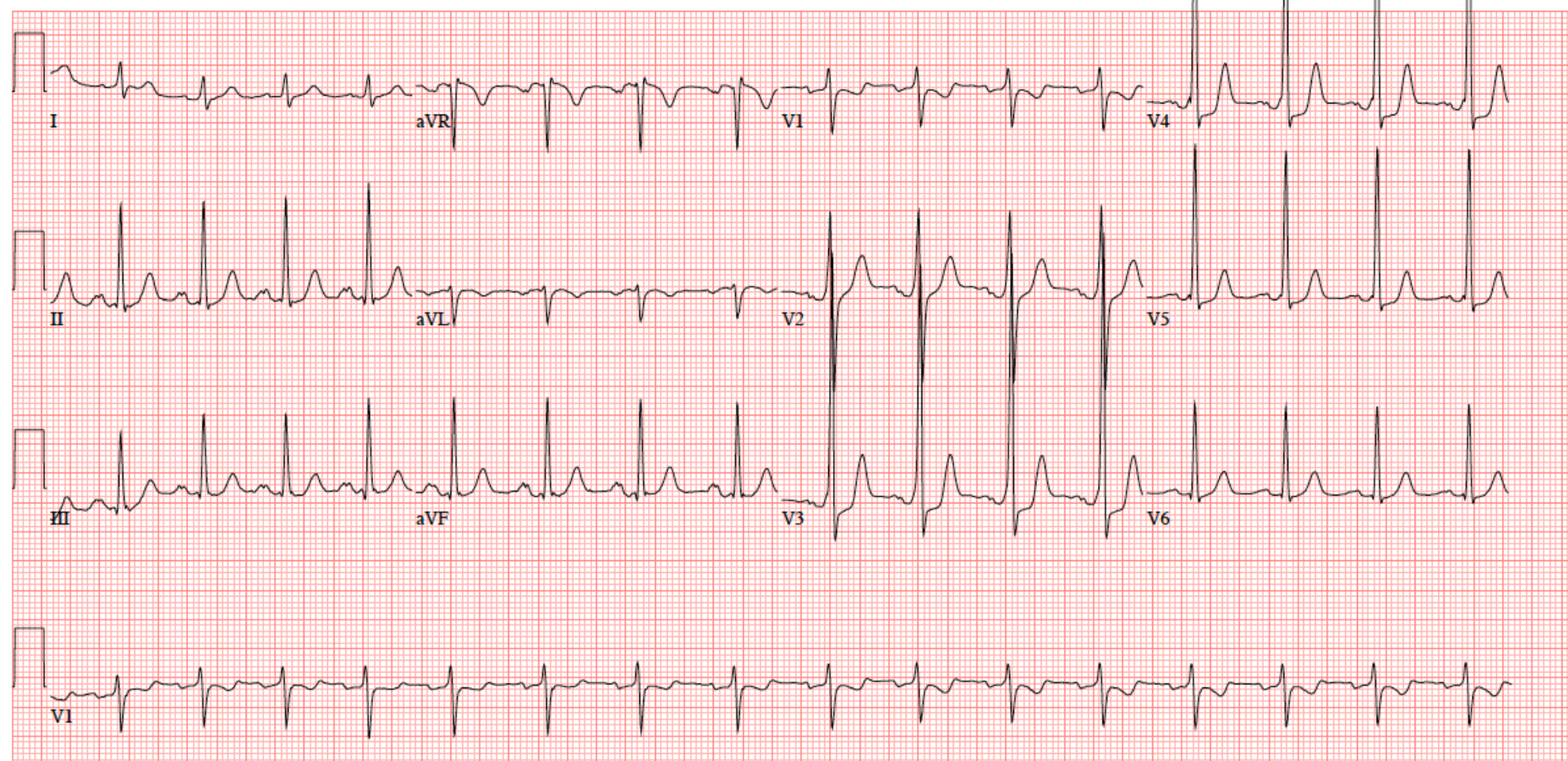
Room:
Loc:12

Technician
Test ind:

Referred by:

Confirmed By:

COMMENTS:



25mm/s 10mm/mV 40Hz 7.0.2 12SL 237 CID: 1

EID:1028 EDT: 11:15 02-MAY-2007 ORDER: 1

Page 1 of 1

Chapter 3 – Premature Beats & Tachyarrhythmias – Case 11 – VT2

Same patient, after conversion to sinus rhythm.

Rate:	Atrial:_____	Ventricular:_____
PR:	_____	
QRS:	_____	
Axis:	_____	
Rhythm:	_____	
Interpretation:	_____	

1. What subtle abnormality is present?

2. What definitive management does he need?

Male
(37 yr)

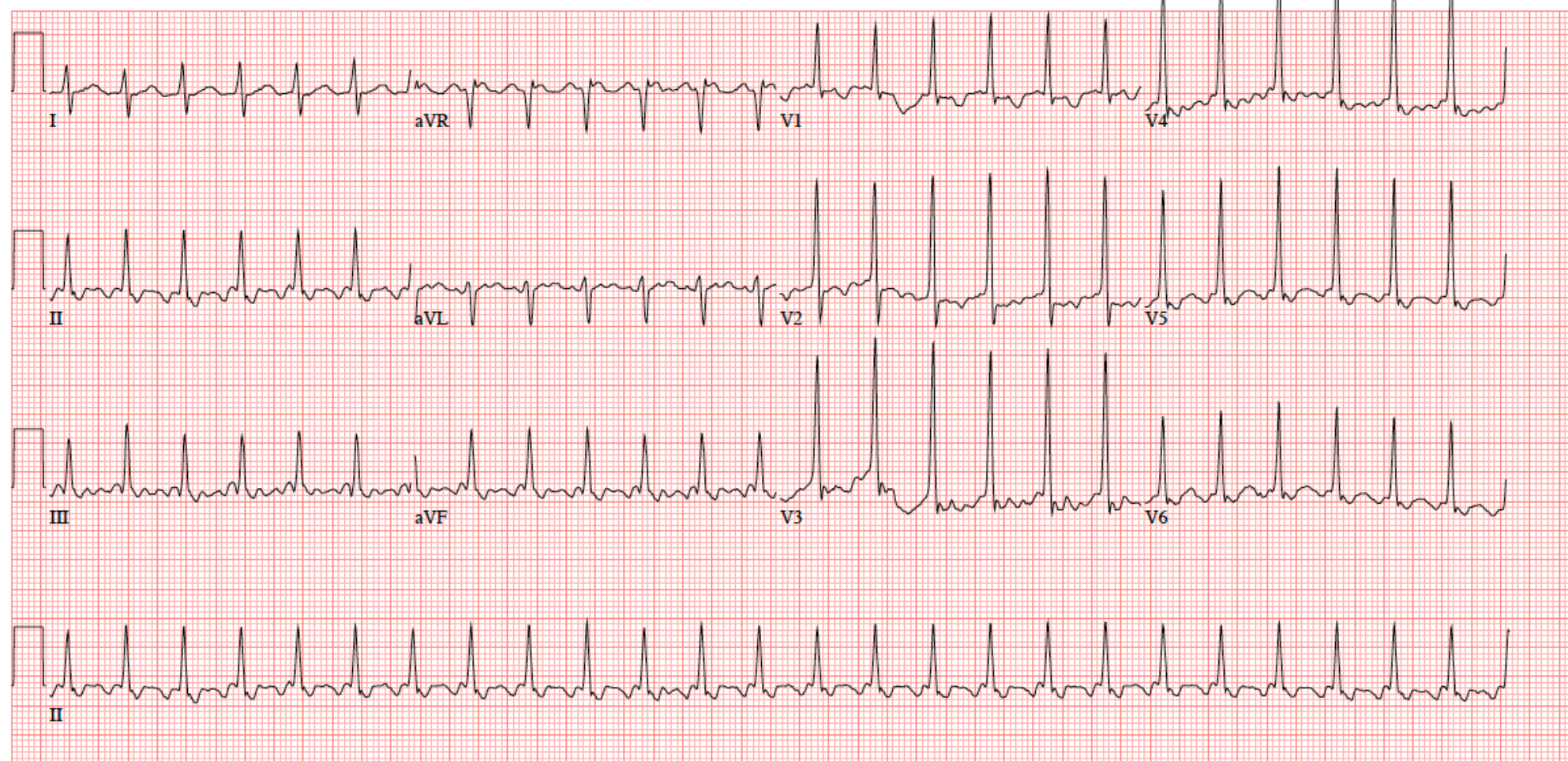
Room:
Loc:10

Technician:
Test ind:

Referred by:

Confirmed by:

COMMENTS:



25mm/s 10mm/mV 100Hz 7.1.1 12SL 237 CID: 3

SID: 875097300 EID:4315 EDT: 14:33 25-MAR-2009 ORDER:

Chapter 3 – Premature Beats & Tachyarrhythmias – Case 12 – DB

37-yr-old male with cardiac surgery one year previously for an ASD and partially anomalous pulmonary venous drainage. Presented with palpitation and exertional syncope.

Rate:	Atrial:_____	Ventricular:_____
PR:	_____	
QRS:	_____	
Axis:	_____	
Rhythm:	_____	
Interpretation:	_____	

1. What is the rhythm is present?

2. What may have been the cause of his syncope?
