



ST+: IDM ?

Ou quand les spécialistes se trompent



Pour raccourcir le temps entre le début de la douleur thoracique et l'angioplastie coronaire, l'ECG est le seul examen immédiatement disponible au médecin surtout au SAM. L'existence d'un ST+ est la clé dans la décision d'envoyer le patient en salle de cathétérisme.

La question: dans quelle mesure on se trompe de diagnostic dans ce cas sachant que près de 15% des ST+ sont d'origine ischémique.

C'est l'objet d'une étude américaine récente dont voici les résultats.

Differentiating ST-Elevation Myocardial Infarction from Nonischemic ST-Elevation in Patients With Chest Pain

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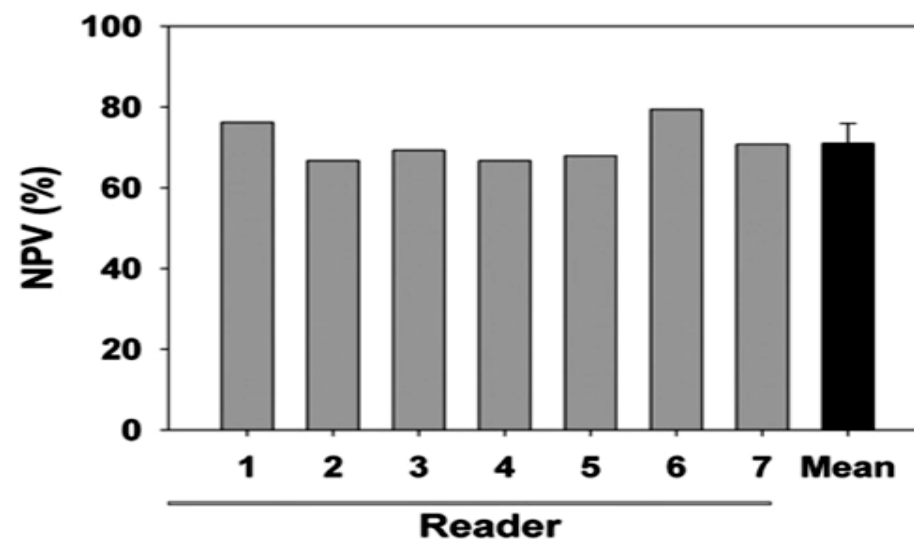
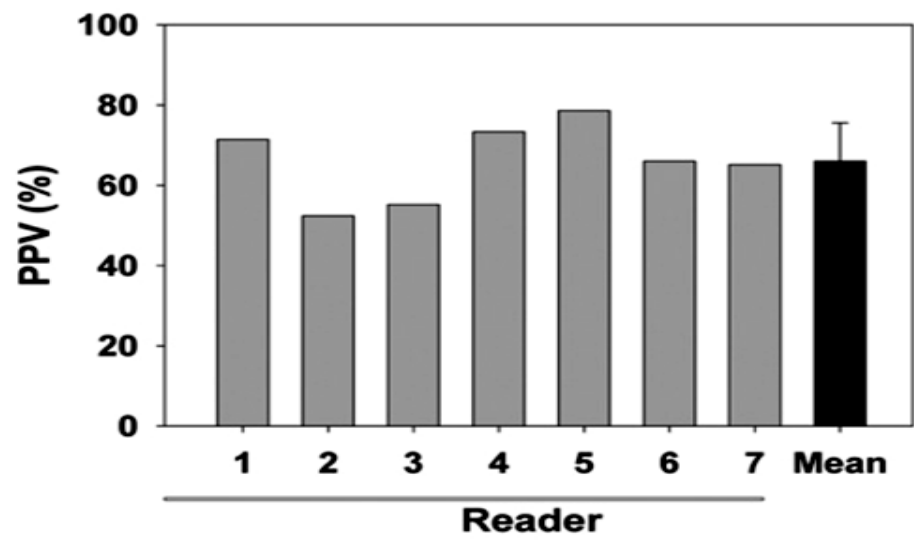
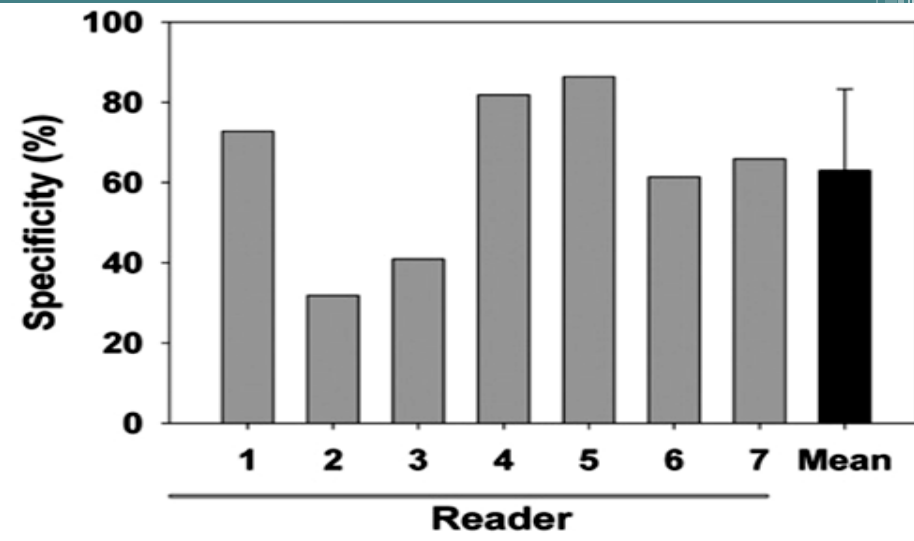
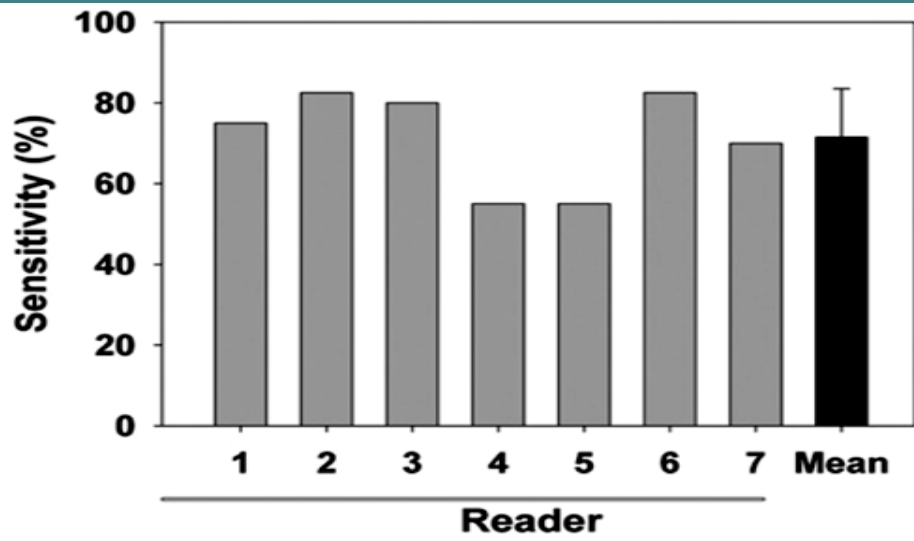


Figure 1. Sensitivity, specificity, positive predictive value (PPV), and negative predictive value (NPV) of the 7 individual readers (gray bars) and the average (black bars).

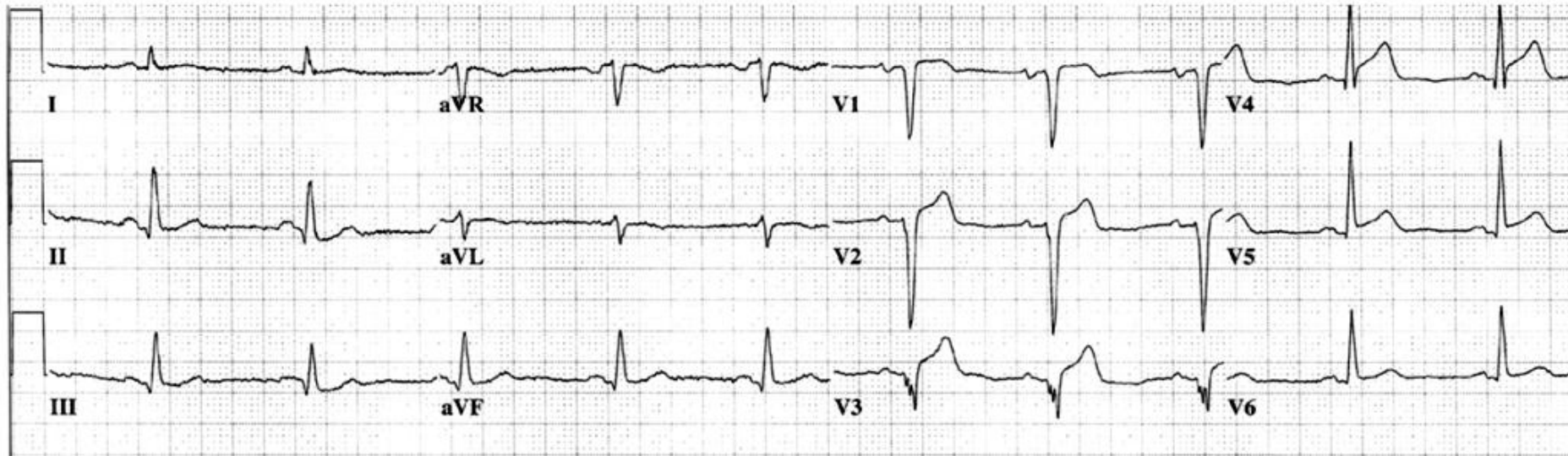
Table 1

Possible causes of nonischemic ST-segment elevation

	Reader						
	1	2	3	4	5	6	7
Left ventricular hypertrophy	21% (9)	20% (4)	31% (8)	6% (3)	14% (7)	27% (9)	10% (4)
Conduction defect	17% (7)	30% (6)	4% (1)	13% (7)	12% (6)	6% (2)	3% (1)
Early repolarization	19% (8)	10% (2)	4% (1)	4% (2)	18% (9)	3% (1)	8% (3)
Normal variant (mainly ST-segment elevation in leads V ₁ -V ₃)	12% (5)	10% (2)	15% (4)	2% (1)	0%	12% (4)	13% (5)
No reciprocal changes	0	0	0	27% (14)	0	0	15% (6)
Concave ST-segment elevation	0	10% (2)	0	2% (1)	20% (10)	6% (2)	8% (3)
Old myocardial infarction/aneurysm	21% (9)	10% (2)	19% (5)	13% (7)	24% (12)	12% (4)	26% (10)
Spontaneous reperfusion	0	5% (1)	0	2% (1)	0	3% (1)	0
Pericarditis	10% (4)	0	15% (4)	4% (2)	6% (3)	18% (6)	10% (4)
Brugada syndrome	0	0	0	2% (1)	2% (1)	0	3% (1)
No ST-segment elevation	0	5% (1)	12% (3)	25% (13)	6% (3)	12% (4)	5% (2)
Other	0	0	0	2% (1)	10% (5)	0	5% (2)
Total	42	20	26	53	56	33	41

ST+ ischémique ou non ischémique ?

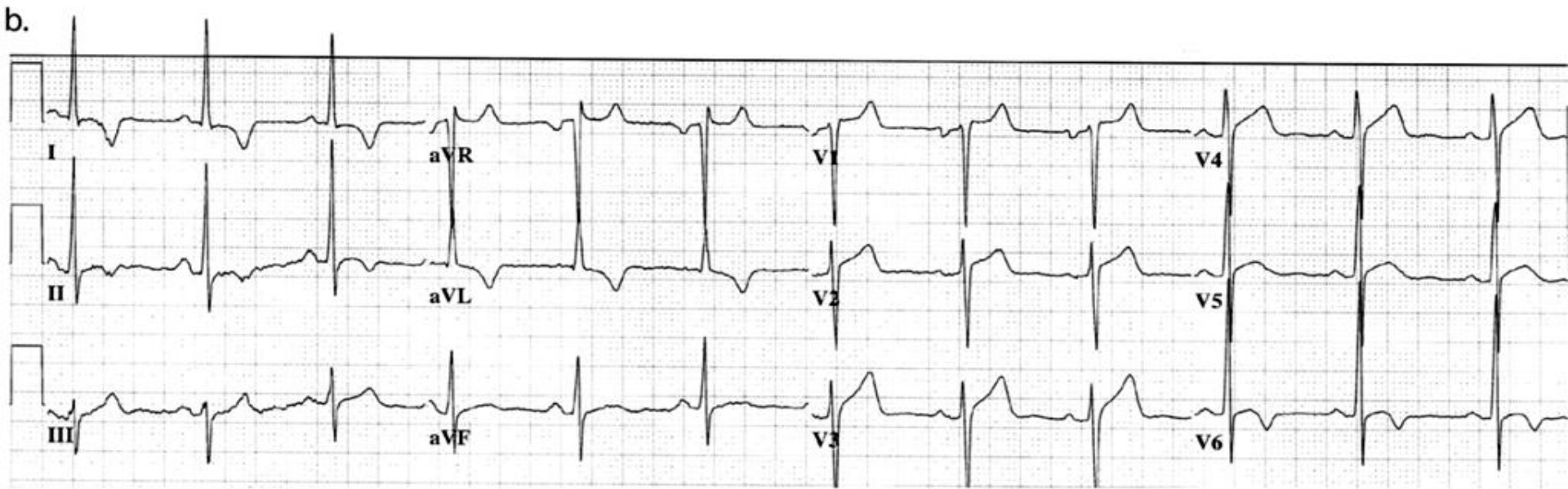
a.



(a) A 58-year-old man with human immunodeficiency virus had severe chest pain for 2 hours. QS waves are present in leads V1 to V3 with concave ST-segment elevation in leads V1 to V5.

Figure 2: Coronary angiogram showed a 99% thrombotic occlusive lesion in the left anterior descending coronary artery; percutaneous coronary intervention was performed. Peak creatine kinase-MB level was 157.3 ng/ml. Transthoracic echocardiogram on day 2 showed a left ventricular ejection fraction of 20% to 24% with apical akinesia. **Therefore, this patient had a true ST-segment elevation myocardial infarction.**

ST+ ischémique ou non ischémique ?

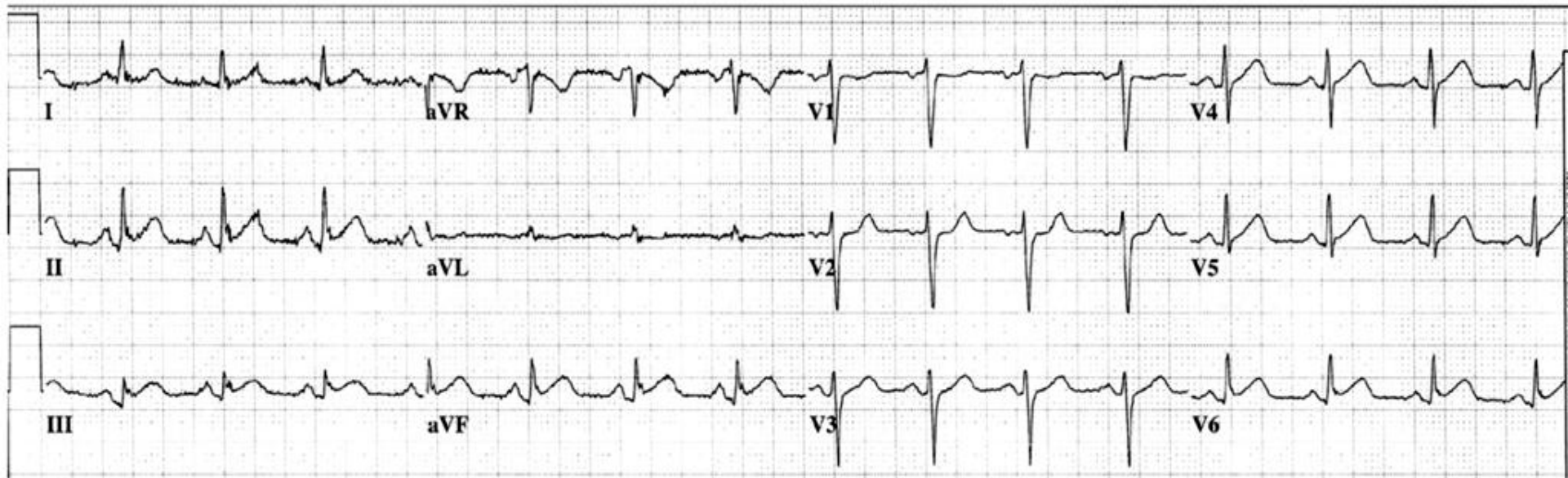


(b) A 49-year-old man with a history of uncontrolled hypertension presented with headache, chest pain, and blurred vision. Electrocardiogram shows left ventricular hypertrophy, concave ST-segment elevation in leads V1 to V5, and ST-segment depression with negative T waves in leads I, aVL, and V6.

The interventional cardiologist deactivated the primary percutaneous coronary intervention protocol because the electrocardiogram was comparable to previous tracings. The patient was observed in the chest pain unit and his cardiac marker levels did not increase. Transthoracic echocardiogram showed moderate left ventricular hypertrophy with a left ventricular ejection fraction 60% and no regional wall motion abnormalities. **Therefore, it was determined this patient had nonischemic ST-segment elevation.**

ST+ ischémique ou non ischémique ?

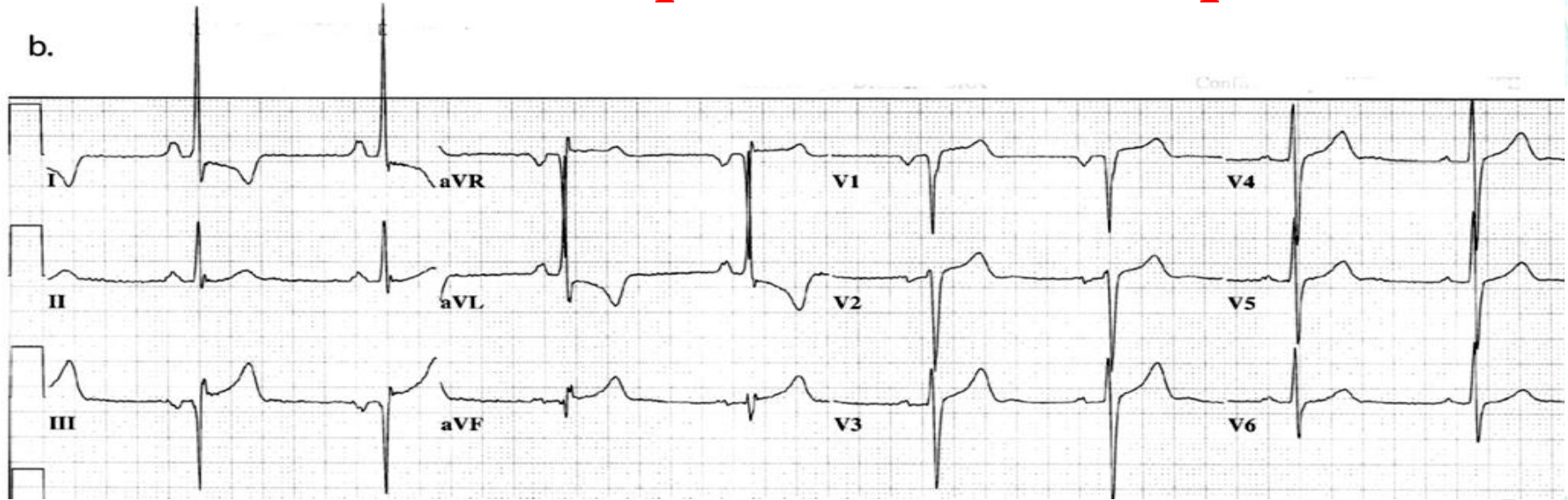
a.



(a) A 55-year-old woman had chest pressure for 45 minutes. Electrocardiogram showed mild ST-segment elevation in the inferior leads and leads V5 to V6.

Figure 3: Coronary angiogram showed no significant narrowing. Laboratory values showed a positive result for cardiac troponin, her creatine kinase-MB level was 48.5 ng/ml, and there was a typical increase and decrease in cardiac marker levels. Transthoracic echocardiogram showed hypokinesis of the distal inferolateral segment with preserved left ventricular systolic function (ejection fraction 55% to 60%). **It was determined this patient had a ST-segment elevation myocardial infarction.**

ST+ ischémique ou non ischémique ?



(b) A 52-year-old man with a history of uncontrolled hypertension and heavy alcohol consumption presented with chest discomfort and shortness of breath. Electrocardiogram showed left ventricular hypertrophy with ST-segment elevation in the inferior leads and leads V1 to V4 and ST-segment depression in leads I and aVL. There was no previous electrocardiogram on record for comparison.

The interventional cardiologist deactivated the primary percutaneous coronary intervention protocol after seeing the patient at bedside. Cardiac markers were negative. There were no dynamic electrocardiographic changes and transthoracic echocardiogram showed mild left ventricular hypertrophy with preserved left ventricular systolic function and no regional wall motion abnormalities. Coronary angiogram on day 3 showed no significant lesions. **Therefore, it was determined this patient had nonischemic ST-segment elevation.**

EN CONCLUSION

Dans l'interprétation d'un ST+ en cas de douleur thoracique le risque d'erreur n'est pas négligeable même pour les spécialistes. Un détail important qui peut aider: est il nouveau ou ancien? D'où l'importance des ECG réalisés auparavant.