Technical artifact? - 2017

Dr. Kjell Nikus, MD

Hello all, do you have any explanation for this strange ST/T change, which I consider as a technical artifact? She has hypertension and during abdominal pain she has some lateral ST depression, but otherwise the ST changes are strange.

Best regards

Kjell Nikus

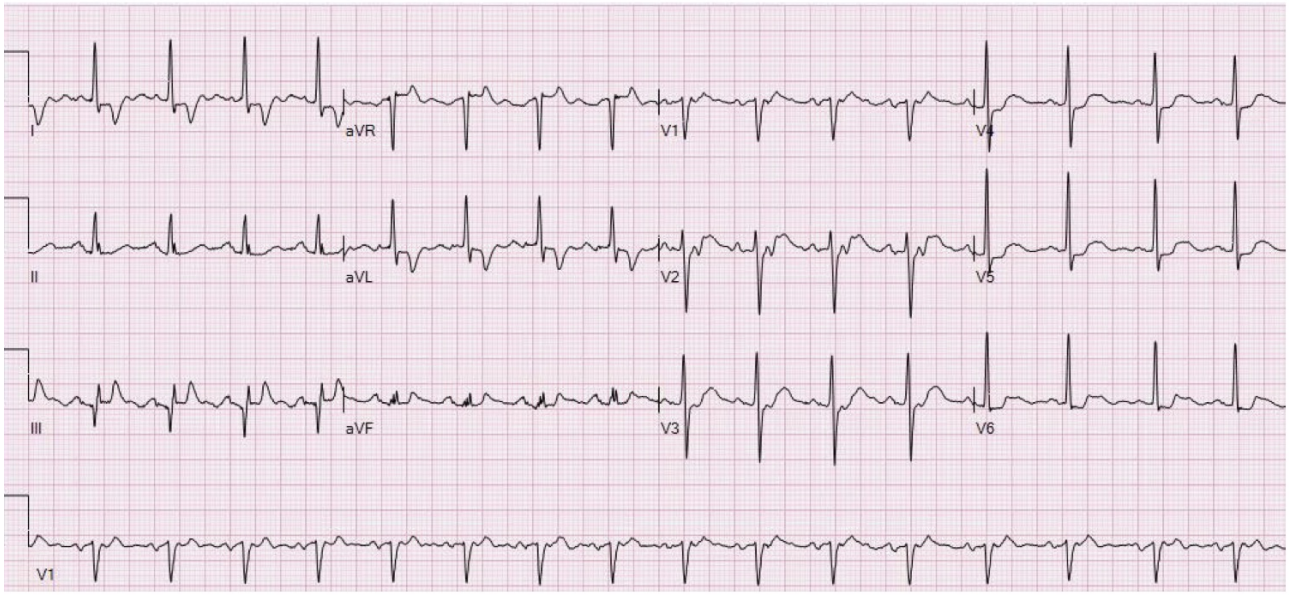
70-year old woman

Lower abdominal pain

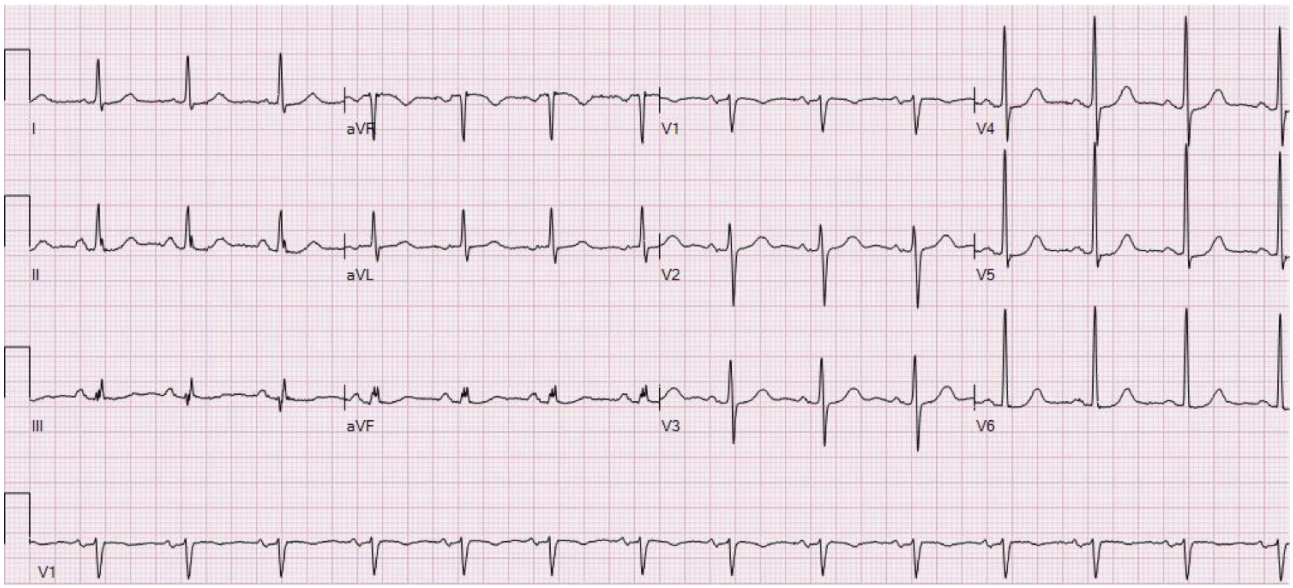
Routine ECG in the emergency department

Echo normal, troponin normal

ECG day 1
Technical artifact??



ECG 22 hours later



OPINIONES DE COLEGAS

Dearest friend Nikus: Acute abdominal pain may sometimes mimic an acute coronary syndrome or new T-wave inversions (transient repolarization abnormalities). Serial electrocardiograms sometimes show signs of ischemia or pseudo acute myocardial infarction. Frequently a coronary angiogram demonstrated no coronary artery disease, and

biomarkers such as serum troponin and CK-MB are undetectable. Physicians should keep in mind the possibility of an acute abdominal pain cause ECG modifications of repolarization.

I suggest amylaseand l lipase dosage for eventual pancreatic sources of lipolytic enzymes due to malignant tumors, to acute cholecystitis or esophagitis or very high hypertriglyceridemia or subclinical pancreatitis in patients with abdominal pain.

A hug for the ice man from the friend of the tropics

Andrés R. Pérez Riera

Hi Nikus,

I agree. This is a motion artifact altering the ST segment and T waves.

Best regards,

Mario D. Gonzalez

We are just reviewing a paper on ECG changes induced by changes in intra-abdominal as Andrés was explaining…

Adrian Baranchuk MD FACC FRCPC FCCS

O professor Binbaum considerado uma das maiores autoridades em ECG na coronariopatia pensa diferente.

Andres R, Pérez Riera

There are plenty of case reports of cholecystitis causing ST changes. For example:

Acute coronary syndrome mimicked by acute cholecystitis

Authors: Ersin Aksay, Murat Ersel, Selahattin Kiyan, Ekrem Musalar, Hasan Gungor

First published: 12 August 2010 Full publication history

DOI: 10.1111/j.1742-6723.2010.01291.x View/save citation

Cited by (CrossRef): 5 articles Check for updates

Also panceatitis:

Neth Heart J. 2011 Mar; 19(3): 137–139.

Published online 2011 Jan 27. doi: 10.1007/s12471-011-0072-x

PMCID: PMC3077856

Electrocardiographic abnormalities caused by acute pancreatitis

V. G. Meuleman,corresponding author1 A. F. L. Schinkel,1 and J. Vos2

Author information ► Copyright and License information ►

And even appendicitis

Am J Emerg Med. 2009 Jun;27(5):627.e5-8. doi: 10.1016/j.ajem.2008.08.025.

Acute ruptured appendicitis and peritonitis with pseudomyocardial infarction.

Liao WI1, Tsai SH, Chu SJ, Hsu CW, Lin YY.

Author information

Abstract

Acute abdominal conditions unexpectedly present with electrocardiographic changes. However, the presence of electrocardiographic changes and misleading clinical manifestations may obscure true etiology and delay surgical interventions. We present a patient who developed ruptured appendicitis with peritonitis manifested as acute inferior wall myocardial infarction-like electrocardiographic changes. A thorough physical examination and early echocardiographic evaluation helped to differentiate this pseudomyocardial infarction. A 64-multidetector-row computed tomography of the abdomen showed ruptured retrocecal appendicitis, and emergent appendectomy was done. Normalization of ST segments was observed after surgery.

Dear Kjell ll. Nice case! I have a similar one. I agree with Andres opinion. It,s not an artifact.

Best regards

Javier García Niebla

Nikus please read this article below

Stefanutti C, Labbadia G, Morozzi C.Severe hypertriglyceridemia-related acute pancreatitis.Ther Apher Dial. 2013 Apr;17(2):130-7. doi: 10.1111/1744-9987.12008.

Abstract

Acute pancreatitis is a potentially life-threatening complication of severe hypertriglyceridemia. In some cases, inborn errors of metabolism such as lipoprotein lipase deficiency, apoprotein C-II deficiency, and familial hypertriglyceridemia have been reported as causes of severe hypertriglyceridemia. More often, severe hypertriglyceridemia describes various clinical conditions characterized by high plasma levels of triglycerides (>1000 mg/dL), chylomicron remnants, or intermediate density lipoprotein like particles, and/or chylomicrons. International guidelines on the management of acute pancreatitis are currently available. Standard therapeutic measures are based on the use of lipid-lowering agents (fenofibrate, gemfibrozil, niacin, Ω-3 fatty acids), low molecular weight heparin, and insulin in diabetic patients. However, when standard medical therapies have failed, non-pharmacological approaches based upon the removal of triglycerides with therapeutic plasma exchange can also provide benefit to patients with severe hypertriglyceridemia and acute pancreatitis. Plasma exchange could be very helpful in reducing triglycerides levels during the acute phase of hyperlipidemic pancreatitis, and in the prevention of recurrence. The current evidence on management of acute pancreatitis and severe hypertriglyceridemia, focusing on symptoms, treatment and potential complications is reviewed herein.

Andrés R. Pérez Riera.

Hello!

It is clear that ST- T changes looks like artifacts
It is important to take in mind that any ST-T changes during abdominal pain, fever,

pneumonia, bleeding, etc could be secondary ishaemia, in a patient with prexisting atherosclerotic lessions
Best regards

Oswaldo Gutiérrez

Gracias Andrés!

Kjell Nikus