# Diclofenac-Induced Coronary Spasm in the Absence of Anaphylaxis or Allergic Manifestation

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Because of their anti-inflammatory, analgesic and antipyretic properties, non-steroidal anti-inflammatory drugs are among the most frequently prescribed drugs in all medical fields. The cardiac safety of widely used NSAIDs remains a topic of current interest, especially after the market withdrawal of rofecoxib, a selective inhibitor of cyclooxygenase 2 [1]. Conventional NSAIDs block both the cyclooxygenase 1 and cyclooxygenase 2 isoforms with varying degrees of selectivity, a mechanism purported to explain differences in reported risks. Diclofenac has been reported to increase the risk of myocardial infarction, which remains a subject of debate [2].

We report a case of acute coronary spasm that developed shortly after intramuscular administration of diclofenac, but the symptoms and electrocardiographic signs of an acute coronary syndrome were not accompanied by the typical manifestations of systemic hypersensivity reaction or anaphylaxis.

NSAIDs = non-steroidal anti-inflammatory drugs

## PATIENT DESCRIPTION

A 51 year old man was admitted to the emergency department due to low back pain of 2 days duration without neurological symptoms. He had been treated for diabetes and dyslipidemia for 10 years, and had no history of allergies. On admission to the emergency department a complete physical examination, electrocardiogram, and laboratory tests including electrolytes, complete blood count and renal function were within the normal range.

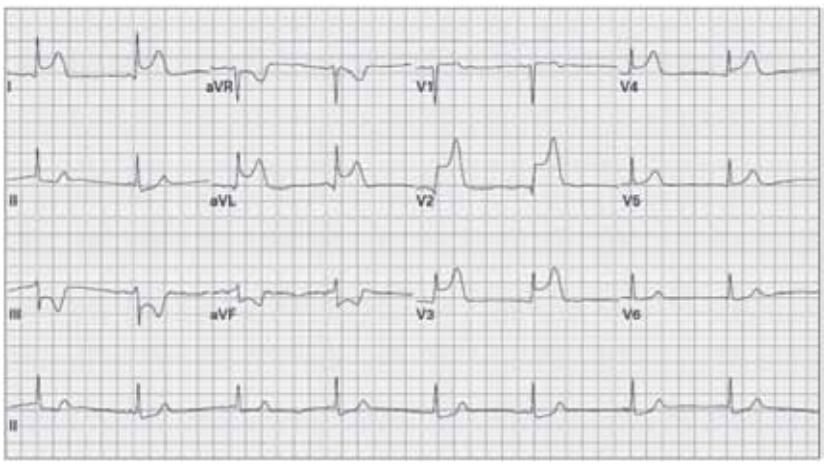
The patient was treated with 75 mg of diclofenac intramuscularly for pain relief. After 15 minutes he became restless and dyspneic and complained of epigastric pain. His blood pressure dropped for about 5 minutes to 60/40 mmHg with a regular pulse rate of 120 beats/min without any signs of skin rash, angioedema or pruritus. The ECG showed ST-segment elevation in antero-lateral leads with reciprocal changes in the inferior wall [Figure A], while the echocardiography study that was performed in the emergency department revealed significant hypokinesis of apical segments of the anterior and infero-lateral walls. An acute myocardial infarction was proposed and the patient was treated with an oxygen mask and intravenous fluid replacement. The ST-segment changes resolved spontaneously within 30 minutes; the cardiac enzymes including troponin "I" were negative.

The patient was admitted to the intensive cardiac unit. Repeat echocardiography the next day showed normal resting regional wall motion with a good global systolic and diastolic function. A coronary angiogram was unremarkable.

## COMMENT

We believe that the event of acute coronary syndrome with transient ST-elevation

ST-segment elevation



ECG changes was related to the diclofenac because of the close temporal association between the drug administration and the event.

Kounis syndrome, also known as "the allergic angina syndrome," is associated with coronary artery spasm and acute coronary syndrome following an allergic reaction. A probable allergic insult usually includes drugs, food, or exposure to latex. Kounis syndrome develops due to mast cell degranulation. The syndrome has two variants: type I includes patients with normal coronary arteries and type II includes patients with pre-existing atheromatous disease where the acute release of inflammatory mediators can induce coronary artery spasm with normal or elevated cardiac enzymes and troponins [3]. Mori et al. [4] reported two cases of vasospastic angina associated with anaphylactic reaction caused by NSAIDs. Both patients exhibited anaphylactic manifestations, such as general rash and urticaria, along with angina pectoris and electrocardiographic ST-segment elevations. Both patients had normal coronary arteriogram. Wieckhorst and co-authors [5] reported another case that developed severe symptoms of angina pectoris and electrocardiographic ST-segment elevation 3 days after an acute coronary syndrome [5]. That patient was treated with colchicine and diclofenac because of gout. The patient had extended vasospasm of the right coronary artery demonstrated by immediate coronary angiography. In our case, we observed ST-segment elevations in anterior derivations due to coronary artery spasm without underlying coronary artery disease and without systemic allergic manifestations such as skin rash, angioedema, or evidence of mast cell degranulation. For this reason, we think that our case could not be Kounis syndrome. Since normal coronary arteries were shown angiographically, a vasospastic mechanism was considered.

In summary, we report a 51 year old man who was admitted to the emergency department with low back pain. Shortly after intramuscular diclofenac therapy he became restless, dyspneic and hypotensive. The ECG showed a transient ST-segment elevation in anterior and inferolateral leads, with transient focal hypokinesis on the echocardiogram, and normal coronary angiography.

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## Capsule

### Meat consumption and mortality: results from the European Prospective Investigation into Cancer and Nutrition

Recently, some U.S. cohorts showed a moderate association between red and processed meat consumption and mortality, supporting the results of previous studies among vegetarians. Rohrmann and co-authors examined the association of red meat, processed meat, and poultry consumption with the risk of early death in the European Prospective Investigation into Cancer and Nutrition (EPIC). Included in the analysis were 448,568 men and women without prevalent cancer, stroke, or myocardial infarction, and with complete information on diet, smoking, physical activity and body mass index, who were between 35 and 69 years old at baseline. Cox proportional hazards regression was used to examine the association of meat consumption with all-cause and cause-specific mortality. As of June 2009, 26,344 deaths were observed. After multivariate adjustment, a high consumption of red meat was related to higher all-cause mortality (hazard ratio = 1.14, 95% confidence interval 1.01–1.28, 160+ vs. 10 to 19.9 g/day), and the association was stronger for processed meat (HR = 1.44, 95%CI 1.24–1.66, 160+ vs. 10 to 19.9 g/day). After correction for measurement error, higher all-cause mortality remained significant only for processed meat (HR = 1.18, 95%CI 1.11–1.25, per 50 g/day). We estimated that 3.3% (95%CI 1.5%–5.0%) of deaths could be prevented if all participants had a processed meat consumption of less than 20 g/day. Significant associations with processed meat intake were observed for cardiovascular diseases, cancer, and 'other causes of death'. The consumption of poultry was not related to all-cause mortality.

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**"You can't do anything about the length of your life, but you can do something about its width and depth"**

H.L. Mencken (1880-1956), American writer, editor and critic