

# An Unusual Presentation Of Painless Myocardial Infarction To The Emergency Department

N Ahmed, S Muzaffar, P Thomas

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## Abstract

Myocardial Infarction presenting without chest pain is not uncommon in the Emergency Department. We present a case of painless myocardial ischemia in a patient with a complex background of chronic pain whose perception of pain was possibly altered by the use of high doses of opioid analgesics. The significance of early diagnosis of silent ischemia and the pit falls for physicians working in the emergency department are discussed. The importance of simple tests like an electrocardiogram in the overall assessment of patients presenting with a blurred history is also highlighted.

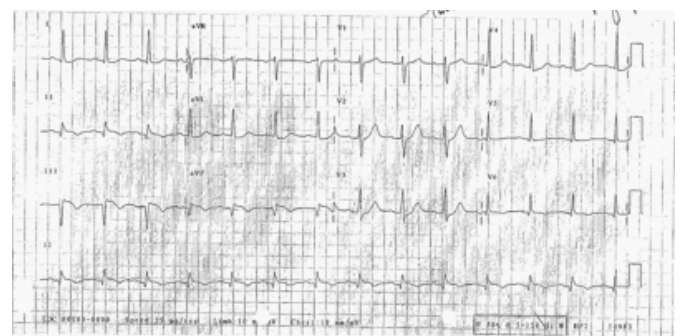
## CASE REPORT

A 65 year old man presented to the emergency department early in the morning with severe pain in his neck, left arm and left leg. He had an intricate orthopaedic background and had previously attended the department on multiple occasions for pain relief. He had been suffering from continuous severe pain after a road traffic accident 3 years ago in which he sustained a left femoral neck and L3 and L4 vertebral fractures. A year ago he had undergone C5, C6 & C7 laminectomy for spinal stenosis. For the past 3 months his symptoms of cervical stenosis had worsened. He was now complaining of paresthesia in both his hands and legs with hypertonicity in the left arm. Recent surgery for a peri-prosthetic fracture had left him with a very painful left hip. He was taking large doses of non opioid analgesics and was currently on 240 mgs of modified release oral morphine in divided doses. This was supplemented by 10 mgs of oral morphine sulphate for breakthrough pain. Before presenting, he had taken 300 mg oral morphine in the last 24 hours; however the intensity of pain had failed to settle. On close questioning, he mentioned that during his physiotherapy session in the morning, he had experienced palpitations. This had continued on and off through out the day, and the worst episode was in the evening which lasted approximately one hour. There were no other associated symptoms and he denied any chest pain. He had neither past history nor any risk factors for developing ischemic heart disease. Cardiovascular examination was completely normal. During his routine workup, an electrocardiogram was done which surprisingly showed ST elevations in the inferior leads (Fig

1). His troponin I was found to be 4.86 µg /dl and creatinine kinase was 556 iU/ L. Other blood tests including lipid profile were normal and he had a normal chest X-ray. A diagnosis of painless myocardial infarction was made and he was transferred to coronary care unit for further management. A coronary angiogram showed that he had significant occlusion of the right coronary artery, which was successfully treated with percutaneous balloon angioplasty and stent placement. He remains symptom free on cardiovascular follow up.

## Figure 1

Figure 1: Electrocardiogram at presentation



## DISCUSSION

William Heberden first described the symptoms of myocardial ischemia as “Dolor Pectoris” in 1772<sup>[1]</sup> and for a long time it was believed that an ischemic heart is always painful. Silent myocardial infarction first emerged as a clinical entity in 1912 after a landmark paper by James Herrick<sup>[2]</sup>. The epidemiology and characteristics of silent

ischemia have been well described, with much of the understanding coming from the Framingham study and its later evaluations. It seems that acute coronary syndrome with atypical symptoms or painless myocardial ischemia is probably more common than one would expect. Based on findings of two different studies, the incidence of myocardial infarction without chest pain seems to be somewhere in the range of 8.7% [3] and 20% [4]. In these patients the most common symptoms at presentation include shortness of breath, diaphoresis, nausea and vomiting, palpitations, syncope and cardiac arrest. It was found to be more common in females, in the elderly population and in patients with diabetes mellitus or heart failure but was less likely in smokers or in patients who have a history of hyperlipidemia [4]. With such a wide variety of presenting symptoms it is not surprising that the atypical presentation of acute coronary syndrome can go unrecognized, which may lead to inferior care and a poorer outcome [3]. Early recognition of the diagnosis is most important in these patients as they are at high risk of unpredictable ischemic events and have much to gain from the aggressive use of evidence based treatments with minimal delay.

Our case suggests a very simple and commonsensical reason behind painless ischemia. His only medical background was of somatic pain, which was difficult to control even with high doses of opioid analgesics. He was not elderly or diabetic and did not have pre-existing heart failure. Thus the most common associations attributed to painless ischemia were absent in this case. It is not difficult to conceive that the distracting effect of ongoing pain together with large doses of non-opioid and opioid analgesics may have altered

nociception to such an extent that the characteristic “dolor” associated with an ischemic heart was either not felt or not noticed. It would be safe to conclude that this was the possible explanation as to why the patient did not report chest pain on presentation.

In the context of a busy emergency department, a number of patients with chronic pain who attend these departments for pain relief have significant psychosocial issues. Important aspects of history and clinical presentation may be overlooked in these patients. This in itself might be a contributing factor in the failure to recognize rare underlying problems. This case accentuates the importance of thorough assessment of such a patient, with special emphasis on curious symptoms. It is also important to remember that baseline investigations like a 12 lead electrocardiogram are very useful in an acute setting and should be done in all patients in whom history is either sparse or unreliable.

### **References**

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**Author Information**

**N. Ahmed, MBBS**

Departments of Accident & Emergency and Internal Medicine, Milton Keynes General Hospital

**S. Muzaffar, MBBS**

Department of Internal Medicine, Milton Keynes General Hospital

**P. Thomas, FRCS**

Department of Accident & Emergency Medicine, Milton Keynes General Hospital