

Acute Myocardial Infarction Identified in a Peripheral Clinic and Treated with Urgent Surgical Revascularization: Door to Knife in Less than Three Hours

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INTRODUCTION

According to the World Health Organization, coronary heart disease kills more people each year in high, middle and low income countries alike than any other disease. The 2012 Pan American report for Trinidad and Tobago showed a 51% raised risk for non-communicable lifestyle disease and the concomitant risk of cardiac disease in the 25–64-year age group with a reported increased rate of obesity, hypertension and diabetes (1).

The urgent management of the patient with acute coronary syndrome is dictated by the need to prevent irreversible damage and infarcted myocardium (2). The question of the advancement of technology and the availability of healthcare as it relate to service that is needed, cost of the service and the overall economical benefit, is forever being asked. Even though they are considered developing countries, Trinidad and Tobago and the wider Caribbean have kept up with the advancement of technology in early diagnosis and treatment of heart related problems. However, in Trinidad and Tobago where cardiovascular disease is reaching epidemic proportion, more work is required to educate the general public as well as providing a 24-hour integrated cardiac service. This will be possible only with a clear and committed service delivered as a joint effort between the private and public sectors (3).

Keywords: Bypass, cardiovascular surgery, myocardial infarction

CASE REPORT

A 56-year old male, with a past history of hypertension and dyslipidaemia, presented to a rural satellite cardiac clinic complaining of typical chest pain at rest. Of significance in his history, a stress echocardiogram performed one week prior to presentation was positive for ischaemia and showed hypokinesia in the mid septal and mid anteroseptal wall.

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Upon review by the cardiologist, his electrocardiogram (ECG) showed ST depression 2-3 mm in the lateral leads. He was given aspirin 80 mg, clopidogrel 300 mg, nitroglycerine patch 0.4 mg/hour and immediately transferred *via* ambulance to a private specialized centre.

The diagnosis on admission was of acute coronary syndrome, non-ST segment elevation myocardial infarction with positive troponin and within 20 minutes he was taken to the catheterization laboratory after informed consent was obtained for angiography plus possible percutaneous coronary intervention (PCI) or coronary artery bypass surgery.

Coronary angiogram showed a 95% severe distal left main (LM) lesion, 70% middle stenosis of the left anterior descending artery (LAD) and a 95% proximal stenosis of first obtuse marginal (OM1) branch of the circumflex artery. His right coronary artery (RCA) was occluded proximally with collateral circulation from the LAD.

A decision was made jointly by the cardiologist and cardiothoracic surgery team to transfer the patient immediately for surgery due to his ongoing chest pain not relieved medically and ECG changes and the risk of sudden death from the severe LM stenosis. The patient underwent off pump coronary revascularization with a left internal mammary artery (LIMA) to the LAD and saphenous grafts to the posterior descending and OM1 arteries. The time that elapsed from diagnosis to start of the surgery was less than three hours.

On completion of the surgery, the patient was transferred to the intensive care unit in a haemodynamically stable condition and after an uneventful recovery was discharged home on the fourth postoperative day. At one year of follow-up, the patient was asymptomatic, with negative non-invasive ischaemic testing and optimal exercise capacity.

DISCUSSION

This case exemplifies the need for early detection, diagnosis and a readily available cardiac team to respond to a life-threatening cardiac condition. The treatment of this patient was an excellent example of guidelines implementation, where within the set time limits his acute ischaemia was addressed with coronary artery bypass graft surgery (CABG) when management by PCI was not feasible.

Many patients are unaware of symptoms of cardiac pain or are reluctant to call for early medical help. Patients may be unaware of the emergency ambulance service numbers and rural hospitals are sometimes underequipped with emergency vehicles (4). Often, hospitals are understaffed and underequipped to properly meet the recommendations of American and European cardiology guidelines (5, 6) of door to ECG of 10 minutes and first medical contact (FMC) to needle of 30 minutes in the case of fibrinolysis or FMC to PCI of 90 minutes. In addition, the latter, in Trinidad and Tobago, is limited to private institutions and can only be accessed in the public sector at Eric Williams Medical Sciences Complex but not on a 24-hour basis. Coronary artery bypass grafting is available on an emergency basis only in the private sector (3).

There is urgent need for structured plans to address the critical issues of primary prevention and education of the population on a healthier lifestyle. Implementation of a structured framework is necessary so that the population can be aware of the available facilities in case of an acute coronary event. Institutional issues in medical efficiency and best use of available resources must be addressed.

Finally, in a country where cardiovascular disease is reaching epidemic proportion, a joint effort between the private and public sectors could be a most efficient option.

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