# COMMENTARY

## Cardiology Related Complaints

***Dr Telal Mudawi MD FRCP,*** Consultant Interventional Cardiologist
Clinical Governance Lead for the Division of Medicine. Wrightington, Wigan and Leigh NHS Foundation Trust. Royal Albert Edward Infirmary. Wigan Lane, Wigan WN1 2NN
Clinical adviser for the Parliamentary & Health Service Ombudsman (PHSO)

**CASE 1**

**Background and Chronology:**

Mr G had a known background medical history of type 2 diabetes mellitus. He was 62 years of age when he had an echocardiogram scan on **27th August 2010**, which was performed to investigate symptoms of exertional breathlessness that had been troubling him for the preceding three months. The echocardiogram demonstrated no haemodynamically significant valvular abnormalities but revealed underlying severe left ventricular systolic dysfunction (LVSD) together with a mural thrombus. The LV ejection fraction was quantified at about **25%**.

Mr G was therefore commenced on Warfarin in addition to beta blocker, ACE inhibitor and Spironolactone therapy. As he continued to remain breathless despite medical treatment, he was booked for a diagnostic coronary angiogram, which was subsequently performed electively on **8th October 2010** (*by Dr M, consultant cardiologist*) and demonstrated severe & calcific proximal three vessel coronary disease. Following the angiogram, Mr G became acutely unwell with pulmonary oedema and - *instead of being discharged on the same day as originally planned* – he was admitted overnight for intravenous diuretic treatment, to which he responded well. He was later allowed home the following morning.

After Mr G's discharge, Dr M sent a referral letter to Mr F (*Consultant Cardiac Surgeon*). The letter was dated **11th October 2010**, in which Dr M stated that he was certain that the cause of Mr G's severe LVSD was myocardial ischaemia, as evidenced by the severe three vessel coronary disease demonstrated on coronary angiography. Dr M also emphasised on the need to prioritise Mr G's assessment for coronary artery bypass grafting (CABG) and suggested that a prolonged wait should best be avoided due to the severe nature of Mr G's coronary disease. Furthermore, Dr M also offered to organise either a cardiac MRI or a myocardial perfusion scan if Mr F agreed a functional test would be required.

Mr G was reviewed by Mr F in clinic on **3rd December 2010**, and Mr F then decided to perform a perfusion cardiac MRI scan to look for evidence of myocardial viability, in order to check whether the severe LVSD was mostly due to myocardial scarring, in which case CABG would not be expected to improve the LV function and therefore should not be considered, or whether the myocardium was alive but severely ischaemic, in which case CABG would be expected to improve the LV contractility and would therefore be recommended in that situation.

Mr G had the cardiac MRI scan performed on **5th January 2011**, the report of which was produced on **17th January 2011**. That report revealed that all **17** myocardial segments were viable, and that **13** of them were suffering from severe ischaemia. The report concluded that, given the presence of viability, the myocardial contractility should improve following CABG, which

was later booked for **9th February 2011**. However, Mr G sadly died on **27th January 2011**.

Mr G's family were unhappy with the length of time that the hospital took to finally decide to list him for cardiac surgery, and argued that he would have still been alive had CABG been performed a month or so earlier than it was planned. No local resolution was reached and the complaint was therefore referred for investigation at the Parliamentary & Health Service Ombudsman (PHSO, the UK national institution that investigates NHS complaints).

**Questions for the PHSO Cardiology Clinical Adviser:**

**Question 1:**

What has happened?

**Answer to Question 1:**

Please refer to the summary in the background and chronology section above.

**Question 2:**

What should have happened?

**Answer to Question 2**

Given Mr G's underlying severe LVSD and his severe three vessel coronary artery disease identified on coronary angiography on **8th October 2010,** and given the fact that he became clinically unstable after that procedure, the fragility of his severe heart condition should have become more obvious to the clinical team. He should have therefore been kept as an inpatient following his deterioration and development of pulmonary oedema, and he should have been referred and transferred for CABG as an inpatient. Any required investigations such cardiac MRI could have been arranged for him as an inpatient. If this inpatient route was pursued at the time, Mr G would have been able to have his MRI and CABG within the space of 3-4 weeks at the latest.

While Dr M seemed to recognise the need for a prioritised (rather than routine) assessment of Mr G for CABG, and while he also seemed to recognise the likelihood of needing a cardiac MRI scan to better guide the treatment decision RE: CABG or otherwise, yet he decided to discharge Mr G and refer him to see Mr F as an outpatient. Furthermore, despite his understanding of the prioritised nature of the referral and that a cardiac MRI would likely be needed for Mr F to be able to reach a decision, Dr M still opted to not pre-emptively arrange the MRI scan for Mr G to have while waiting to see Mr F (*i.e. before **3rd December 2010***). Doing so would have saved valuable time and Mr G would have then been able to see Mr F on **3rd December 2010** with the MRI scan result (*which would have demonstrated the presence of ischaemic viable myocardium that would improve after CABG*). CABG itself would have then been arranged around the first or second week of **January 2011**.

The below guidance statement is quoted from the European Society of Cardiology Guidelines (2010) on myocardial revascularisation, clearly stating the importance of performing a myocardial viability test (**such as cardiac MRI**) in patients who have severe LVSD in the presence of severe coronary disease yet no angina (such as Mr G). The statement further confirms the fact that those patients who have demonstrable evidence of myocardial viability do benefit from coronary revascularisation treatment (such as CABG).

***"Myocardial revascularization in chronic heart failure:***

Coronary Artery Disease (CAD) is the most common cause of Heart Failure (HF). The prognosis for patients with chronic ischaemic LV systolic dysfunction remains poor despite advances in various therapeutic strategies. The established indications for revascularization in patients with ischaemic HF pertain to patients with angina and significant CAD. The associated risk of mortality is increased and ranges from 5 to 30%. The

management of patients with ischaemic HF without angina is a challenge because of the lack of RCTs in this population. In this context, the detection of myocardial viability should be included in the diagnostic work-up of HF patients with known CAD. Several prospective and retrospective studies and meta-analyses have consistently shown improved LV function and survival in patients with ischaemic but viable myocardium, who subsequently underwent revascularization"[i]

End of guidance statement

Although it is clear that Mr G would have benefited from CABG given the favourable findings of the cardiac MRI scan, it remains uncertain as to whether he would have definitely survived if he'd had his CABG before **27th January 2011**. However, his chances of survival beyond that date would have been significantly maximised if he were to have had CABG beforehand.

**Question 3:**

What is the gap between what has happened and what should have happened?

**Answer to Question 3:**

There was an unjustifiable delay between Mr G's coronary angiogram on **8th October 2010** and the finally planned CABG date of **9th February 2011**. That delay occurred because the severity of Mr G's heart condition and prognosis were not deemed serious enough for him to be referred for MRI and CABG as an inpatient, which would have been performed sometime in late October to early November 2010 (when he would have stood the best chance of survival). Failing that, a cardiac MRI should have been requested at the same time as the referral for CABG assessment. That would have saved time and would have led for CABG to have been performed around the first or second week of January 2011.

**Conclusions:**

- Mr G should have been admitted on **8th October 2010** and referred for cardiac MRI and then CABG as inpatient.
- If Mr G was deemed too fit to be kept as an inpatient following his instability on **8th October 2010**, he should have at least been referred for a cardiac MRI and CABG assessment at the same time, so that his cardiac MRI scan result would be ready for Mr F to review during the clinic consultation on **3rd December 2010**.
- If Mr G had managed to have his CABG operation before **27th January 2011**, there is a realistic chance that he could have survived beyond that date. However, this cannot be confirmed with 100% certainty since the operation itself would have incurred a mortality risk.
- The Trust (hospital) should acknowledge the above failings in full and unreservedly apologise for them. Dr M in particular should reflect on his management plan in some depth and accept the fact that he has failed to fully appreciate the seriousness of Mr G's condition, and the speed with which he should have been investigated.
- While the inflicted injustice can't be rectified, appropriate financial remedy should be offered to the family in recognition of their loss and distress. Furthermore, an effective CABG referral pathway should be devised and regularly audited, wherein similar undue delays are quickly spotted and proactively avoided.

[i] European Society of Cardiology: Guidelines for Myocardial Revascularisation (2010); page: 2527. http://www.escardio.org/guidelines-surveys/esc-guidelines/GuidelinesDocuments/guidelines-revasc-FT.pdf