

Publication Brief

False Positive Transit Time Flowmetry Graft Failure in Multivessel Coronary Spasm following Off-Pump Coronary Artery Bypass Grafting.

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BACKGROUND

Intraoperative Transit Time Flowmetry is currently recommended by European Guidelines to assess graft patency during coronary artery bypass grafting (CABG), especially in presence of hemodynamic instability or inability to wean the patient from cardiopulmonary bypass, new regional wall motion abnormalities, or significant ventricular arrhythmias.

CASE REPORT

A 71-year-old male diabetic patient was admitted to the Oxford Heart Centre within 48 hours from an episode of angina at rest. Coronary angiogram demonstrated severe left main stem stenosis and three vessels coronary artery disease, with a preserved left ventricular systolic function. The patient underwent off-pump CABG using a skeletonized left internal mammary artery (LIMA) to the LAD and long saphenous vein grafts to the OM and PDA coronary arteries. After completion of the all three grafts, there was excellent flow in the LIMA-LAD (83 mL/min) but not in the saphenous vein grafts (OM, 8 mL/min; PDA 9 mL/min. At the end of the procedure the patient developed significant ECG ST depression. The sternotomy was reopened and all grafts were revised. LIMA to LAD was found to be widely patent but both vein grafts had minimal flow with no distal run-off. The patient's condition was stabilized with the use of inotropes and intra-arterial balloon pump (IABP). An urgent angiography confirmed the patency of all three grafts.

CONCLUSIONS

This case describes the occurrence of coronary spasm following off-pump CABG in a male patient with a poor controlled diabetes. TTFM measurements suggested impaired vein graft flow, but subsequent coronary angiography confirmed graft patency with significant coronary spasm. Cardiac surgeons should bear in mind the limit of VeriQ in distinguishing between graft failure and coronary spasm. Angiography may be considered in patients with decreased graft flow despite revision of anastomosis and vasodilatory treatment for the definitive diagnosis. The treatment for coronary spasm during CABG remains debated; time and vasodilators seem to be the most appropriate way of addressing this rare but dangerous clinical condition.

TAKE HOME

- Surgeons should consider all possible physiological conditions including coronary spasm before performing graft revisions.

REFERENCES

Kassimis G, Krasopoulos G, "False Positive Transit Time Flowmetry Graft Failure in Multivessel Coronary Spasm following Off-Pump Coronary Artery Bypass Grafting, Case Rep," *Cardiol.* 2017;2017:3186047 (Transonic Reference # 11322AHM Kassimis)