

'Ping pong' thrombectomy

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Accepted 5 April 2016

DESCRIPTION

A 68-year-old man presented to our emergency department, with an inferior ST elevation myocardial infarction (STEMI). He had previously undergone coronary bypass surgery with a saphenous vein graft (SVG) to the first obtuse marginal (OM1) and with a left internal thoracic mammary artery to the left anterior descending artery, in 2003. The right coronary artery was small and dominated.

Coronary angiography revealed an acute thrombotic occlusion of the SVG. After manual aspiration thrombectomy with an Export catheter (Medtronic, Minneapolis, MN, USA), a forceful contrast injection pushed abundant residual thrombus into the native OM1 branch, occluding retrograde blood flow to the distal circumflex circulation (PING...) (figure 1 and video 1). A distal protection device was not used because of a too short landing zone. A 4.5×28 mm bare metal stent was deployed and TIMI 3 flow (flow grades based on results of the Thrombolysis In Myocardial Infarction trial) established in the anterograde OM1 branch. Circulation to the distal circumflex artery was re-established after native left main and proximal circumflex stenting with a 3.5×28 mm bare metal stent. Again, on contrast injection, a highly mobile thrombus was dislodged from the proximal OM1 and pushed back into the SVG (...PONG) (figure 2 and video 2). A very large thrombus was subsequently extracted from the SVG with repeat manual thrombectomy. At the end of the procedure, blood flow through the native circumflex artery and SVG was normal and thrombus free.



Video 1 Selective SVG angiogram in right anterior oblique (RAO) caudal view showing forceful contrast injection pushing abundant residual thrombus into the proximal OM1 branch, occluding retrograde blood flow to the distal circumflex circulation. SVG, saphenous vein graft; OM1, first obtuse marginal.

To reduce thrombus burden and prevent distal embolisation during SVG revascularisation, some pharmacological strategies and devices (thrombectomy, filter devices) can be considered. Glycoprotein inhibitors in SVG revascularisation are not recommended because they have been shown to lack efficacy and increase bleeding complications.¹ Recent data from the TOTAL study suggest that routine manual thrombectomy as compared with

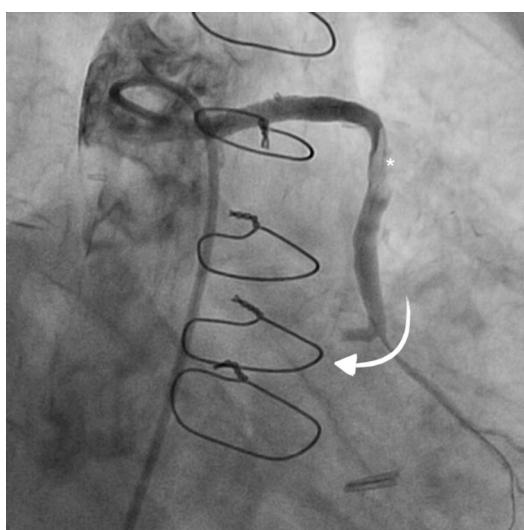


Figure 1 Selective SVG angiogram in RAO caudal view showing a forceful contrast injection pushing abundant residual thrombus (*) into the proximal OM1 branch (arrow), occluding retrograde blood flow to the distal circumflex circulation. SVG, saphenous vein graft; OM1, first obtuse marginal.

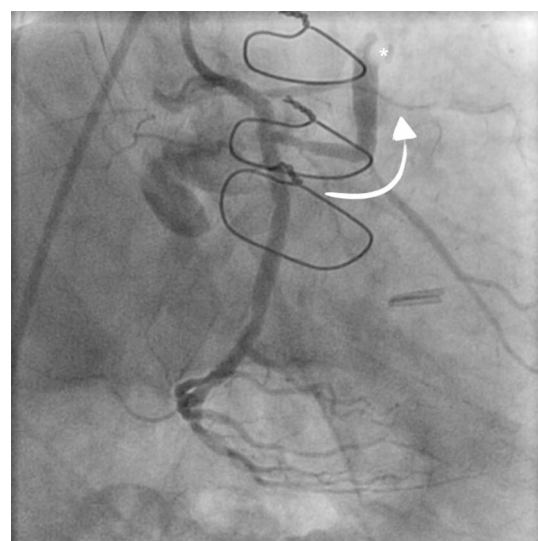


Figure 2 Selective left coronary artery angiogram in RAO caudal view showing contrast injection dislodging the same highly mobile thrombus (*) from the proximal OM1, and pushing it back into the SVG (arrow). SVG, saphenous vein graft; OM1, first obtuse marginal.



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To cite: Spagnoli V, de Hemptinne Q, Gallo R. *BMJ Case Rep* Published online: [please include Day Month Year] doi:10.1136/bcr-2016-214354



Video 2 Selective left coronary artery angiogram in RAO caudal view contrast injection dislodging the same highly mobile thrombus from the proximal OM1 and pushing it back into the SVG. SVG, saphenous vein graft; OM1, first obtuse marginal.

percutaneous coronary intervention (PCI) alone does not provide beneficial clinical outcome.² Furthermore, a recent meta analysis showed that routine manual thrombectomy as an adjunct to primary PCI is associated with an increased risk of stroke.³ However, selective use of thrombectomy in situations where abundant thrombus is present (eg, patients with STEMI and large thrombus load) may still be effective and recommended. Distal protection using filters may improve immediate results and avoid embolic complications.⁴ There are no recommendations regarding the use of distal protection before visualisation of the distal coronary vasculature in an acute SVG occlusion.

Learning points

- ▶ Use of thrombectomy in selected situations where abundant thrombus is present may be highly effective despite recent data suggesting that routine manual thrombectomy as compared with PCI alone does not provide beneficial clinical outcome.
- ▶ Embolic protection devices should be used during saphenous vein graft PCI when technically feasible.
- ▶ Percutaneous revascularisation of saphenous vein grafts is only recommended for acute occlusions, but not for chronic total occlusions.

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Competing interests None declared.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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