

SHORT REPORT

A Safe Method of Retrograde Passage of Fogarty Embolectomy Catheter Through Difficult Iliac Arteries

N. Haldipur, P. Tan, M. Katory and S. Singh*

Key Words: Iliac stent; Thrombus; Embolectomy.

Introduction

Retrograde instrumentation of the external and common iliac arteries may be difficult because of tortuosity, extensive exophytic disease or previous placement of a stent that may also be partially or totally occluded.

In principle, the safest technique of intravascular manipulation of instruments is under angiographic imaging control using a catheter-/guidewire-directed technique.¹ However, in practice, vascular surgeons may be faced with the need to negotiate a Fogarty embolectomy catheter up a difficult/stented iliac artery without the availability of either angiographic imaging control or catheter-/guidewire-directed technology. Blind and forceful passage of a Fogarty embolectomy catheter may result in dissection of a diseased native iliac artery or dislodgement of an iliac stent.

We would like to report a method of pre-shaping the tip of a Fogarty Arterial Embolectomy Catheter, which allowed its safe passage up a stented iliac artery to successfully treat critical limb ischaemia due to thrombosed iliac stent.

Case Report

A 65-year-old man with disabling bilateral calf claudication was found to have complete occlusion of

both common iliac arteries and a severely diseased infra-renal aorta on trans-brachial angiography. The aorta and left iliac artery were stented with three memotherm-FLEXX Vascular Stents (BARD Angiomed GmbH & Co.) diameters 16, 10 and 8 mm respectively, prior to performing a cross-over graft.² Within 24 h of the procedure the patient developed a critically ischaemic left limb due to sub-total occlusion of the aortic stent by thrombus (see Fig. 1).

Immediate left groin exploration was performed with a view to surgical thrombectomy of the left aorto-iliac stents. Repeated attempts made to pass 4F, 5F and 6F standard Fogarty Arterial Embolectomy



Fig. 1. Critically ischaemic left limb due to sub-total occlusion of the aortic stent by thrombus.

* Please address all correspondence to: S. Singh, Doncaster Royal Infirmary, Armthorpe Road, Doncaster DN2 5LT, U.K.

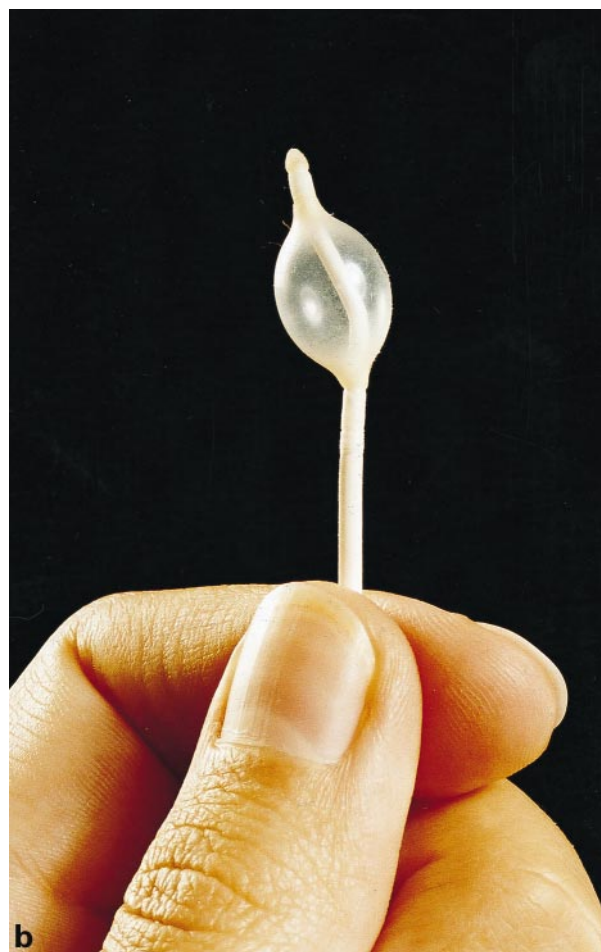
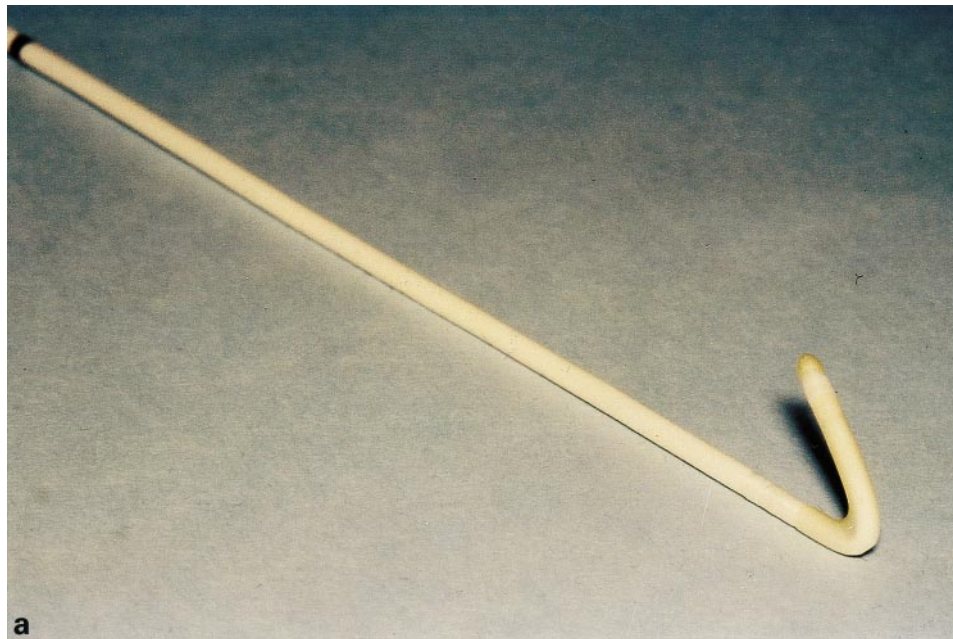


Fig. 2. (a) Fogarty arterial embolectomy catheter bent into a J-shape at the mid-point of its balloon. (b) Inflation of the balloon straightens the bent Fogarty arterial embolectomy catheter.

catheters (Baxter Health Care Corp.) via the left groin up the thrombosed aorto-iliac segment failed because the tip of the Fogarty catheters snagged within the stents. In order to overcome this, the tip of a 5F Standard Fogarty Arterial Embolectomy Catheter (Baxter Health Care Corp.) was bent into a J-shape at the midpoint of its balloon (see Fig. 2a). The pre-shaped J-tip of the embolectomy catheter passed smoothly and easily through the native and stented iliac arteries into the aorta. Inflation of the balloon in the aorta straightened the J-tip (see Fig. 2b) and by gentle traction the thrombus was successfully extracted without stent dislodgment. Inflow into the left ilio-femoral segment was restored. The patient went on to have a cross-over graft following which he made an uneventful recovery and was discharged a few days later.

He has since been reviewed in the outpatient department and is doing well.

Discussion

The safest method of traversing a diseased/stented iliac artery would be using guidewire/catheter-directed techniques under angiographic control. However, in practice, this may not always be readily available.

This technique of pre-shaping the tip of a Fogarty embolectomy catheter into a J-shape across the balloon was performed using a standard Fogarty arterial embolectomy catheter (no irrigating lumen). An alternative method may be to deploy an irrigating Fogarty arterial embolectomy catheter passed over a guidewire that had been negotiated across the iliac segment under angiographic control. We have not tried using this technique with other designs of embolectomy catheters (e.g. adherent clot Fogarty embolectomy catheters).

In conclusion, we would commend this technique as a relatively safe alternative for traversing difficult iliac segments in the event of guidewire/catheter-directed technique and imaging control not being available.

References

- 1 KINNEY EV, FOGARTY TJ, NEWMAN CE. Catheter skills. In: *Peripheral Endovascular Interventions*. White RA & Fogarty TJ eds New York: Springer Verlag, 1999, Chapter 16, pp. 247–258.
- 2 WHATLING PJ, GIBSON M, TORRIE EP, MAGEE TR, GALLAND RB. Iliac occlusions: stenting or crossover grafting? An examination of patency and cost. *Eur J Vasc Endovas Surg* 2000; **20**: 36–40.

Accepted 22 January 2002