Royal College of Surgeons of England
ADVANCING SURGICAL CARE

Bruce Campbell, Series Editor

Technical Section [TECHNICAL NOTES AND TIPS

Superficial femoral artery catheterisation with two parallel guidewires after femoris profunda artery cannulation in antegrade percutaneous femoral access

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doi 10.1308/rcsann.2021.0117

BACKGROUND

During antegrade puncture of the common femoral artery (CFA) the guidewire can head towards the profunda femoris artery (PFA). This is more likely when the angle of the needle puncture is steep or when a puncture is made close to the femoral bifurcation, in the context of a high bifurcation or obesity.[1,2] We report our approach using two parallel guidewires in the same sheath to gain access to the superficial femoral artery (SFA) when this occurs.

TECHNIQUE

Once the guidewire has entered the PFA, a conventional 6-Fr sheath (12cm long; ULTIMUM™ EV INTRODUCER, Abbott, Plymouth, MN, USA) is delivered into its lumen. A 0.035-inch hydrophilic guidewire (150cm long; HydroSteer™, Abbott) is delivered through the sheath. A hydrophilic-coated diagnostic 4-Fr catheter (vertebral 135 degrees; Tempo-Aqua, Cordis, Miami Lake, FL, USA) is positioned over the wire into the PFA. Under fluoroscopy or ultrasound guidance, the sheath is pulled back gradually until its tip is positioned in the CFA lumen. The intraluminal tip position is assessed by brief flushing of contrast or by ultrasound. The catheter–guidewire system is left in place (Figure 1a). A second, identical hydrophilic guidewire angled tip is introduced parallel to the catheter in the sheath (Figure 1b–d). It is then possible to gain access to the SFA lumen, with the aid of ultrasound guidance. The catheter–guidewire system is then removed, and the sheath advanced into the SFA.

DISCUSSION

This technique enables rapid cannulation of SFA using common devices.[3,4] No modifications of the devices are required,[5] preserving their integrity, function and safety. Ultrasound guidance contributes to the reduction in fluoroscopic time.

AUTHOR CONTRIBUTIONS

Conception and design: G.Z. Technique proposed by V.G. and performed routinely by G.Z. and LT Data collection: L.T. Writing the article: L.T. Critical revision of the article: L.T. Overall responsibility: V.G.

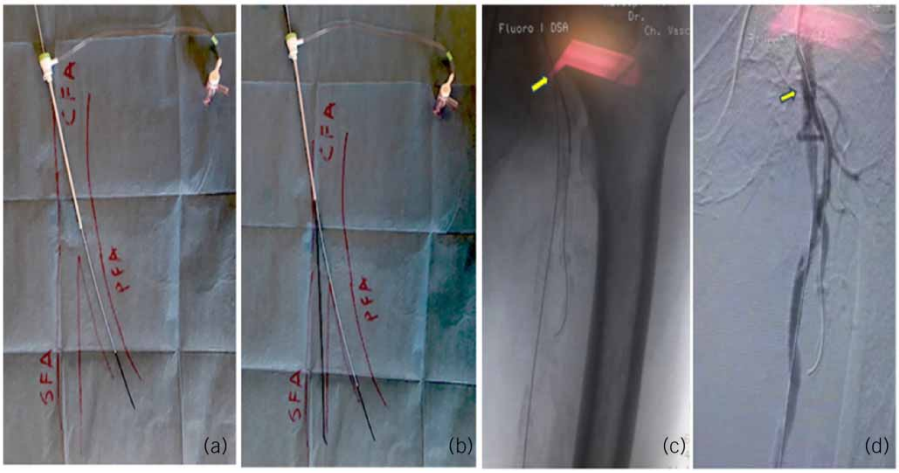

Figure 1 (a) Schematic combination of a 6-Fr sheath with a 4-Fr diagnostic catheter-guidewire positioned in the profunda femoris. (b) Introduction of the second 0.035-inch guidewire in parallel into the same sheath. (c) Retraction of the 6-Fr sheath over the bifurcation, arrow. (d) Puncture site, arrow. SFA: superficial femoral artery; PFA: profunda femoris artery; CFA: common femoral artery.

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Use of a smartphone as a potential aid in assessing tumour margins of basal cell carcinoma

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doi 10.1308/rcsann.2021.0134

BACKGROUND

Incomplete surgical excision of basal cell carcinoma (BCC) is a frustration for surgeons treating skin cancer. When this happens, further treatment or prolonged follow-up, with a higher risk of recurrence, are treatment options. Re-excision is time-consuming, causes discomfort to the patient, increases the cost of treatment and requires further sacrifice of possible healthy skin. The incidence of incomplete excised BCC varies between 4.5% and 16.6% in large series.[1,2] This reflects the difficulty of tumour margin assessment and the unpredictable extent of subclinical tumour spread beyond the macroscopic tumour margins visible to the naked eye. Different authors report use of loupe magnification improves tumour margin assessment and can aid in lowering the incidence of incomplete excisions.[3–5]

TECHNIQUE

We routinely use a simple and widely available tool implementing technological developments to aid the naked eye in determining tumour margins of BCC prior to resection: the camera present in our smartphone (iPhone X, Apple). An example is shown in Figures 1 and 2.

DISCUSSION

Smartphone technology has improved tremendously over the years, resulting in cameras capable of producing excellent photos. In Apple's recent models, digital zoom up to ×10 is available. Also, to increase accessibility of the Apple devices, a magnifier tool was added in iOS 10. The magnifier can be enabled in Settings > General > Accessibility > Magnifier, and once enabled can be opened by triple clicking the home button or the side button on the iPhone X. Since iOS 14, the magnifier can also be found in the App library. It has some additional options to improve visibility; it can activate the flashlight, adjust brightness/contrast and freeze the image.

With the aid of smartphone magnification, skin alterations such as telangiectasia and small surface erosions invisible to the naked eye might be visualised and thus it might allow for more precise appraisal of tumour margins and reduce the incidence of incomplete excisions of BCC.

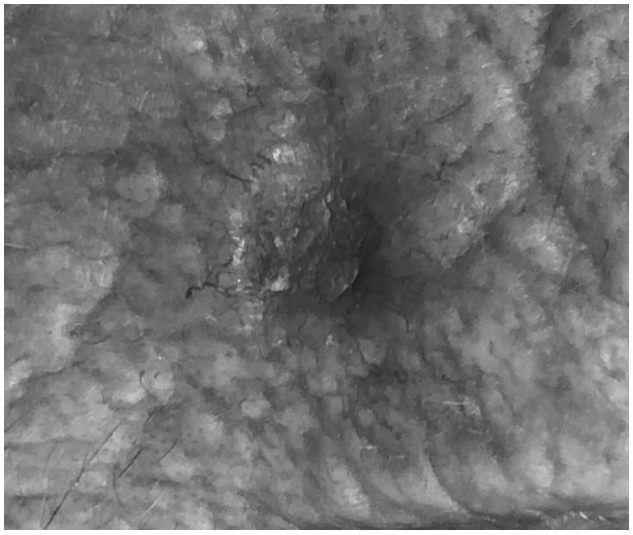

Figure 1 Infiltrative basal cell carcinoma of the upper lip; very detailed digital zoom with the iPhone magnifier application. The borders of the lesion can be drawn with aid of this magnification.

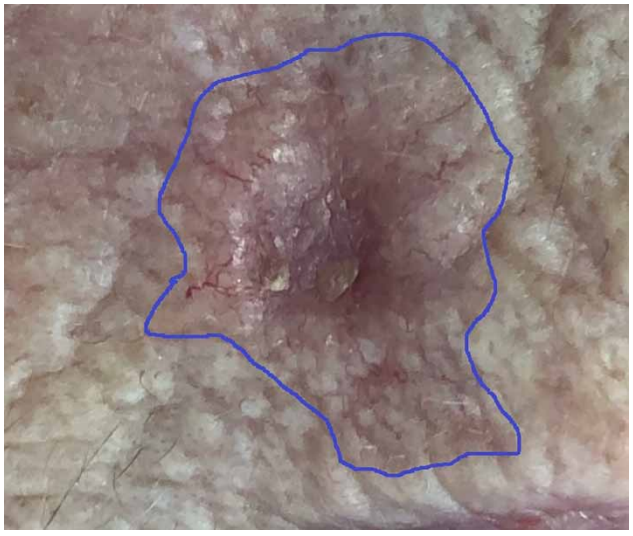

Figure 2 Skin irregularities and telangiectasia beyond the obvious border of the lesion, which were very difficult to see with the naked eye