Is it a bird? Is it a plane? No, it's radial man!

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We continue our series in which Consultant Interventionist Dr Michael Norell takes a sideways look at life in the cath lab…and beyond. In this column, he considers radial access.

Yes, it's true. After more than 20 years of accessing the arterial circulation almost consistently from the femoral approach, I have given in to the undeniable logic of the trans-radial enthusiasts.

Was I among the last of a dwindling minority of dinosaurs, plodding on with traditional practice despite a changing – if not hostile – environment? Technology supporting the radial approach has undoubtedly advanced, and at the same time the interventional landscape has become less attractive to the use of a much larger vessel in which haemostatic control can never be guaranteed.

I was wondering how this Damascene change in my practice came about?

History

I trained in invasive cardiology at a centre in London renowned for the volume of angiographic activity that it generated. The default approach was via the right brachial artery, exposed by a cut down and with the arteriotomy repaired directly using a continuous 6-0 Proline suture.

The tool of the trade was a somewhat stiff, 8-French, Sones catheter, the multi-potentiality of which was matched only by the respect with which it was wielded. Its shape meant that both coronaries – as well as grafts – could be engaged. The combination of an end- and side-holes allowed contrast injection to incur less streaming effect, and aorto- and left ventricular angiography could be achieved with uniform chamber opacification. The result was not only diagnostic, but also aesthetically pleasing, an important quality given that our mentor – one of the leading proponents of the technique – never ceased to remind us that we were, after all, in the '*picture business*'.

Of course, its use courted some problems; intra-mural injection of contrast could sometimes produce ventriculograms akin to a Christmas tree, and deep engagement – particularly in the right coronary ostium – might sometimes result in an impressive dissection.

I am sure that, as with most adverse events, this related more to the experience of the operator than to the implement itself. I recall that when I approached my boss (perhaps on more than one occasion) to announce that I may have had a 'slight mishap', he was always sympathetic and supportive. He would push his glasses up onto his forehead and sigh, "Well, if you haven't ever done that then you haven't done enough".

He had a unique knack of making you feel a lot better about such unfortunate occurrences. As an afterthought, and just as I turned away to go to the ward to check that my erstwhile patient was not in the throes of acute inferior infarction, I asked him the obvious question. Had he ever produced similar complications?

Readers who recognise the individual I describe will know what I mean when I say that he smiled in a way that only *he* did and replied, "No".

Changing routine

After clocking up perhaps a couple of thousand brachial procedures, I moved into other appointments in which the femoral version was routine. Many cases were followed by yours truly pressing on the femoral artery in order to achieve sound haemostasis – an experience that current trainees have perhaps lacked. It not only ensured puncture site control but also provided a unique and uninterrupted opportunity to get to know the patient given that you were essentially 'connected' to him biologically for at least five to 10 minutes.

There is no doubt that this method was far easier, both to do and to teach, and had the stent not arrived, I suspect it would have been unassailable. But the intense regimen of antithrombotic medication that these devices demanded exposed the Achilles heel of the groin – if such a metaphor is allowable.

Thanks to pioneers in Toulouse and the Netherlands, attention now focused on the wrist as the preferred site of access as it invited far fewer bleeding complications.

Learning new tricks

I spent a very pleasant couple of days in Amsterdam at one of the many radial courses held there under the guidance of Ferdinand Kiememeij and his team. On one occasion he could not undertake the planned procedure on a case transferred into his hospital as the patient turned out to have an artificial right arm!

I was enthused with the notion of this approach and actually produced a short (and invited) piece for this very journal describing my personal experience with its learning curve. It is curious that I then chose not to persist with the technique. As a devotee of the 'anything for an easy life' school of thought, I suspect that I found it all too easy to return to the far more predictable femoral version.

Various closure devices were then coming to the fore and, while these did not make up for poor puncture technique, I was fairly happy to continue with this traditional method, not least reassured that there was a substantial body of colleagues in the same boat as me. At least … there was.

Isolation

I was at a meeting earlier this year as a panel member in a discussion about primary angioplasty, and as I expressed a view about the arterial approach for a particular case, I was acutely aware of an uneasy sense of isolation. This unfamiliar sensation was compounded by the fact that, back home, the majority of my colleagues had made the transition to become dyed-in-the-wool radial fans.

I envisaged that my role as senior chap, authoritative factotum and general wise man, was rapidly eroding; drastic action was called for in order to retain any degree of credibility.

And so I hit upon a solution which in one blow would, not only put me back in the bosom of my peers, but also give me a slight march on them (as if): I took on the radial approach but using my old friend, the Sones catheter.

The 5-French version is far more user-friendly than the spear with which I had trained all those years ago, and the range of tip lengths suits most anatomical variants. The advantage of not needing to change catheters is plain for all to see and the shorter time spent as a result helps to make up for the excess that I (at least) require in puncturing the artery in the first place.

In my view there is little science to this. The location of the radial pulse and its prominence appears to bear no relation to the ease with which it is stuck. And while if you miss a femoral artery first time your chance of hitting it increases with each subsequent attempt, the reverse is true at the wrist; the radial artery senses your dwindling confidence and chooses to get smaller just to make it even more difficult.

Patience is a virtue

However, I have as a result uncovered a quality with which I was not aware I had been endowed, and which had presumably lain dormant in my unconscious for years. Namely, patience.

If I utilise this virtue and persist, refusing to default to the groin without a very good reason, my doggedness eventually pays off, and the feeling of satisfaction is immense. This, together with the absence of any concern around potential bleeding complications, results in a tangible sense that when the case is over, it *is* over.

As a footnote, readers should not be concerned that I intend to re-ignite (*sic*) my career by travelling the country – and beyond – proposing the advantages of this method; there are enough colleagues with far more expertise, enthusiasm and experience to adopt such a venture, bringing to bear their customary missionary zeal.

But, having said that…