Double Wire, a Novel Technique for the Insertion of Hemodialysis Catheter

Mohamed Elmaadawy, MD
Vascular Surgery Unit
Cairo University
Disclosure

Mohamed I. Elmaadawy, MD

I have the following potential conflicts of interest to report:

- Consulting
- Employment in industry
- Stockholder of a healthcare company
- Owner of a healthcare company
- Other(s)

※ I do not have any potential conflict of interest
1. By using the modified Seldinger technique, wire is inserted through the needle.

2. Skin incision of 1.5 to 2 cm is made at the vein puncture site was done.

3. A 6 F sheath is then advanced over the wire. Two 0.035 floppy wires (Terumo standard wire, Terumo Medical Inc., or Glide wire, Boston Scientific Inc.,) were inserted into the sheath side by side.
4. Both wires were directed to the upper part of the inferior vena cava (IVC).

5. Catheter is tunneled by its appropriate tunneler. Sheath is removed. A 12 F dilator is advanced over each wire sequentially. Bleeding from the vein around the guide wires was controlled by digital pressure over a piece of gauze.
6. Each wire is threaded into the catheter. One wire is inserted in each lumen.

7. In doing so, part of the catheter next to the vein puncture site with both wires inside are making an arc (arc of insertion).

8. Catheter and both wires inside are advanced into the vein by pushing on the part of the arc close to the vein puncture site.
9. Wire is removed from the venous side first. And contrast is injected to check the final position of the catheter.

10. Finally the wire is remove from the arterial side and another bolus of contrast is injected through this side if necessary.
Percutaneous insertion of tunneled hemodialysis catheter is run in two ways:
- Peel off sheath &
- Over the wire technique (single wire)

The former is more commonly employed, though it has many disadvantages, all are related to the use of peel off sheath
what will be a plight if you find:

- The peel off sheath cannot be advanced over the wire
- Catheter cannot advance inside the peel off sheath
- Catheter exits the distal end and veers upward

The big ordeal happens when the rigid sheath perforates the vein.
Disadvantages of over a **single** wire technique:

1. It requires special catheter design
2. Blood loss
3. Requires bigger skin incision at the vein puncture site
4. The wires bend and may break at the outer coat
CONCLUSION

• The double wire technique is simple, safe, easy to do and to reproduce

• In addition, to be the primary technique for debut catheter insertion and catheter exchange, it is the only bail-out technique when the peel off sheath fails
THANK YOU
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