

CLAIMS

1. A vascular access device to passively reposition a catheter tip within a vasculature comprising:

a catheter comprising a proximal end, a tip, and a length of tubing therebetween; and

a guidewire extending along the length of tubing, the guidewire comprising a bent portion with a pre-formed shape, a proximal portion extending from a proximal end of the bent portion in a first direction, and a tip portion extending from a distal end of the bent portion in a second direction substantially opposite the first direction,

wherein at least a portion of the length of tubing substantially conforms to a shape of the guidewire when within the vasculature such that the tip of the catheter avoids an obstruction therein.
2. The vascular access device of claim 1, wherein the guidewire is coupled to at least a portion of a surface of the catheter.
3. The vascular access device of claim 1, wherein the guidewire is embedded into at least a portion of the catheter.
4. The vascular access device of claim 1, wherein the catheter comprises a lumen having a distal opening and providing a first fluid path, and at least one fenestration providing an additional fluid path.
5. The vascular access device of claim 1, wherein the guidewire comprises one of nitinol and scandium trifluoride (ScF₃).
6. The vascular access device of claim 1, wherein the guidewire comprises a temperature-activated material.

7. The vascular access device of claim 1, wherein the guidewire is oriented along the length of tubing such that the tip of the catheter is directed at least one of upwards, downwards, and laterally with respect to a horizontal axis of the vasculature.

8. The vascular access device of claim 1, further comprising:
a needle configured to extend through the length of tubing, the resilient bent portion and the tip of the catheter conforming to the needle in response to the needle extending therethrough, wherein in response to the needle being withdrawn in a proximal direction, the bent portion returns to the pre-formed shape such that the tip of the catheter misaligns with the length of the tubing within the vasculature.

9. The vascular access device of claim 8, wherein the bent portion comprises an asymmetrical cross-section.

10. The vascular access device of claim 8, wherein the bent portion comprises an extended length.

11. The vascular access device of claim 8, wherein the bent portion comprises at least one joint.

12. The vascular access device of claim 8, wherein the guidewire is coupled to at least a portion of the surface of the catheter.

13. The vascular access device of claim 8, wherein the guidewire is embedded into at least a portion of a wall of the catheter.

14. The vascular access device of claim 8, wherein the bent portion directs the tip of the catheter upward within the vasculature relative to a horizontal axis thereof.

15. The vascular access device of claim 8, wherein the bent portion directs the tip of the catheter downward within the vasculature relative to a horizontal axis thereof.

16. The vascular access device of claim 8, wherein the bent portion directs the tip of the catheter laterally within the vasculature relative to a horizontal axis thereof.