Claims

1. A vascular access device comprising:

a catheter including a flexured portion; and

a catheter adapter having a distal end, a proximal end, an overall length extending from the distal end to the proximal end, an internal cavity, an upper portion, a lower portion and a distal tip having a catheter adapter tip opening having a circumference and through which the catheter extends, wherein the overall length is substantially equivalent at the upper portion and the lower portion, and the catheter adapter tip opening having an internal curvature defining a tapered region in the lower portion, the upper portion of the catheter adapter tip opening does not include an internal curvature extending from the distal tip, wherein the tapered region supports the flexured portion of the catheter to provide an angle of insertion for the catheter without restricting a flow through the catheter, the tapered region being less than the overall length.

2. The vascular access device of claim 1, wherein the internal curvature of the lower portion of the catheter adapter tip opening defines a chamfer.

3. The vascular access device of claim 1, wherein the internal curvature of the lower portion of the catheter adapter tip opening is rounded or trumpet shaped.

4. The vascular access device of claim 1, wherein the lower portion of the catheter adapter tip opening defines a radius at the distal tip that incrementally decreases moving away from the distal tip.

5. The vascular access device of claim 1, wherein the angle of insertion is within a range of about 1° to about 60°.

6. The vascular access device of claim 1, wherein a radius of the upper portion is asymmetrical in relation to the radius of the lower portion.

7. The vascular access device of claim 1, wherein the upper portion of the catheter adapter is oriented tangentially to the catheter.

8. The vascular access device of claim 1, wherein the internal curvature in the lower portion of the catheter adapter extends across a portion of a circumference of catheter adapter tip opening and defines an arc forming an angle in a range of 90° to 360°.

9. The vascular access device of claim 1 further comprising an introducer needle in the internal cavity, the introducer needle having a distal end a proximal end and a needle hub connected to the proximal end of the introducer needle.

10. The vascular access device of claim 9, further comprising an extension tube extending from the catheter adapter and in fluid communication with the internal cavity of the catheter adapter.

11. The vascular access device of claim 1, further comprising a wing element extending radially outward from the catheter adapter.

12. The vascular access device of claim 1, wherein at least a portion of the catheter adapter is made from a first material and at least a portion of the distal tip is made from a second material that is more flexible than the first material.

13. The vascular access device of claim 1, wherein the distal tip includes a flexible, kink resistant extension extending from the catheter adapter tip opening to provide support for the catheter.

14. The vascular access device of claim 10, wherein the tapered region provides conical relief to the catheter.

15. The vascular access device of claim 14, wherein the needle further includes a bevel on the distal tip and the bevel of the needle is oriented in an asymmetrical orientation in relation to the conical relief.

16. An apparatus for preventing a restricted flow within a catheter comprising:

a catheter adapter having a distal end, a proximal end, an overall length extending from the distal end to the proximal end, an internal cavity, an upper portion, a lower portion and a distal tip having a catheter adapter tip opening through which a catheter including a flexured portion extends, wherein the overall length is substantially equivalent at the upper portion and the lower portion, the upper portion is absent a catheter adapter tip opening having an internal curvature, the lower portion of the adapter has a curved surface defining a tapered region to support the flexured portion of the catheter at a desired angle of insertion into a patient and to prevent kinking of the catheter, the upper portion of the adapter in contact with the catheter having a substantially straight surface and constant thickness to maintain rigidity of the catheter during insertion of the catheter into a patient.

17. The apparatus of claim 16, wherein the lower portion of the catheter adapter tip opening defines in cross section a semicircular arc.

18. The apparatus of claim 17, wherein the lower portion of the catheter adapter tip opening defines in cross section a partial ellipse.

19. The apparatus of claim 18, wherein the lower portion of the catheter adapter tip opening forms an angle in a range of 0° to 270.