

CLAIMS

1. A method of introducing a needle into a vein of a patient comprising the steps of:

providing a needle having a body with a proximal end and a distal end, a first longitudinal side surface and a second longitudinal side surface opposite said first longitudinal side surface, said distal end having a bevel surface extending between said first longitudinal side surface and second longitudinal side surface to define a distal tip at said second longitudinal side surface;

orienting said needle at a first angle where said bevel surface faces an outer surface of the vein and the distal tip contacts an outer surface of the vein at an angle to pierce the vein;

applying a substantially linear insertion force to said needle to pierce the vein, and orienting the needle at a second inclined angle relative to the longitudinal dimension of the vein and introducing said needle into a lumen of the vein with said bevel surface facing an inner surface of said vein in a location opposite an insertion site by said needle.

2. The method of claim 1, wherein said second side surface of said needle has a notch defining a blood flashback passage between said needle and said catheter, and where said notch is oriented on a side opposite said bevel surface.

3. The method of claim 1, further comprising orienting said bevel surface with respect to a longitudinal dimension of the vein to promote angular movement from said first position to said second position during insertion.

4. The method of claim 1, wherein said needle has curved distal end portion extending between an outer peripheral surface of the needle and cutting edges formed by said bevel, and where said cutting edges are spaced radially inward with respect to the outer peripheral surface of the needle.

5. The method of claim 4, further comprising inserting said distal tip into a lumen of the vein in a position spaced from and inner wall surface of the vein opposite the insertion site and pointing in a direction substantially parallel to the longitudinal dimension of the vein.

6. A method of introducing a catheter into a vein of a patient comprising the steps of:
positioning a catheter and needle at a first inclined angle with respect to a longitudinal dimension of the vein, said needle having a body with proximal end, a distal end, a first longitudinal side surface and a second longitudinal side surface opposite said first side surface, said distal end having a first bevel surface extending between said first longitudinal side surface and said second longitudinal side surface to define a distal tip at said second longitudinal side surface facing outwardly from said second side surface and said first bevel surface on said first longitudinal side, said first longitudinal side having a notch defining a blood flashback passage between a lumen of said needle and said catheter, and where said notch is oriented opposite said first bevel surface, a guide wire extending through said needle;
piercing the vein at said first inclined angle where said distal tip penetrates a surface of the vein at said first inclined angle where said bevel surface faces the vein; and
inserting said needle and catheter into a lumen of the vein at an second angle where said bevel surface faces an inner wall surface of the vein at a location opposite a point of penetration of said needle and catheter.

7. The method of claim 6, further comprising orienting said bevel surface with respect to said longitudinal dimension of the vein at said inclined angle to promote angular movement from said first orientation to said second orientation during said insertion step.

8. The method of claim 6, further comprising orienting said bevel surface toward an inner surface of said opposing wall surface of the vein at a location opposite the point of entry of said needle into the vein.
9. The method of claim 6, further comprising orienting said distal tip at an incline to space said bevel surface from said inner surface of said opposing wall of said vein during insertion into the vein.
10. The method of claim 6, further comprising advancing said catheter with respect to said needle into the vein.
11. The method of claim 6, wherein said needle has a second reverse bevel and a third reverse bevel converging with said first bevel surface to form cutting edges between said first bevel, said second reverse bevel, and third reverse bevel, said second reverse bevel and third reverse bevel converging to form a cutting edge extending from said tip toward an outer surface of said needle in a direction opposite said first bevel surface.
12. The method of claim 6, where said needle body has a curved distal end portion extending from an outer peripheral surface of said needle to said cutting edge between the second reverse bevel and the third reverse bevel, and where said cutting edge is space radially inward from said peripheral outer edge, said method comprising inserting said needle into the patient where the curved distal end portion contacts a surface of the vein and promotes an inward movement of said needle into the vein.
13. A catheter assembly comprising:
 - a needle having a needle body having a longitudinal dimension with a proximal end and a distal end, a first longitudinal side surface, a second longitudinal side surface opposite said first longitudinal side surface, and a bevel surface extending between said first

longitudinal side surface and said second longitudinal side surface to define a distal tip at said second longitudinal side surface, said bevel surface facing outwardly with respect to said first longitudinal side surface of said needle, and said second longitudinal side surface has a notch defining a blood flashback passage opposite said bevel surface;

a catheter positioned on said needle, where said needle is removable from said catheter; and

a catheter hub receiving said catheter, said catheter hub having a first longitudinal side surface configured for manipulating the catheter assembly by a user and a second longitudinal side surface configured for facing the skin of a patient, and where said bevel surface of said needle faces outwardly with respect to second longitudinal side surface of said catheter hub.

14. The catheter assembly of claim 13, wherein said catheter is an IV catheter, and where said needle body has a blood flashback passage in communication with a blood control member, and a guide wire extending through said needle.

15. The catheter assembly of claim 14, wherein said needle body has a blood flashback passage between said needle body and said catheter.

16. The catheter assembly of claim 15, wherein said blood flashback passage is a notch on an outer surface of said needle body in communication with a lumen in said needle body, and where said catheter hub is connected to said blood control member.

17. The catheter assembly of claim 14, wherein said needle body includes a lumen forming said blood flashback passage and where said catheter hub is coupled to a needle hub connected to said blood control member for receiving blood from said needle.