Claims

1. An introducer needle for the catheter and introducer needle assembly, comprising a notch and a crimped bump.

2. The introducer needle for the catheter and introducer needle assembly in accordance with claim 1, wherein the notch is closer to the introducer needle tip than the crimped bump.

3. The introducer needle for the catheter and introducer needle assembly in accordance with claim 1, wherein the crimped bump is formed by compressing the introducer needle in the Y-axis so that the compressed material flows in the X-axis, making a crimped bump in the direction of X- axis, and the inner lumen of the introducer needle being flattened by the compressing.

4. The introducer needle for the catheter and introducer needle assembly in accordance with claim 1, wherein the cross section of the crimped bump is a dumb-bell shape.

5. The introducer needle for the catheter and introducer needle assembly in accordance with claim 4, wherein the dumb-bell shaped bump is manufactured by pinching or crimping the introducer needle at 2 points, and the axis of the 2 points cross the axis of the introducer needle.

6. The introducer needle for the catheter and introducer needle assembly in accordance with claim 1, wherein the cross section of the crimped bump is an elliptical shape.

7. The introducer needle for the catheter and introducer needle assembly in accordance with claim 6, wherein the elliptical shaped bump is manufactured by crimping the introducer needle by two flat surfaces.

Claims

1. An introducer needle for a catheter and introducer needle assembly, comprising a notch, a crimped bump, and a sharpened distal tip, wherein the crimped bump is formed by compressing the introducer needle at two points in the Y-axis so that the compressed material flows in the X-axis forming a top and bottom flattened surface, making a crimped bump in the direction of the X-axis, and the inner lumen of the introducer needle being flattened by the compressing, wherein the notch and crimped bump are positioned on the introducer needle such that the notch, the top flattened surface, and the sharpened distal tip all face upward when the bottom flattened surface faces downward.

2. The introducer needle for the catheter and introducer needle assembly in accordance with claim 1, wherein the notch is closer to the introducer needle tip than the crimped bump, and an uncrimped portion of the needle exists between the notch and the crimped bump.

3. The introducer needle for the catheter and introducer needle assembly in accordance with claim 1, wherein the cross section of the crimped bump is a dumb-bell shape.

4. The introducer needle for the catheter and introducer needle assembly in accordance with claim 3, wherein the dumb-bell shaped bump is manufactured by pinching or crimping the introducer needle at 2 points, and the axis of the 2 points cross the axis of the introducer needle.

5. The introducer needle for the catheter and introducer needle assembly in accordance with claim 1 or claim 2, wherein the cross section of the crimped bump is an elliptical shape.

6. A method for forming, on a notched introducer needle having a sharpened distal tip for a catheter and introducer needle assembly, a feature for preventing withdrawal of the introducer needle from a needle

shield or spring clip, the method comprising:

forming an elliptical crimped bump on the needle by compressing the introducer needle in the Y-axis so that the compressed material flows in the X-axis, making a crimped bump in the direction of the X-axis, wherein the inner lumen of the introducer needle is flattened by the compressing, and wherein the bump is configured to have an elliptical shape by crimping the introducer needle between two flat surfaces thereby forming a top flattened surface and a bottom flattened surface on the introducer needle, wherein the notch and crimped bump are positioned on the introducer needle such that the notch, the top flattened surface, and the sharpened distal tip all face upward when the bottom flattened surface faces downward.

7. An introducer needle, substantially as herein described with reference to the accompanying drawings.

8. A method, substantially as herein described with reference to the accompanying drawings.