

CLAIMS

1. A catheter assembly for insertion into vasculature of a patient, comprising,
an over-the-needle catheter, comprising:
 - a first annular stepped surface having a first distal surface with a first uniform inner diameter, a first proximal surface with a second uniform inner diameter greater than the first uniform inner diameter, and a first shoulder proximate the first proximal surface and disposed between the first distal surface and the first proximal surface and perpendicular to a longitudinal axis of the catheter assembly; and
 - an elongate tubular portion proximate the first annular stepped surface and having the second uniform inner diameter of the first proximal surface, wherein the first shoulder, the first proximal surface, and the first distal surface are constructed of a first material with a harder durometer than a second material of the tubular portion, the over-the-needle catheter having a catheter lumen extending therethrough, wherein the first annular stepped surface is disposed within the catheter lumen; and
 - an introducer needle comprising a second annular stepped surface forming a distal end of a cylindrical needle feature, wherein the second annular stepped surface comprises a second distal surface, a second proximal surface, and a second shoulder disposed proximate the second proximal surface, between the second distal surface and the second proximal surface, and perpendicular to the longitudinal axis of the catheter assembly, wherein when the introducer needle is in an insertion position, the second distal surface contacts the first material of the first distal surface, the second proximal surface contacts the first material of the first proximal surface and the second material of the tubular portion, and the second shoulder contacts the first material of the first shoulder such that proximal movement of the over-the-needle catheter relative to the introducer needle is inhibited.
2. The catheter assembly of claim 1, wherein an outer surface of the first distal surface, the first shoulder, and the first proximal surface is tapered.
3. The catheter assembly of claim 1, wherein the first material comprises a first plastic, wherein the second material comprises a second plastic.
4. The catheter assembly of claim 1, wherein the second proximal surface comprises a groove, wherein a distal end of the groove is spaced apart from the second shoulder, wherein a proximal

end of the groove is disposed distal to a proximal end of the cylindrical needle feature, wherein the distal end of the groove contacts the second material.

5. The catheter assembly of claim 1, wherein the second proximal surface comprises a groove, wherein the groove extends through the second shoulder, through the second distal surface, and through a distal tip of the introducer needle.

6. The catheter assembly of claim 4, wherein the groove comprises a notch providing access to a needle lumen.

7. The catheter assembly of claim 1, wherein the introducer needle further comprises a notch disposed proximal to the cylindrical needle feature, the notch providing access to a needle lumen.

8. The catheter assembly of claim 1, wherein the second proximal surface and the cylindrical needle feature extend through a proximal end of the over-the-needle catheter when the introducer needle is in the insertion position with a sharp distal tip of the introducer needle disposed distal to the over-the-needle catheter.

9. The catheter assembly of claim 1, wherein the introducer needle further comprises a wall defining a needle lumen, wherein the second distal surface, the second shoulder, the second proximal surface, and the wall of the introducer needle are monolithically formed as a single unit.

10. The catheter assembly of claim 1, wherein the introducer needle further comprises a wall defining a needle lumen, wherein the cylindrical needle feature is bonded to the wall of the introducer needle to form the second shoulder and the second proximal surface.

11. The catheter system of claim 1, wherein the second material extends proximal to the cylindrical needle feature.

12. The catheter system of claim 4, further comprising a needle hub, wherein the cylindrical needle feature extends to the needle hub.