

CLAIMS

1. A compliant catheter adapter comprising:

a catheter adapter body formed of a compliant material, the catheter adapter body comprising:

a proximal end and a distal end, the catheter adapter body having a generally elongate shape formed about a longitudinal axis extending between the proximal end and the distal end of the catheter adapter body;

an inner chamber disposed within the catheter adapter body, the inner chamber having a generally elongate shape formed about the longitudinal axis extending between the proximal end and the distal end of the catheter adapter body;

a compression resistant septum comprising a distal end formed in the compliant material of the catheter adapter body, the compression resistant septum further comprising a proximal end, wherein the distal end of the compression resistant septum and the catheter adapter body are monolithically formed as a single unit and formed of the compliant material the compression resistant septum disposed toward the proximal end of the catheter adapter body; and

a lumen formed through the compression resistant septum, the lumen configured to receive an elongate object therein; and

a compression cap coupled to the proximal end of the compression resistant septum, the compression cap configured to impart a compression force to the compression resistant septum such that the lumen narrows and seals when the elongate object is removed from the lumen.

2. The compliant catheter adapter of claim 1, wherein the compression resistant septum forms a proximal end of the inner chamber.

3. The compliant catheter adapter of claim 1, wherein the compliant material comprises one of a thermoplastic elastomer material, a liquid silicone rubber material, and a polyisoprene material.

4. The compliant catheter adapter of claim 1, wherein the compression cap further comprises:

a proximal end having a first aperture configured to receive the elongate object there through;

a distal end having a second aperture configured to receive at least a portion of the catheter adapter body; and

a compression surface extending intermediate the proximal end and the distal end of the compression cap, the compression surface enclosing a hollow portion formed in the compression cap, the hollow portion configured to receive at least a portion of the compression resistant septum therein, and the compression surface configured to impart the compression force to the compression resistant septum such that the lumen narrows and seals when the elongate object is removed from the lumen.

5. The compliant catheter adapter of claim 1, further comprising:

an additional compression resistant septum that is positioned between the compression resistant septum and the compression cap, the compression cap being configured to impart a compression force to the additional compression resistant septum.

6. The compliant catheter adapter of claim 4, wherein the compression cap is integrally formed with the compression resistant septum.

7. The compliant catheter adapter of claim 6, wherein the compression cap is coupled to the compression resistant septum through an over-molding manufacturing process.

8. The compliant catheter adapter of claim 1, further comprising:

one or more stabilization members coupled to the catheter adapter body and configured to stabilize the catheter adapter body with respect to a patient;

a port in fluid communication with the inner chamber and configured to receive an extension tube, and the port comprising one of a Y-shaped port, a T-shaped port, a V-shaped port and a parallel-shaped port;

a catheter lumen coupled to and extending from the distal end of the catheter adapter body; and

a catheter wedge disposed toward the distal end of the catheter adapter body and configured to guide the elongate object into the catheter lumen as the elongate object is inserted through the catheter adapter body.

9. A compliant catheter adapter comprising:

a catheter adapter body formed of a compliant material, the catheter adapter body comprising:

a proximal end and a distal end, the catheter adapter body having a generally elongate shape formed about a longitudinal axis extending between the proximal end and the distal end of the catheter adapter body; and

an inner chamber disposed within the catheter adapter body, the inner chamber having a generally elongate shape formed about the longitudinal axis extending between the proximal end and the distal end of the catheter adapter body;

a first compression resistant septum positioned to abut at least a portion of the proximal end of the catheter adapter body, the first compression resistant septum comprising a first lumen formed there through when a compression cap is removed;

a second compression resistant septum positioned distal to the first compression resistant septum, the second compression resistant septum comprising a second lumen formed there through when the compression cap is removed;

a septum chamber formed between the first compression resistant septum and the second compression resistant septum, wherein the septum chamber is proximate the first lumen and the second lumen when the compression cap is removed; and

the compression cap, wherein the first compression resistant septum and a portion of the second compression resistant septum are disposed within the compression cap, wherein the compression cap imparts a compression force to the first compression resistant septum and the second compression resistant septum such that the first and second lumens narrow.

10. The compliant catheter adapter of claim 9, wherein the catheter adapter body is integrally formed from a compression set resistant elastomeric material comprising one of a thermoplastic elastomer material, a liquid silicone rubber material, and a polyisoprene material.

11. The compliant catheter adapter of claim 9, wherein the compression cap is positioned within at least a portion of the proximal end of the catheter adapter body, the compression cap further comprising:

a proximal end having a first aperture configured to receive the elongate object there through;

a distal end having a second aperture configured to receive at least a portion of the catheter adapter body; and

a compression surface extending intermediate the proximal end and the distal end of the compression cap, the compression surface enclosing a hollow portion formed in the compression cap, the hollow portion configured to receive the first compression resistant septum therein, and the compression surface configured to impart the compression force to

the first compression resistant septum such that the first lumen narrows and seals when the elongate object is removed from the first lumen.

12. The compliant catheter adapter of claim 9, further comprising:

one or more stabilization members coupled to the catheter adapter body and configured to stabilize the catheter adapter body with respect to a patient;

a port in fluid communication with the inner chamber and configured to receive an extension tube, and the port comprising one of a Y-shaped port, a T-shaped port, a V-shaped port, and a parallel-shaped port;

a catheter lumen coupled to and extending from the distal end of the catheter adapter body; and

a catheter wedge disposed toward the distal end of the catheter adapter body and configured to guide the elongate object into the catheter lumen as the elongate object is inserted through the catheter adapter body.

13. The compliant catheter adapter of claim 9, wherein a septum chamber is formed between the first compression resistant septum and the second compression resistant septum.

14. The compliant catheter adapter of claim 9, wherein the compression cap is a separate piece that is coupled to the first compression resistant septum and the catheter adapter body.

15. The compliant catheter adapter of claim 9, wherein the compression cap is coupled to the first compression resistant septum and the catheter adapter body through an over-molding manufacturing process.

16. The compliant catheter adapter of claim 9, further comprising:

a needle component including:

a needle hub;

a needle coupled to the needle hub and extending distally from the needle hub; and

a grip coupled to the needle hub;

17. The compliant catheter adapter of claim 16, wherein the grip coupled to the needle hub further comprises one of a paddle grip, a straight grip, and a ported grip.