

55 will be arranged to permit mounting of the sealing valve 20 in one turn or less.

It will be appreciated that a wide variety of quick-disconnect connectors, such as bayonet mounts, friction locks, and the like, could also be utilized as a union for detachably securing the sealing valve 20 (or other transition elements) to the handle. Use of the illustrated threaded connection is preferred, however, as such a threaded connection provides minimal radially outward forces within the aperture 28. This is particularly true when a square thread configuration is employed for connection.

In use, the catheter C will be passed through the introducer sheath 10, as illustrated generally in FIG. 1. Introducer sheath 10 will maintain the desired access channel to the body lumen, permitting the catheter C to be removed and reintroduced or exchanged with one or more subsequent devices or catheters. After a final catheter has been introduced, the introducer sheath 10 can be withdrawn outwardly from the transcutaneous penetration, and the handle tabs 36 and 38 can be broken apart, as illustrated in FIG. 2. The sheath tube 12 can then be pulled apart along the thin lines 30, leaving the sealing valve 20 in place on the catheter C. In this way, the catheter sheath 10 and handle 18 may be removed from the catheter C, leaving only the sealing valve 20, which by itself presents only minimum interference with the remaining procedures. The sheath will have been positioned in a conventional manner, typically using a stylet which is then withdrawn, to a desired target lumen or body cavity.

Although the foregoing invention has been described in detail for purposes of clarity of understanding, it will be obvious that certain modifications may be practiced within the scope of the appended claims.

What is claimed is:

1. A peel-away sheath comprising:

a sheath tube having a distal end, a proximal end, and a lumen therethrough, wherein said sheath is weakened along opposed axial lines to facilitate splitting into two halves;

a splittable handle attached to the proximal end of the sheath tube and having a circular aperture aligned with the tube lumen, said handle being weakened at locations aligned with the weakened axial lines in the sheath tube so that the handle may be split and drawn apart to split the sheath tube along said axial lines; and

a transition element removably attached to the splittable handle so that the element can be reattached after removal and having a circular axial passage aligned with the aperture in the handle and the lumen in the sheath, wherein the transition element is released from the handle when the handle is split apart.

2. A peel-away sheath as in claim 1, wherein the axial passage in the transition element has a diameter at least as large as that of the lumen in the sheath.

3. A peel-away sheath as in claim 1, wherein the transition element is selected from the group consisting of valves, and connectors.

4. A peel-away sheath as in claim 1, wherein the transition element includes a connector which is removably received in a counter bore in the splittable handle.

5. A peel-away sheath as in claim 4, wherein the connector and the counter bore have square mating threads.

6. A peel-away sheath comprising:

a sheath tube having a distal end, a proximal end, and a lumen therethrough, wherein said sheath is weakened along opposed axial lines to facilitate splitting into two halves;

a splittable handle attached to the proximal end of the sheath tube and having a circular aperture aligned with the tube lumen, said handle being weakened at locations aligned with the weakened axial lines in the sheath tube so that the handle may be split and drawn apart to split the sheath tube along said axial lines, wherein a threaded counter bore is formed in a proximal face of the handle co-axial with the aperture; and

a transition element having a threaded male connector which is received in the counter bore and compression seal which is disposed about the connector, wherein the threads on the transition element and counter bore are square threads and whereby the transition element may be connected to or sealed against the handle without causing significant radial forces in the handle aperture.

7. A peel-away sheath as in claim 6, wherein the transition element is selected from the group consisting of valves, and connectors.

8. A peel-away sheath as in claim 6, wherein the handle is weakened by channels which are stepped to conform to the aperture and counter bore.

9. A peel-away sheath comprising:

a sheath tube having a distal end, a proximal end, and a lumen therethrough, wherein said sheath is weakened along opposed axial lines to facilitate splitting into two halves; and

a splittable handle attached to the proximal end of the sheath tube and having a circular aperture aligned with the tube lumen, said handle being weakened at locations aligned with the weakened axial lines in the sheath tube so that the handle may be split and drawn apart to split the sheath tube along said axial lines wherein a counter bore having square threads is formed in a proximal face of the handle co-axial with the aperture

for detachably securing a transitional element, wherein said transitional element is released from the handle when the handle is split apart.

10. A peel-away sheath as in claim 9, wherein the square threads are arranged to receive the transition element in one turn or less.

11. An improved peel-away sheath of the type including a sheath tube and a splittable handle, wherein the handle may be split and drawn apart to tear the tube along opposed axial lines, wherein the improvement comprises a sealing valve attached to the handle by a union which permits mounting and demounting of the sealing valve without splitting of the handle and which releases the valve when the handle is split apart.

12. An improved peel-away sheath as in claim 11, wherein the union comprises a threaded connector on the sealing valve and a threaded counter bore in the handle.

13. An improved peel-away sheath as in claim 11, wherein the sealing valve defines an axial passage having a diameter at least as large as a lumen in the sheath tube.

14. A method for transcutaneously introducing a device through a sheath, said method comprising: positioning the sheath through tissue to a target lumen or body cavity;