A detachable hollow guide needle for piercing body portions, such as tissues, muscles, veins, to locate a flexible catheter tube in the selected body portion for withdrawing or introducing fluids relative thereto, and which includes a longitudinally split tube with the edges thereof normally adjacent one another to substantially enclose an included catheter tube, the tube having a sharpened end configuration for body insertion and wing members adjacent the opposite end diverging from adjacent edges of the split tube for pressure application to spread the tube edges a distance sufficient to remove the same from the body inserted catheter initially associated therewith.
DETACHABLE, HOLLOW GUIDE NEEDLE

Often guide needles have been retained on a catheter tube after venipuncture or other body portion insertion with the catheter positioned for withdrawing or introducing fluids. However, this has resulted in various nonuniform procedures for nurses and others aiding the attending physician, such as taping the guide needle to the patient or shielding the needle in various ways. These approaches have led to some hazards to the patient and more often to discomfort.

According to the present invention, there is provided a detachable guide needle which may be completely removed from the body inserted catheter and is an improvement over the guide needle arrangements shown in U.S. Pat. No. 3,559,978.

An object of the present invention is to provide an improved detachable guide needle for use with a flexible catheter tube to be inserted in a body portion and which guide needle may be withdrawn along the inserted catheter and completely removed therefrom by manipulation of included handle means.

The invention further provides an improved detachable guide needle which is stamped from a single blank and compactly configured to needle form, thus lending itself to mass production techniques.

To attain the above and other objects of the invention, there is provided a guide needle which is formed from a single blank and shaped to provide a longitudinally split tube with a sharpened end configuration for body insertion to locate the catheter tube therein, and with handle means at the opposite end thereof in the form of diverging wings which may be pressed together to open the tube along the longitudinal split and thus permit complete removal thereof from the inserted catheter tube with which it was initially associated.

In the accompanying drawing:

FIG. 1 is a perspective view showing the guide needle and associated catheter tube for body insertion;
FIG. 2 is a plan view of a stamped blank from which the guide needle is formed;
FIG. 3 is a rear end elevation of the guide needle of FIG. 1 showing a spacer clip in association with handle wings in the closed position of the tube; and
FIG. 4 is an end elevation, similar to FIG. 3, but the spacer clip removed and the handle wings pressed together to open the tube and permit removal thereof from the catheter tube.

With reference to the accompanying drawing, and particularly to FIG. 2, there is shown the blank which may be stamped from thin stainless steel stock of a thickness, for example, of 0.006 inches so that the sharpened guide needle will have the characteristics of a rigid but relatively thin, noncorrosive, and sanitary needle for use in puncturing tissues, muscles, veins of the human body. As illustrated, the blank includes an elongate body portion 10 with a pointed end 12 and oppositely extending wings 14, 14a adjacent the opposite end thereof. The wings may be formed with reinforcing ribs 16, 16a within the peripheral margins thereof, and these ribs may be formed during the blanking or stamping of the blank and during this operation, a central longitudinal slot or recess 18 may also be formed along substantially the length of the blank leaving primary hinge areas which may be scored for this purpose.

The blank of FIG. 2 is then shaped to the configuration of FIG. 1 with the elongate body portion forming the hollow guide needle 20 in the form of a split tube terminating at one end in the sharpened point configuration 22, and with the longitudinal edges 24, 24a of the tube in close adjacency as more clearly shown in FIG. 3. At the areas of juncture between the wings 14, 14a and the tube body, these wings are bent away from the edges 24, 24a to partially lap adjacent portions of the tube surfaces and to diverge from one another at the approximate included angle in normal relaxed position. In some instances, it may be desirable to provide a spacer clip (see FIG. 3) with a web portion 26 traversing the space between the free ends of the wings 14, 14a with U-shaped spring grip ends 28, 28a engaging the edges of the wings 14, 14a, respectively. This arrangement prevents inadvertent opening or closing movements of the wings.

The flexible catheter tube 30 which is included with the guide needle shown in FIG. 1 for body insertion at a selected location, such as for withdrawing or introducing fluids relative to tissue, muscle or a vein, and with the included catheter tube so located for that purpose, the guide needle is to be withdrawn and separated from the body inserted catheter tube. For this purpose, the spacer clip 26, if used, is withdrawn from the ends of the wings 14, 14a, and the nurse or other attendant withdraws the guide needle along the inserted catheter away from its previously inserted position and then squeezes together the finger or hand grip wings 14, 14a to a position approximating that of FIG. 4. This manipulation of the wings separates the edges 24, 24a of the needle tube a sufficient distance to permit the same to clear and be removed from the body inserted catheter tube 30. This separating movement of the edges 24, 24a is about the primary hinge lines and longitudinally along the slot 18 or its counterpart, such as a recess forming a weakened line therealong for this opening movement of the needle guide. The spacer clip 26 will prevent any accidental spreading of the needle guide and its pointed end 22 during body insertion or removal thereof from its point of body insertion if the catheter tube is telescoped freely in the guide needle. However, the tube body of the guide needle may be designed to glue a right spring grip to the included catheter tube to assist in locating the same in the selected body portion.

In this case, the wings may be lightly gripped with or without removal of the spacer clip to ever so slightly release any spring grip on the catheter tube and permit the guide needle to be withdrawn therealong from the body portion and thereafter further manipulated to spread the tube edges to the FIG. 4 position permitting complete separation of the guide needle from the body inserted catheter. With respect to the wings, these may be separately stamped along with the guide needle body and then separately attached thereto by welding or the like.

I claim:
1. A thin, one-piece hollow guide needle for insertion into a body portion and locating a flexible tube in the body portion for withdrawing or introducing fluid relative thereto; and comprising an elongate longitudinally split tubular member with the longitudinal edges thereof normally in close adjacency forming a substantially circumferentially closed tube for receiving therein a flexible catheter tube and having a sharpened end configuration for body insertion locating the catheter tube therein, and wings adjacent the opposite end of the tubular member which are folded from adjacent said longitudinal tube edges extending in a diverging position extending in a direction away from the side of said needle opposite said split to move the wings toward one another when the guide needle is withdrawn along the catheter tube from the body portion, said wings each being provided with reinforcing ribs to make them relatively rigid, said tubular member being provided with longitudinal recess means extending from adjacent the opposite ends thereof and disposed diametrically opposite to the adjacent longitudinal tube edges to concentrate hinged opening movement of the tubular member along the recess means, said recess tending to close up when said wings are moved toward one another, whereby the adjacent edges of the split tube will be separated sufficiently to permit complete removal of the guide needle from association with the body-inserted catheter tube.
2. A detachable hollow guide needle as claimed in claim 1, wherein the recess means comprises a slot which leaves end portions of the tubular member as the hinge areas during opening and closing thereof.
3. A detachable hollow guide needle as claimed in claim 2, wherein there is provided a spacer clip detachably engaging the wings to prevent inadvertent opening or closing movements thereof until removed from body insertion.

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