

the guide wire 18 can be forced through the O-rings without any undue pressure. However, the O-rings contact the guide wires sufficiently so that, at least when the guide wire is not moving relative to the O-rings, there is a substantially airtight seal between the O-rings and the guide wire. And since the O-rings also seal against the inner wall of the side port, the O-rings function as a sealing means preventing air from entering the needle bore 22 from outside the side port when the guide wire is at rest within the auxiliary bore. As should be readily apparent to those skilled in the art, it is not necessary that the O-rings provide an airtight seal when the guide wire 18 is moving therethrough.

The combined syringe and needle arrangement of the present invention is utilized in the following manner. With the guide wire 18 in the position shown in FIG. 2, the physician inserts the needle tip 20 into the area of the vein. As he does this, he attempts to aspirate by drawing back on the plunger 28. If the vein has not been found, a significant amount of force will be required to draw the plunger 28 back. This is, of course, also due to the fact that the O-rings 40 and 42 provide an airtight seal in the side port 34. Without this airtight seal, the plunger 28 could be drawn back easily. The physician knows that he has penetrated the vein when blood flows easily into the syringe as he aspirates.

Once the vein is found, the physician need not remove the syringe barrel or any other part of the assembly. Rather, all that is necessary is for him to begin to slide the guide wire 18 forwardly until it enters the vein. And since the guide wire is preassembled so that its forward end is adjacent the sharpened end 20 of the needle 12, the guide wire 18 can be very quickly moved into the vein before the needle can be dislodged from its proper position. With the guide wire in place, the needle can be withdrawn in the known manner.

The present invention may be embodied in other specific forms without departing from the spirit or essential attributes thereof and accordingly reference should be made to the appended claims rather than to the foregoing specification as indicating the scope of the invention.

I claim:

1. A combined syringe and needle for introducing a guide wire into a human blood vessel comprising:
 - a needle having a sharpened point at one end thereof and having a hollow bore extending from said sharpened end and through said needle to a hub end thereof;
 - a syringe including a syringe barrel and a plunger, said barrel having a forward end adapted to be secured to a hub member;
 - a hub member located between said syringe barrel and said needle and interconnecting said barrel and needle, said hub member including an axially extending bore therein in communication with said needle bore;
 - said hub member further including a side port means intermediate said needle and said barrel, said side port means including an auxiliary bore therein which opens to the outside of said hub member, extends through said side port means and which intersects with said axially extending bore at an acute angle;
 - an elongated guide wire, said guide wire extending from outside said hub member and into said auxiliary bore, and
 - sealing means preventing air from entering said needle bore from outside said side port means when said guide wire is at rest within said auxiliary bore, said sealing means being comprised of said side port means having an enlarged portion therein and an elastomeric O-ring held in place within said enlarged portion, said guide wire passing through the center of said O-ring and being movable relative to said O-ring.
2. The invention as claimed in claim 1 wherein said sealing means is comprised of a pair of O-rings.
3. The invention as claimed in claim 1 wherein said guide wire is a silicone-coated wire.
4. The invention as claimed in claim 1 wherein said guide wire is coated with Teflon.
5. The invention as claimed in claim 1 wherein said guide wire extends through said auxiliary bore and terminates within said needle bore.

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