

which projects slightly out of the distal end and must be centered in respect to the carina 10.

In accordance with the invention a positioning device in the form of an elastic measuring probe 3 is associated with the tracheal tube 1 and it has a distal end 3a which may be maneuvered out of the distal end 1a of the tracheal tube 1 after it is inserted into the trachea by manipulating the outer end of the elastic measuring probe 3. In addition, in accordance with a feature of the invention the distal end 3a of the probe is provided with a carina engageable stop element 6 which may be folded up for manipulation within the tracheal tube 1 as indicated in FIG. 1 or may be expanded as shown in FIG. 2 in order to become centered over the carina in the form of a roof-like crown.

In FIG. 1 and 2 the tracheal tube or jet tube 1 can be seen, in the free interior of which the elastically deflectable jet nozzle 2 is arranged. The positioning device contains the elastic measuring probe 3, having the anterior distal end 3a with a stop element 6 made up of two flexible sections or arms 4 and 5 which are spreadable to form a roof-like or inverted V-shaped crown.

The sections 4 and 5 of the stop element 6 are adjustable by an actuator or pull wire 7 guided in the measuring probe 3 between a folded position of small cross-section and a spread position spread in roof fashion.

There is arranged on the measuring probe a measuring sleeve 8 which carries a scale division 9 lying lengthwise. The measuring sleeve 8 is clamped onto the measuring probe 3 in such a way that a given position can be maintained.

FIG. 2 shows the unfolding of the sections 4 and 5 of the stop element 6 and their approximation for straddling the bifurcation center 10 (Carina Tracheae) of the trachea 11.

For positioning the jet nozzle 2 of the jet tube 1, the jet tube is first inserted into the trachea in an upper starting position. The measuring probe 3 is pushed forward with folded sections 4,5 of the stop element 6 through the jet tube 1 while pushing the jet nozzle 2 aside. As the outside diameter of the measuring sleeve 8 is smaller than the free inside diameter of the tracheal tube 1, it can be pushed into the interior thereof. Having passed through the tracheal tube, the sections of the stop element 6 are then unfolded by moving the pull wire 7 having unfolding projections, and the measuring probe is pushed forward until the stop element 6, spread out in roof crown fashion, straddles the carina 10. The measuring sleeve 8 is now inside the jet tube 1. The latter is then pushed forward in the direction of the bifurcation so far that the respective scale division of the measuring sleeve becomes visible at its distal edge. Thus the position of the jet nozzle 2 can be fixed in optimal manner since by observing the scale 9, the amount of projection of the stop element 6 from the bottom of the tube can be shown visually. The measuring probe 3 is then pulled out. If desired, the tube 1 can be provided with a scale continuing upwardly from the lower end which will show the amount of its insertion into the trachea.

While a specific embodiment of the invention has been shown and described in detail to illustrate the application of the principles of the invention, it will be understood that the invention may be embodied otherwise without departing from such principles.

What is claimed is:

1. A positioning device for use with a tracheal tube which is insertable into a person's trachea particularly

one of the type having a respirator gas jet discharge which must be positioned relative to a carina of the trachea, comprising an elastic measuring probe adapted to be inserted into the tracheal tube and having a distal end which is adapted to be pushed out of an end of the tracheal tube when the tracheal tube is in the trachea, a carina engaging stop end portion foldably mounted on said distal end of said probe and adapted to be brought into contact with the carina, said measuring probe having an opposite end adapted to extend out of the tube and the person's trachea, said opposite end including means for manipulating said stop end portion so that said distal end can be accurately engaged on the carina, said probe having a length greater than said tracheal tube and at least as great as the length of the trachea from the person's mouth to the carina, said carina engaging stop portion comprising a pair of foldable and unfoldable substantially straight arms, and said manipulating means comprising a connecting member engaged with said arms, extending through said elastic probe and being manipulatable from the outside of the probe at the opposite end thereof to unfold said foldable and unfoldable sections, said foldable arms forming an inverted V-shaped crown for engaging the carina when they are unfolded and being disposed back against said measuring probe when they are folded, and a measuring sleeve mounted on said measuring probe at said opposite end for indicating an amount of projection of said distal end of said probe from the end of the tracheal tube.

2. A positioning device according to claim 1, including a scale associated with said measuring sleeve for measuring the position of said probe relative to the tracheal tube.

3. A positioning device according to claim 1, wherein said carina engaging stop end portion comprises an x-ray opaque material.

4. A positioning device for positioning the distal end of a trachea tube within a trachea at a selected location with respect to a carina of the trachea, comprising:

a flexible elongated probe (3);
a pair of arms (4,5) foldably attached to one end of said probe and movable from a folded position lying parallel to and against said one end of said probe, to an unfolded position forming an inverted V-shaped configuration extending beyond said one end of said probe;

a measuring scale (9) on an opposite end of said probe for indicating the distance between the distal end of a tracheal tube and a carina of a trachea; and

said probe with measuring scale having a length greater than the tracheal tube and at least as great as a length of a person's trachea from the person's mouth to the carina of the trachea; and

means associated with said probe and adapted for use when said probe is within a trachea tube for moving said arms to said folded position when said one end of said probe is positioned in the trachea tube, and for moving said arms in said unfolded position when said one end to moved beyond the distal end of the trachea tube to permit engagement of said arms over the carina of the trachea and whereby a desired relative position of the distal end of the tracheal tube can be established with respect to the carina by aligning the proximal end of the tracheal tube with respect to said scale and said scale for the purpose of positioning the trachea.

5. A device according to claim 4, wherein said elongated probe comprises a hollow elastic tube, and said