

STYLETTE END CAP

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates generally to end caps utilized in conjunction with for example, endotracheal tubes or catheters and, in particular, to an end cap for use with stylettes or guides to act as a support and an abutment means to limit the travel of a catheter guide or endotracheal stylette.

2. Description of the Related Art

Stops have been disclosed in the prior art for endotracheal tubes and as catheter and stylette guides, which act to set the depth of penetration of the distal end of the guide or stylette into the endotracheal tube or catheter. These stops, in the past, have been of solid resilient material having a central bore extending completely through the solid stop which acts very much like a plug for the endotracheal tube.

In some instances, a hollow end, cap-like member has been proposed for supporting and, in a sense guiding, the catheter guide through and into the endotracheal or other tube with which the end cap may be utilized.

In practice, in the endotracheal tube setting, a guide taking the form of an elongated wand is inserted into and through a bore provided in the stop, and the stop is positioned at a preselected point in the length of the guide, with respect to its distal end, to predetermine the desired depth of penetration.

The proximal end portion of the guide is sometimes formed into a suitable handle and, therefore, must be malleable wherein the handle end is inserted into another aperture or recess in the stop to provide a means whereby the guide and associated, for example, endotracheal tube may be assembled for intubation of a patient requiring the medical procedure.

Prior art end caps have suffered in the context that they are either plug-like in configuration making them difficult to handle and associate with medical tubing or alternately, are either so thin-walled and flexible or stiff and hard as not to perform well with respect to allowing for specific-sized guides to be disposed therethrough and, ultimately, for proper disposition of the end-handled portion of for example, an endotracheal tube guide. In other instances, these end caps were not adequately dimensioned to be universally associable with medical-tubing of various diameters.

A search of related prior art yielded the following patents, some of which are relevant to the instant invention:

PATENT	INVENTOR	ISSUED
D 342,134	Mongeon, D.	Dec. 07, 1993
D 364,457	Mongeon, D. R.	Nov. 21, 1995
2,438,679	Parker, A. L.	March 30, 1948
2,442,983	Nesset, N. M.	June 08, 1948
2,847,995	Adams, J. Q.	Aug. 19, 1958
4,052,990	Dodgson	Oct. 11, 1977
4,185,639	Linder	Jan. 29, 1980
4,248,236	Linder	Feb. 03, 1981
4,475,548	Muto	Oct. 09, 1984
4,909,798	Fleischhacker et al	Mar. 20, 1990
4,981,464	Suzuki	Jan. 01, 1991
5,114,408	Fleischhaker et al.	May 19, 1992
5,285,776	Bertram	Feb. 15, 1994
5,554,124	Alvarado	Sep. 10, 1996
5,569,205	Hart et al.	Oct. 29, 1996
5,634,908	Loomas	Jun. 03, 1997

-continued

PATENT	INVENTOR	ISSUED
5,657,963	Hinchliffe et al.	Aug. 19, 1997

Probably the most pertinent of the references are the Mongeon Design Patent No. 342,134, which shows and describes an end cap for medical tubing, which may be considered somewhat tubular in form. The actual device is of rigid, tubular plastic, which is not easily associable with medical tubing of various diameters and further, suffers in the context of having but a singular through-bore. Mongeon Design Patent No. 364,457 entitled Intubation End Cap, has but a singular through-bore and has, projecting components which makes it difficult to associate a guide therewith and further it being of rigid plastic makes it difficult to associate with the ends of medical tubing.

The other more pertinent end cap or stop, as it is termed in Linder U.S. Pat. No. 4,185,639, suffers in the context that it is of solid material, adding weight because of its solid nature and further, not being as universally associable with the medical tubing as the herein-disclosed invention and further, not having the versatility thereof.

SUMMARY OF THE INVENTION

The stylette connector cap of the present invention provides a hollow or tubular stylette support and connection for example, for an endotracheal tube, wherein the connector cap comprises the combination of a tubular, elastomeric member of flexible, thin-wall construction having a first open end adapted to receive an elongate endotracheal tube in friction fit engagement therewith and having a second end of substantially closed wall construction with a plurality of spaced through bores of different diameters to receive one of a selected size stylette therethrough in supportive relationship therewith. The second end of the cap member has an interior, depending integral projection about a minor portion of the circumference of the interior of said second end, and is spaced away from the plurality of spaced through bores, which provides easy friction fit association with for example, the end of a medical tube. The terminus of the wall of the said first open end is radiused for ease of connection, and as indicated the tubular elastomeric member is flexible and pliable having a durometer rating of between 20-90 on the A scale with the preferred being 50-70 on the A scale.

With the above-disclosed stylette connector cap, it is possible to have universal capability of association with medical tubing wherein a wide range of medical tubing, relatively speaking, may be associated with the end cap because of an interior depending projection on leg member, which provides for friction fit retention interiorly of the end cap, and for disposition of the end cap over the external portion of the medical tube with which the end cap is associated.

Additionally, the end cap has a plurality of spaced apertures which allows for guides or stylettes of various sized diameters to be placed therethrough, and also provides a convenient method of retaining the end of a malleable guide which may be handle-shaped or configured so that the free end is received in one of the through holes or bores of the end cap.

OBJECTS OF THE INVENTION

It is another object of the present invention to provide an end cap for medical tubes and the like.