A therapeutic appliance is provided for holding a tube, or the like, along a patient's body. An elastic strap has adjustable fasteners at either end and a high friction layer along one face for frictionally engaging the patient's skin so that the elastic strap may be relatively loosely secured about the body with no appreciable constriction thereof. A tube receiving retainer is secured to the strap for releasably holding a catheter drainage tube, or the like. The retainer is a short length of strap similar to the body embracing strap and has one end sewed to the main strap with adjustable fasteners at either end so that the high friction layer may frictionally hold the tube while the elastic exerts little force against the tube.

10 Claims, 5 Drawing Figures
SURGICAL TUBE SUPPORTER

This invention relates to a therapeutic appliance and, more particularly, to an appliance for securing a tube, or the like, along a patient's body.

BACKGROUND OF THE INVENTION

It is often necessary to support or retain catheter drainage tubes, I.V. tubes, or the like, along the patient's body. This can be done by simply holding the tube in place with adhesive tape, or with gauze wrapped around the tube and the patient's leg or arm, or by various commercial appliances. One such appliance, a CATHETER SUPPORT, is shown in a patent, U.S. Pat. No. 3,726,280, in which an elastic band is secured around the patient's thigh and has an end portion for clamping a portion of the catheter tube itself to the thigh. A major difficulty with this type of appliance is the likelihood of constraining the thigh. Also, with the tube connection at the attaching end, the catheter tube is likely to be disturbed when adjusting the strap. Also, movement of the legs may interfere with the strap connectors.


It is a primary object of this invention to provide a new and useful therapeutic appliance. Another object is provision of a new and useful therapeutic appliance for securing a tube, or the like, along a patient's body.

More specifically, it is an object of this invention to provide a new and useful therapeutic appliance for securing a tube, or the like, along a patient's body, the appliance including an elastic strap having a high friction layer on one face for engaging the patient's skin so that the strap may be relatively loosely tightened about the patient's body without appreciable constriction of the body. A related object is provision of a retainer in the form of a strap secured at one end to the main strap and having a high friction layer for frictionally holding the tube while applying relatively little force to the tube when the free end of the strap is releasably secured to the fixed end. Longitudinally extending ribs are preferably formed in the high friction layer for increasing its frictional holding capacity and keeping the main strap from moving along the patient's body. Both the main strap and the tube retainer are preferably provided with adjustable fasteners such as the conventional Velcro fasteners.

THE INVENTION IN BRIEF

The invention is, in brief, directed to a therapeutic appliance in the form of an elastic strap which may be adjustably tightened about a portion of a patient's body, such as the thigh, the strap having a high friction layer on one of its faces for engaging the patient's skin so that the strap may be relatively loosely secured about the thigh while being firmly retained thereon by the high friction layer. A retainer for a tube, or the like, is secured to the strap and has adjustable fastener means for holding a tube. The retainer is also preferably in the form of a strap similar to the main strap and having a high friction layer so that the tube may be firmly held in place without exerting a high constrictive force on the tube. The retainer strap is preferably obliquely secured to the main strap for convenient positioning a catheter drainage tube extending, in typical manner, from a catheter tube to a container.

Additional objects and advantages of the invention will be apparent from the following description and the accompanying drawing.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a fragmentary perspective view of a preferred embodiment of a catheter strap secured about a patient's thigh with a retainer holding a catheter drainage tube;

FIG. 2 is an enlarged, foreshortened view of the inner face of the strap when removed from the patient's thigh, with the drainage tube indicated in phantom lines;

FIG. 3 is a view similar to FIG. 2 but of the outer face of the strap;

FIG. 4 is an enlarged, fragmentary sectional view, taken generally along the line 4—4 in FIG. 3, showing the tube retainer in closed position holding the tube;

FIG. 5 is an enlarged, fragmentary view of the outer face of the strap with the tube retainer in open position to receive the tube.

DESCRIPTION OF THE ILLUSTRATED EMBODIMENT

Referring to the drawing, FIG. 1 shows an elastic strap 10 secured about the thigh of a patient's body and having a retainer 12 holding a catheter drainage tube 14 in place across the patient's thigh. An inner end of the tube is connected in typical manner with the outer end of a typical urinary catheter 16. Retainer 12 is preferably obliquely secured to an outer face 18 of the strap, at an angle generally as indicated in the drawings, so that the outer end of the drainage tube 14 may be conveniently placed across the thigh of the patient with the inner end of the drainage tube 14 and the catheter 16 slack to avoid pulling on the catheter as the patient moves about.

The illustrated embodiment of the strap 10 includes an elastic fabric portion 20, an inner face 22 thereof having a high friction layer 24 laminated thereon for preventing slipping of the strap 10 on the patient's thigh so that only very slight tension is required in holding the strap, thus preventing constriction of the leg.

The strap 10 may be of any suitable material such as a commercially available material normally used for waistbands and the like in women's apparel, and manufactured by United Elastic Company, Division of J. P. Stephens and Company, Inc., New Haven, Conn., Model Number 7-4253 WR width 21-R1, for example.

Opposite ends of the strap 10 are provided with releasable and adjustable fasteners, such as cooperating Velcro fasteners 26 having parts stitched, as at 28, to opposite ends of the strap 10. More particularly, one end of the inner surface 22 of the strap 10 has a relatively short Velcro piece 30 secured thereto, and the outer face 18 of the other end of the strap 10 has a relatively long piece of Velcro 32 (approximately 4 inches) secured thereto to permit adjustment of the strap around the patient's thigh while effectively preventing contact of the Velcro piece 30 with the patient's skin.

While the surface of the high friction material 24 is available in several patterns, the preferred material has longitudinally extending ribs which cause less abrasion.
3,878,849

of the patient's skin than transverse, diagonal or criss-cross configuration. Stitching 28 also secures a label 33
to the out face 18 of the strap 20 opposite the Velcro piece 30.

The drainage tube retainer 12, as shown best in FIGS. 4 and 5, is preferably made of the same material as the
strap 10 and has an inner face 34 with a high friction
layer 36 having longitudinally extending ribs, as previ-
ously described, for gripping the tube 14 with the ribs
transverse the longitudinal axis of the tube 14, to better
hold the tube in position. The drainage tube 14 is posi-
tioned across the open retainer 12 (FIG. 5), whereupon
the free end of the retainer 12 is folded across the tube
14 and the Velcro fasteners 38 engaged to hold the
tube in place, as shown in FIG. 4. Only a very small
amount of force is required against the tube 14 to hold
it in place because of the friction layer 36 and its ribs.
Stitching 40 secures the Velcro fastener 38 to the fixed
end of the retainer 12 and also secures the retainer to
the outer face 18 of the strap 10. Similarly, stitching 42
secures the other Velcro fastener 38 to the free end of
the retainer 12.

While the angular disposition of the retainer 12, as
shown in the drawing, is desirable when the strap 10 is
to be secured to the right thigh of the patient, the dispo-
sition of the retainer 12 should be reversed if the strap
is to be applied to the left thigh. To provide more uni-
versal applicability, the retainer 12 may be secured in
a perpendicular position relative to the strap 10.

As shown in FIG. 1, the retainer 12 is preferably con-
siderably closer to the Velcro fastener 30 on the inner
face 22 of the strap 10, than it is to the Velcro fastener
32 on the outer face 18 of the strap, so that the free
ends of the strap may be secured to each other prox-
imate the outer, upper portion of the thigh with the re-
tainer 12 positioned generally as shown along the inner
portion of the thigh.

The strap is devoid of any metal parts which may dis-
turb the patient or possibly damage the drainage tube.
Since the strap is washable it may be reused by the
patient, and the strap may be provided in various
lengths suitable for an individual patient.

While the invention has been described and illus-
trated with reference to a particular embodiment in a
particular environment, various changes may be appar-
tent to one skilled in the art and the invention is not to
be limited to such embodiment or environment, except
as set forth in the appended claims.

What is claimed is:

1. A therapeutic appliance for securing a tube, or the
like, along a patient's body member, the appliance
comprising a flexible elastic strap for encircling the
body member, fastener means spaced apart along the
strap for releasably securing the strap about the body
member, means in the form of a yieldable layer having
a high friction surface extending along one face of the
strap for effectively the entire length of the strap be-
tween the fastener means for firmly engaging the body
member and retaining the strap in place along the body
member with sufficiently light pressure exerted by the
strap that there is substantially no appreciably constrict-
tion of the body member by the strap, said means fur-
ther comprising a raised pattern on said surface for
more secure engagement of the body member by the
appliance, and means comprising a retainer operatively
associated with the strap for receiving and retaining the
tube.

2. An appliance as set forth in claim 1 in which the
pattern comprises ribs extending longitudinally of the
layer.

3. An appliance as set forth in claim 1 in which the
retainer comprises a strap means for securing the last
said strap about the tube, and means in the form of a
yieldable high friction layer on one face of the last said
strap for engaging the tube and firmly retaining the
tube in place.

4. An appliance as set forth in claim 1 in which the
strap has opposite end portions, the fastener means in-
cludes cooperating fastener parts, one on each of said
end portions, for releasably securing the strap about
the body member, and the retainer is secured to the
strap intermediate said end portions.

5. An appliance as set forth in claim 4 in which the
retainer is secured to the strap substantially closer to
one of the end portions than to the other.

6. An appliance as set forth in claim 5 in which the
retainer comprises a second strap having opposite end
portions, one secured to a face of the first said strap op-
posite said layer, cooperating fastener parts on the last
said end portions for releasably securing the end por-
tions to each other, and a yieldable high friction layer
along one face of the second strap for receiving and
firmly retaining the tube with a very small force applied
to the tube by the second strap when the ends of the
second strap are secured to each other.

7. An appliance as set forth in claim 6 in which the
layers of the straps are pliable and have ribs extending
longitudinally between the respective end portions
thereof, and the fastener parts are adjustable for vary-
ing the forces applied to the body and to the tube.

8. An appliance as set forth in claim 7 in which said
fastener parts are Velcro.

9. An appliance as set forth in claim 1 in which the
strap has opposite end portions with cooperating fast-
ter parts for securing the strap about the body, and
the high friction surface is pliable and has ribs extend-
ing longitudinally between the end portions of the
strap, and the fastener means is adjustable for varying
the force applied by the strap to the body.

10. An appliance as set forth in claim 1 in which the
fastener means has cooperating fastener parts spaced
apart along the strap, and the retainer is secured to the
strap closer to one of the fastener parts than to the
other.

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