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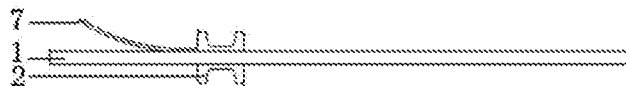
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Simple anti-slip medical drainage tube and its application.

(57)

The invention relates to a simple anti-slip medical drainage tube, which comprises a drainage tube and a clamping airbag, wherein the clamping airbag comprises a body with a shaft hole in the center, and the drainage tube can be adaptively sleeved in the shaft hole. The end face of the body is provided with a groove for clamping skin and subcutaneous tissue. The body has a hollow structure, forming a cavity, it is also provided with an air inlet that communicates with the cavity. A conduit extends from the air inlet with a sealing device installed at its free end. When the gas or liquid communicates into the main body through conduit, the cavity is deformed, thus the groove generates clamping force on the article. The invention is convenient to use and highly efficient.

FIGURES**Figure 1**

DESCRIPTION**Simple anti-slip medical drainage tube and its application****TECHNICAL FIELD**

The invention belongs to the technical field of medical equipment, and particularly relates to a simple anti-slip medical drainage tube.

BACKGROUND

At present, although the use of body fluid drainage tubes in the drainage of thoracic cavity, armpit, abdominal cavity, etc. is relatively mature, the prior art traditionally applied cannot fix the tube body properly as the end of drainage tube is inserted into the human body. If the patient has liquid seepage, which leads to pipeline displacement, there is an increased chance of accidental shedding and infection. In order to prevent accidental slippage of the catheter, the traditional method of skin suturing is used, which not only increases the probability of infection to patient, but also causes traction pain, and it is cumbersome to removing sutures.

The existing medical drainage tube is usually fixed on the skin by suture to prevent the drainage tube from falling out, which undoubtedly brings pain to patients. In the existing suture method of drainage tube, the longer the drainage time is, the easier it is to infect the skin drainage port. If the position of the skin drainage port is not fixed properly, it is easy to cause oozing.

SUMMARY

In order to solve the above-mentioned problems in the prior art and avoid the pain caused by suturing the drainage conduit, a technology of using a clamping device is designed, and the technical scheme for achieving the above-mentioned purpose is as follows:

Simple anti-slip medical drainage tube comprises conduit tube and clamping airbag, the described clamping airbag includes a body, the described body comprises

a body with a shaft hole in the center, and the drainage tube can be adaptively sleeved in the shaft hole. The end face of the body is provided with a groove for clamping skin and subcutaneous tissue

The body has a hollow structure, forming a cavity, it is also provided with an air inlet that communicates with the cavity. A conduit extends from the air inlet with a sealing device installed at its free end. When the gas or liquid communicates into the main body through conduit, the cavity is deformed, thus the groove generates clamping force on the article, thus, it is unnecessary to suture the drain entrance to fix the conduit tube.

Because the article is stuck in the annular groove, and the clamping air bag is arranged on the periphery of the drainage port, just like a clamp clamps the skin, and because gas or liquid causes the annular groove to generate pressure, the groove wall of the annular groove clings to the skin, so that the position of the clamping air bag is fixed, thus preventing the liquid in the drainage port from seeping out and preventing the drainage tube from slipping off. It is very convenient to use, not only does the patient not need to bear the discomfort caused by the displacement of the drainage tube, but also when the operator operates.

The clamping balloon can be clamped on both sides of the skin after inflation, so that the drainage tube can be fixed, the pain caused by the suture fixing mode can be avoided, and the infection risk of the drainage port can be reduced; when the drainage tube can be pulled out, the drainage tube can be pulled out conveniently by first pumping liquid or air from the catheter with a syringe, and the operation is very simple.

BRIEF DESCRIPTION OF THE FIGURES

Fig. 1 is an overall schematic diagram of the present invention;

Fig. 2 is a schematic diagram of a clamping airbag;

Fig. 3 is an overall schematic diagram of the present invention; The serial numbers of the drawings are as follows: Drainage tube 1, Clamping airbag 2, Body 3. Shaft hole 4, Annular groove 5, Air inlet 6, Conduit tube 7.

DESCRIPTION OF THE INVENTION

The present invention will be described in detail with reference to the accompanying drawings.

In figure, a simple anti-slip medical drainage tube comprises Drainage tube 1, Clamping airbag 2, the described Clamping airbag 2 comprises Body 3 with a Shaft hole 4 in the center. The end face of the body 3 is provided with a groove, preferably, an Annular groove 5, preferably, the annular groove 5 is concentric with the shaft hole 4, and the annular groove 5 is used for clamping a required clamping object or article, such as skin.

In the present invention, the concentricity includes both concentric circles and the case where the axes are perpendicular to each other, and the concentric arrangement can ensure that the center of gravity of the clamping airbag 2 will not shift, and the drainage tube 1 will not skew at will when in use. Since the annular groove 5 has a circular structure, the drainage tube 1 can be inserted into the shaft hole 4 at will, and the insertion position does not need to be specially adjusted.

It is certain that the annular groove 5 and the shaft hole 4 can also be arranged with different centers, that is, the axial center of the annular groove 5 deviates from the axial center of the shaft hole 4, as long as the drainage tube 1 and the annular groove 5 are conveniently matched during use.

The interior of the body 3 has a hollow structure, forming a cavity, so it integrally forms an air bag. The body 3 is also provided with an air inlet 6, which is communicated with the cavity. A conduit 7 extends from the air inlet 6, and a sealing device is installed at the free end of the conduit 7, which is used to seal the air bag to prevent liquid backflow and gas leakage. The liquid or gas enters the body 3 through the conduit tube 7, when the gas or liquid is filled into the body 3, the annular groove 5 is deformed due to the filling of the gas or liquid. During the deformation, the groove wall of the annular groove 5 will closely adhere to the skin, thus generating a clamping force on the skin.

The amount of liquid or gas filled in the cavity determines the deformation of the annular groove 5, which directly determines the pressure of the annular groove 5 on

the skin, so the pressure can be determined by adjusting the amount of gas or liquid injected into the cavity.

The sealing device can be a sealing plug or a sealing cap, and the sealing device blocks the free end of the conduit tube 7, so as to achieve the purpose of sealing the inside of the body without letting air or other substances enter the body. An injection port can be arranged on the sealing device, and the injector can inject liquid or gas into the body 3 through the injection port. The sealing device is made of materials with certain strength and elasticity, such as rubber or silica gel. The sealing plug is made of such materials, and the injection port is automatically sealed when not in use. The principle adopted is the pressure difference cut-off valve principle, just like a venous valve and a basketball vent, the gas can only enter and exit. The sealing device not only seals the cavity of the whole clamping airbag, but also prevents the liquid from flowing back, and only when the syringe is inserted again can the liquid or gas be pumped back. Even if the syringe is inserted into the injection port, the inner wall of the injection port will only wrap the syringe, and no air leakage will occur.

The whole clamping airbag 2 is also made of a material with certain strength and elasticity, such as rubber or silica gel, which has a certain friction force. When the groove wall of the annular groove clamps the skin, the friction force of the material itself will make the clamping air bag tightly stick to the skin, while the elastic material has a good softness. When the annular groove 5 clamps the skin, no pain will occur.

Preferably, the bottom of the annular groove 5 has a concave arc structure, and when the skin is clamped, the arc structure can deform the skin to a certain extent without causing the skin to feel tight and oppressive.

In use, the drainage tube 1 is inserted into the shaft hole 4 of the clamping balloon 2, and the clamping balloon 2 is about 15 cm away from one end of the drainage tube 1, and the other end of the drainage tube 1 is used for connecting other devices for receiving drainage materials. After the clamping airbag 2 is fixed, some skin around the wound which needs drainage is slightly lifted, and the annular groove 5 of the clamping airbag 2 is clamped on the lifted skin. Then (for example, a needle syringe is used to inject liquid), the needle of the syringe is inserted into the injection port, and the syringe is pushed to inject liquid into the body. The clamping airbag 2 is gradually

strengthened under the filling of liquid, and the groove wall of the annular groove 5 is also gradually strengthened. The strengthened annular groove 5 gradually expands due to the pressure of liquid. During the expansion process, the skin in the annular groove is clamped by the groove wall of the annular groove 5. After that, the needle is pulled out and the injection port is closed by the sealing plug. Finally, the position or length of the lower drainage tube 1 is adjusted, and the fixation of the drainage tube 1 is completed.

After the drainage tube 1 is fixed, the drainage tube 1 can be used to suck out the liquid in the drainage port. In the drainage process, scissors can be used to cut out several uniform holes on the tube at the free end of the drainage tube 1 to increase the area of the liquid drawn out.

When the drainage tube 1 does not need to be fixed, the empty syringe needle is inserted into the injection port, the liquid in the body is sucked out by the syringe, the cavity of the body gradually collapses due to the loss of filler, and the annular groove 5 loses its clamping force on the skin.

Because the annular groove 5 is required to generate clamping force on the skin belly, the annular groove 5 can be manufactured with different diameters as required, for example, the annular groove width can be manufactured with a specification of 2 cm. The drainage tube is generally a tube with a length of about 45cm and a diameter of about 1cm, but the specific length can be increased or shortened according to actual needs. When injecting physiological saline or gas into the body, the amount of water injected or air can be adjusted according to the skin thickness of different people, so as to make the pressure of the annular groove 5 moderate and avoid bruising the skin.

The annular groove 5 in the invention can be firmly fixed on the outer periphery of the skin drainage port, thereby avoiding the pulling pain of patients caused by sewing and fixing the drainage tube 1, keeping the skin clean and dry, and preventing infection, moreover, a rubber pad is adopted at the end of the clamping airbag catheter to prevent liquid from flowing back, which is novel in design and simple and convenient to operate and use.

The above is only a preferred embodiment of the embodiments of the present invention, and is not used to limit the embodiments of the present invention. Any

modifications, equivalent substitutions, improvements, etc. made within the spirit and principles of the embodiments of the present invention shall be included in the protection scope of the embodiments of the present invention.

CLAIMS:

1. Simple anti-slip medical drainage tube is characterized in comprising a body with a shaft hole in the center, and the drainage tube can be adaptively sleeved in the shaft hole; the end face of the body is provided with a groove for clamping skin and subcutaneous tissue, wherein the body has a hollow structure, forming a cavity, it is also provided with an air inlet that communicates with the cavity; a conduit extends from the air inlet with a sealing device installed at its free end; when the gas or liquid communicates into the main body through conduit, the cavity is deformed, thus the groove generates clamping force on the article.

2. According to claim 1, the simple anti-slip medical drainage tube is characterized in that the groove is an annular groove.

3. According to claim 1, the simple anti-slip medical drainage tube is characterized in that the sealing device is provided with an injection port, the injection port can be filled with gas or liquid, the injection port is automatically closed when not in use.

4. According to claim 1, the simple anti-slip medical drainage tube is characterized in that the sealing device is made of rubber or silica gel.

5. According to claim 2, the simple anti-slip medical drainage tube is characterized in that the bottom of the annular groove is an arc structure.

6. According to claim 1, the simple anti-slip medical drainage tube is characterized in that the material of the clamping air bag is an elastic material.

7. According to claim 6, the simple anti-slip medical drainage tube is characterized in that the elastic material is rubber or silica gel.

8. The application of the simple anti-slip medical drainage tube is characterized in that (1) inserting the drainage tube into the axle hole in the clamping airbag,

(2) placing the clamping airbag on the periphery of the drainage port;

(3) holding the skin of the drainage port and cram the skin into the groove;

(4) injecting gas or liquid into the drainage tube with a syringe;

(5) observing the state that the groove clamps the skin; when the clamping airbag clamps the skin, stopping the injection, pulling out the syringe, the drainage and fixation process is completed.

REVENDEICATIONS

1. Un drain tubulaire médical antidérapant simple, caractérisé par qu'il comprend le corps avec un trou d'axe au centre ; le drain tubulaire est capable d'être gainé de manière adaptative dans le trou d'axe ; la rainure pour serrer la peau et le tissu sous-cutané est prévue à la face d'extrémité du corps ; le corps est une structure creuse et une cavité se forme à l'intérieur ; l'entrée d'air en communication avec la cavité est également prévue sur le corps ; le conduit s'étend à partir de l'entrée d'air, avec un dispositif d'étanchéité installé à l'extrémité libre ; après que le gaz ou le liquide est entré dans le corps à travers le conduit, la cavité est déformée, ce qui permet à la rainure de générer la force de serrage envers l'article.
2. Le drain tubulaire médical antidérapant simple décrit dans la revendication 1 est caractérisé par le fait que la rainure est une rainure annulaire.
3. Le drain tubulaire médical antidérapant simple décrit dans la revendication 1 est caractérisé par le fait qu'un orifice d'injection qui permet d'être rempli de gaz ou de liquide est prévu sur le dispositif d'étanchéité, et est automatiquement fermé lorsqu'il n'est pas utilisé.
4. Le drain tubulaire médical antidérapant simple décrit dans la revendication 1 est caractérisé par le fait que le dispositif d'étanchéité est en caoutchouc ou en gel de silice.
5. Le drain tubulaire médical antidérapant simple décrit dans la revendication 2 est caractérisé par le fait que le fond de la rainure annulaire est une structure en arc.
6. Le drain tubulaire médical antidérapant simple décrit dans la revendication 1 est caractérisé par le fait que le coussin gonflable de serrage est fait avec un matériau élastique.
7. Le drain tubulaire médical antidérapant simple décrit dans la revendication 6 est caractérisé par le fait que le matériau élastique est du caoutchouc ou du gel de silice.
8. La méthode d'application du drain tubulaire médical antidérapant simple est caractérisée par les étapes suivantes :
 - (1) insérer le drain tubulaire dans le trou d'axe du coussin gonflable de serrage ;
 - (2) placer le coussinet gonflable de serrage à l'entourage de l'orifice de drainage ;

- (3) tenir la peau au niveau de l'orifice de drainage et introduire la peau dans la rainure ;
- (4) injecter le gaz ou le liquide dans le drain tubulaire avec une seringue ;
- (5) observer l'état de serrage de la peau dans la rainure, arrêter l'injection et retirer la seringue après que le coussin gonflable de serrage a serré la peau, le processus de drainage et de fixation est terminé.

FIGURES

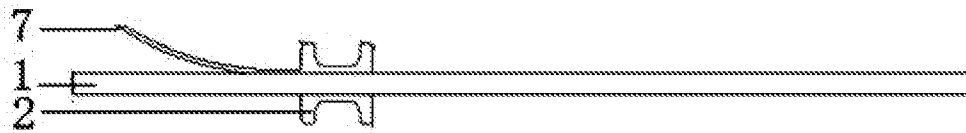


Figure 1

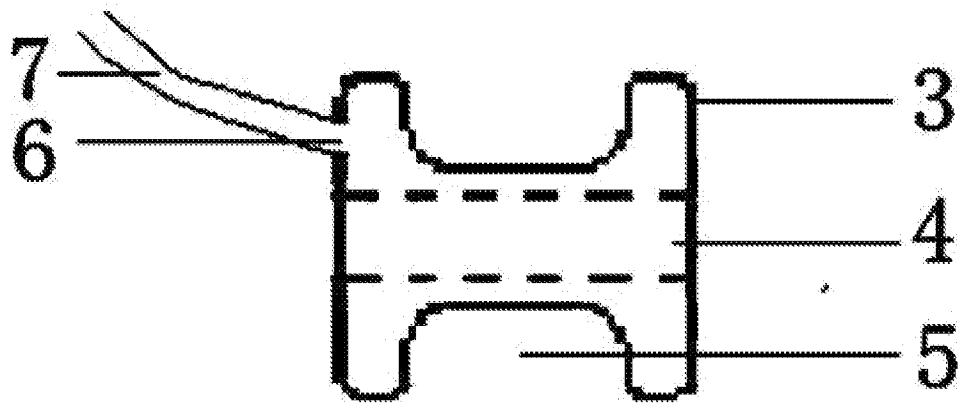


Figure 2

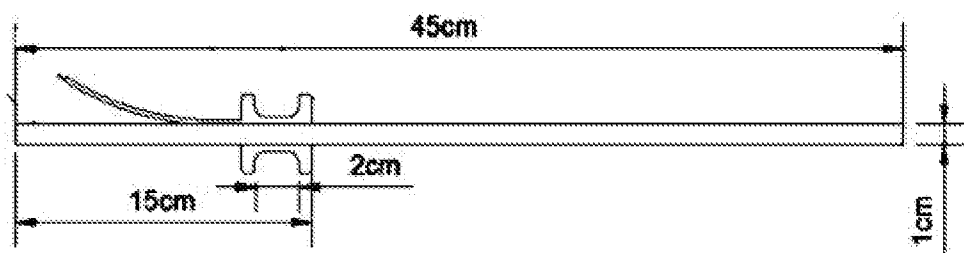


Figure 3