United States Patent [19]

Bronstein

[11] **3,732,869**

[45] **May 15, 1973**

[54] CIRCUMCISION METHOD AND PROBE

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[22] Filed: **Sept. 25, 1970**

[21] Appl. No.: **75,467**

[52] **U.S. Cl.** .....**128/304,** 128/2 B
[51] **Int. Cl.** **A61b 17/22**
[58] **Field of Search**.....128/1 R, 2 B, 269, 128/270, 303, 304; 66/118

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[57] **ABSTRACT**

Probes for use in loosening and extracting smegma from the cervix of the glans penis of an uncircumcised male human being, preliminary to a circumcision operation, are disclosed. The probe construction is characterized by a small, somewhat elongated bulbous head having an oval or rounded tip and undercut at one side to provide a hook structure adapted to be protracted interiorly of the mucosa into the cervix of the glans. The hook structure may be provided with a medial longitudinal channel to define a pair of lateral ears to enhance the smegma-loosening action. When the probe is moved to a limited extent laterally back and forth, i.e., right and left, along the corona of the glans, with the hook structure protracted into the cervix of the glans behind the corona, smegma accumulated in the cervix is loosened and broken free by the hook structure without risk of injury to the frenulum and can then be pulled out with the hook structure when the probe is withdrawn from the prepuce.

This abstract is not to be taken either as a complete exposition or as a limitation of the present invention, however, the full nature and extent of the invention being discernible only by reference to and from the entire disclosure.

9 Claims, 8 Drawing Figures

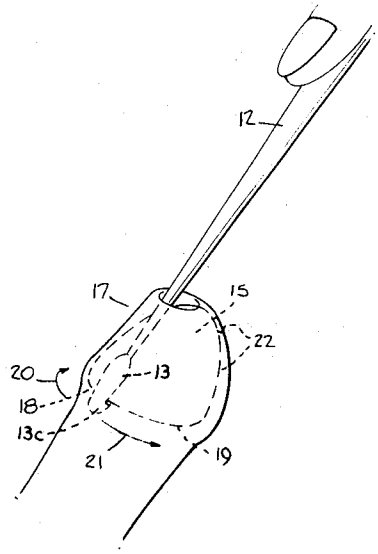


Fig. 1.

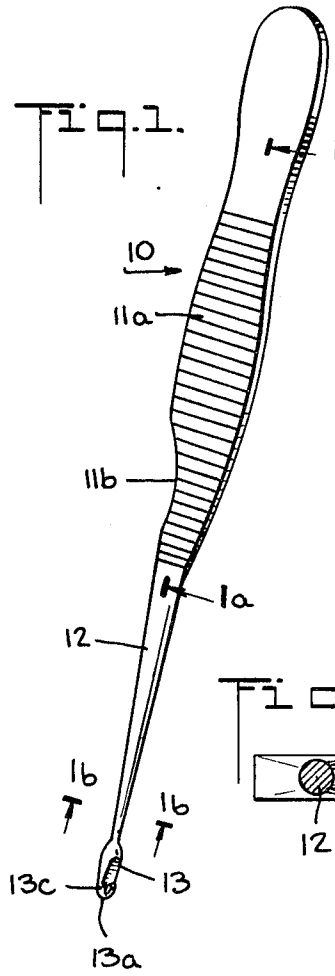


Fig. 1a.

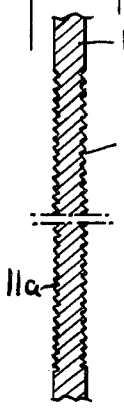


Fig. 1b.

Fig. 2.

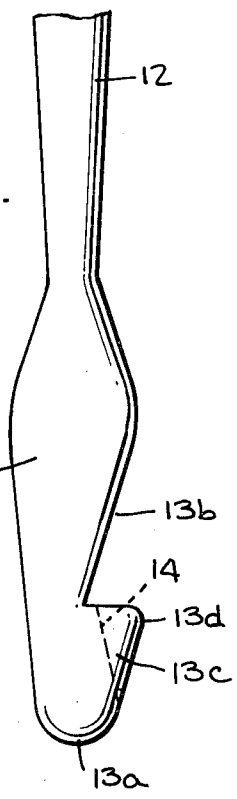


Fig. 3.

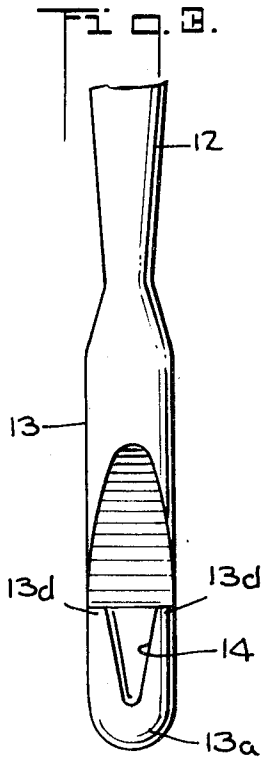


Fig. 4.

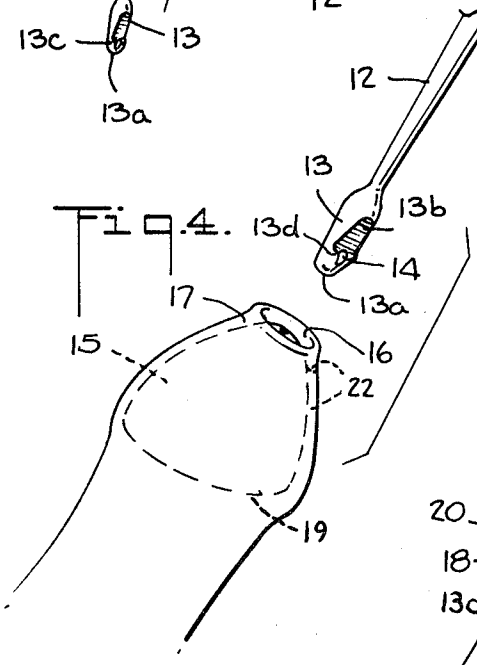


Fig. 5.

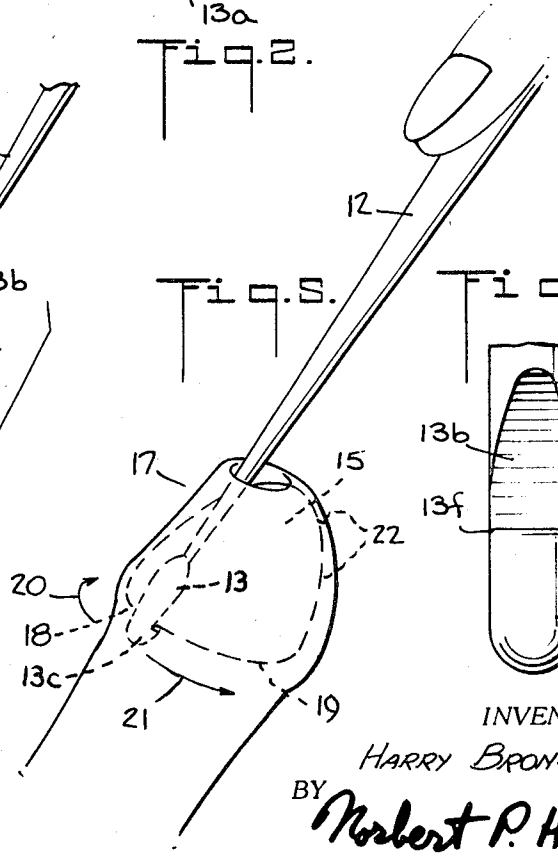


Fig. 6.

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CIRCUMCISION METHOD AND PROBE

This invention relates to the art of circumcision of male human beings, and in particular to probes designed for use in connection therewith.

Preliminary to the performance of a circumcision operation, it has heretofore been recommended practice to pass a narrow blunt-ended probe through the preputial orifice into the space between the glans penis and the mucosa within the prepuce or foreskin overlying the same, for the purpose of loosening the mucosa from the surface of the glans in order to enable it subsequently to be cut off together with the prepuce. Incidental to the loosening of the mucosa, some of the smegma accumulated on the surface of the glans is also loosened.

Smegma, apart from accumulating on the surface of the glans, also accumulates in the cervix of the penis of an uncircumcised male, i.e. behind the corona of the glans, where it is not accessible for removal, however, unless the person is properly circumcised. The removal of such smegma is a matter of extreme importance, since medical research has statistically shown that smegma is carcinogenic as well as a contributing factor to the occurrence of infections, inflammations and other diseases of the penis. Accordingly, circumcision has now become a medically acceptable and highly recommended practice designed to facilitate access to the cervix for removal of smegma and to prevent its accumulation there. Nevertheless, many circumcisions presently performed are deficient in that insufficient steps are taken to ensure the loosening and removability of the smegma from the cervix of the glans, as a result of which the avowed purpose of the entire operation frequently is effectively nullified. I believe that one of the primary reasons for this has been the inability of the circumcision probes heretofore used to loosen and break free the smegma in the cervix of the glans.

In addition to the foregoing, operators performing probing operations preliminary to circumcisions have generally not been aware of a need for limiting the movement of the probe over the glans in the ventral direction. As a result, they have frequently caused severe injury to the person being circumcised.

It is an object of the present invention, therefore, to provide novel and improved circumcision probe constructions by means of which the disadvantages and drawbacks of the known probes and probing methods can be efficaciously avoided.

More particularly, it is an object of the present invention to provide novel and improved circumcision probes the use of which in a novel probing method will ensure that smegma accumulated in the cervix of the glans penis of a male person being circumcised will be loosened and broken free without risk of injury to such person and will be at least partly removed when the probe is withdrawn from the prepuce.

Generally speaking, the objectives of the present invention are attained by a circumcision probe construction characterized by a small, somewhat elongated, oval or round-tipped bulbous head which is undercut at one side to provide a hook structure having a wall facing in the direction away from the tip. The hook structure is preferably provided with a small, medial, longitudinally extending channel starting slightly rearwardly of the tip of the head and preferably deepening as well as flaring gradually in the direction away from the tip,

thereby imparting to the hook structure itself a dual-eared configuration. In the use of the probe, upon insertion of the same between the glans penis and the mucosa, the hook structure is caused to enter the cervix of the glans where, as it is moved laterally back and forth, i.e., right and left around the glans and along the corona thereof, the ears of the hook structure will serve to loosen and free accumulated smegma to enable the same then to be drawn out with the probe. In the novel probing method of the present invention, the extent of such movement of the probe toward the ventral portion of the glans is limited to a specified amount less than the full circumference of the glans to avoid any injury to the frenulum.

The foregoing and other objects, characteristics and advantages of the present invention will be more clearly understood from the following detailed description thereof when read in conjunction with the accompanying drawing, in which:

FIG. 1 is a perspective view of a circumcision probe according to one aspect of the present invention;

FIGS. 1*a* and 1*b* are, respectively, sectional views taken along the lines 1*a*–1*a* and 1*b*–1*b* in FIG. 1;

FIGS. 2 and 3 are, respectively, fragmentary side elevational and bottom plan views, on an enlarged scale, of the probe shown in FIG. 1;

FIGS. 4 and 5 are, respectively, fragmentary perspective views of the probe of FIG. 1 in different stages of use thereof; and

FIG. 6 is a fragmentary bottom plan view, similar to FIG. 3, of a circumcision probe according to another aspect of the present invention.

Referring now to the drawing in greater detail, the probe 10 (FIG. 1) according to one aspect of the present invention has a body or handle portion 11, a neck portion 12 and a head 13. The body portion 11 is preferably flat and bilaterally knurled or otherwise surface-roughened, as shown at 11*a* (FIGS. 1 and 1*a*), in order to facilitate its being gripped and held tightly without chance of slippage during a probing operation. The body 11 is further provided with a dorsal depression 11b to accommodate the tip of the operator's index finger. The neck portion 12 changes from flat to round configuration (FIG. 1*b*) as it approaches the head 13, and both the neck portion and the head are entirely smooth-surfaced.

The head 13 is a relatively small, somewhat elongated, bulbous member of generally oval configuration, for example about 1 to 2 mm. in diameter at its widest section and about 6 mm. or so long, which terminates in a rounded or oval tip 13*a* and is undercut at one side of the probe, as shown at 13*b* (FIGS. 2 and 4), to define a hook structure 13*c* about 1 to 2 mm. long as measured from the tip 13*a* and having a wall facing in the direction away from the tip. The hook structure 13*c* is preferably provided with a small, medial, longitudinally extending, channel 14 which starts slightly rearwardly of the tip 13*a* of the head and is shown as becoming gradually deeper and wider in the rearward direction (FIGS. 2 and 3) until it intersects the said wall of the hook structure, although it will be apparent that the contours of the channel may differ somewhat from the illustrated shape, as by being straight-sided, of constant depth, etc. The channel provides the hook structure with a pair of lateral ears 13*d*, the manner of functioning of which will be more fully explained presently.

In use, the head end of the probe **10** is inserted generally dorsally of the glans penis **15** through preputial orifice **16** (FIG. **4**), which may be held sufficiently wide open with the aid of one or more small hemostats (not shown), and into the prepuce **17** so as to pass between the mucosa underlying the same and the glans covered thereby, until the hook structure **13***c* enters the cervix **18** of the glans just behind the corona **19** thereof (FIG. **5**). The probe is then gently moved back and forth around the glans, i.e., to the right and left as indicated by the arrows **20** and **21.** The extent of such movement in the ventral direction must be carefully limited to terminate short of the ventral low point of the glans so as to avoid causing any damage to the frenulum **22.** In accordance with my invention, the limits of the probe movement preferably should be approximately the 4:30 and 7:30 o'clock positions, the frenulum being considered as being at the 6:00 o' clock position (the ventral low point of the glans) and the dorsal high point of the glans as being at the 12:00 o'clock position. During this movement, therefore, smegma which has accumulated in the cervix of the glans will be loosened and broken free of the glans by the ears **13***d* of the hook structure **13** so that, upon withdrawal of the probe, at least some of the smegma may be drawn by the hook structure out of the cervix of the glans. Concomitantly, the movement of the remainder of the head **13** of the probe around and over the corona of the glans, while the proximate section of the neck portion moves over the surface of the glans frontwardly of the corona, will also loosen the mucosa therefrom, to enable the latter subsequently to be cut off together with the prepuce, and will also loosen, for subsequent removal, any smegma lying on the surface of the glans forwardly of the corona.

Although the invention has so far been described with reference to a probe construction characterized by the provision of a channel in the hook structure, it is contemplated that the objectives of the present invention may also be attained by means of a probe construction lacking such a channel. This type of probe is represented in FIG. **6,** where the head **13'**, again undercut at **13***b*, is shown as having an imperforate hook structure **13***e* the opposite corners **13***f* of which will serve as the ears of the hook structure and perform the function of loosening smegma in the cervix of the glans as the probe is moved laterally back and forth about the glans in the manner previously set forth.

Probes according to the present invention can be easily produced by standard manufacturing techniques either to be reusable, in which case they will preferably be made of stainless steel or the like, or to be disposable after a single use, in which case for purposes of minimum cost of production they will preferably be made of synthetic thermoplastic or thermosetting resinous materials such as nylon, polyethylene, polypropylene, and the like suitably processed not only to have the desired hardness or strength characteristics but also to be able to withstand autoclaving, for purposes of sterilization, at temperatures of about 300°F. or more without softening or becoming warped. Both the resinous or plastic material and any reinforcing filler used therein must, of course, be non-toxic or characterized by levels of toxicity sufficiently low to render them acceptable for surgical procedures on human beings.

It will be understood that the foregoing description of preferred embodiments of the present invention is for purposes of illustration only, and that the various structural and operational features herein disclosed are susceptible to a number of modifications and changes none of which entails any departure from the spirit and scope of the present invention as defined in the hereto appended claims.

Having thus described my invention, what I claim and desire to protect by Letters Patent is:

1. A circumcision probe for loosening smegma from the cervix of a glans penis of an uncircumcised male human being, comprising a body portion adapted to be held by an operator, and a small, somewhat elongated, longitudinally extending generally oval, Mucosa-loosening and smegma-breaking head secured at one end to said body portion at one end of the latter, said head having a rounded tip and being undercut on one side to define a corona engaging hook structure having a wall facing away from said tip, said hook structure being adapted to be protracted into and moved laterally along the cervix of a glans penis, with the portion of said head directed toward said body portion extending over the corona of the glans and toward the orifice of the prepuce, upon insertion of the probe through the orifice of the prepuce so as to pass between the mucosa and the glans, whereby upon such movement of the probe smegma accumulated in the cervix of the glans will be loosened and broken free by said hook structure and may be at least partly extracted therewith when the probe is withdrawn.

2. A circumcision probe according to claim **1,** said hook structure being provided with a small, medial, longitudinally extending channel starting rearwardly of the tip of said head and intersecting said wall to provide said hook structure with a pair of lateral ears.

3. A circumcision probe according to claim **2,** said channel being narrowest at its end nearest the tip of said head and becoming gradually wider in the direction of said wall.

4. A circumcision probe according to claim **2,** said channel being shallowest at its end nearest the tip of said head and becoming gradually deeper in the direction of said wall.

5. A circumcision probe according to claim **2,** said channel being shallowest and narrowest at its end nearest the tip of said head and becoming gradually deeper and wider in the direction of said wall.

6. A circumcision probe according to claim **1,** said head, said neck portion and said body portion constituting a one-piece structure made of stainless steel.

7. A circumcision probe according to claim **1,** said head, said neck portion and said body portion constituting a one-piece structure made of synthetic thermoplastic or thermosetting resinous materials, and having zero or acceptably low levels of human toxicity and hardness or strength characteristics sufficient to enable the entire structure to withstand autoclaving at temperatures of at least about 300°F. without becoming softened or warped.

8. A method of probing the glans penis of a male person preliminary to the performance of a circumcision operation on such person, comprising the steps of inserting through the orifice of the prepuce, generally dorsally of the glans and between the latter and the mucosa overlying the same, a probe which has a small, somewhat elongated, generally oval bulbous head terminating in a rounded tip and is undercut on one side to provide a hook structure having a wall facing away

from said tip, advancing said probe inwardly over the glans until said hook structure enters the cervix of the glans behind the corona thereof, with the portion of said head farther from said tip than said hook structure extending over the corona and toward the orifice of the prepuce, moving said probe laterally right and left about the glans and toward the ventral portion thereof to an extent terminating at either side of the glans somewhat short of the ventral low point of the glans constituting the location of the frenulum, thereby to move said hook structure correspondingly within the cervix of the glans and cause the mucosa to be loosened from the surface of the glans and smegma accumulated in the cervix of the glans to be loosened and broken free therefrom, all without any potentially injurious contact between the probe and the frenulum, and withdrawing said probe from the prepuce.

9. A method as claimed in claim **8,** wherein the limits of the probe movement are approximately the 4:30 o'clock position at one side of the glans and approximately the 7:30 o'clock position at the other side of the glans, the location of the frenulum at the ventral low point of the glans being considered the 6:00 o'clock position.

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