

NEW MODIFICATION OF THE SALIVA COLLECTING CAPSULE

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(Received February 6, 1956. Submitted by Active Member of the Academy of Medical Sciences of the USSR, V. N. Chernigovsky)

Leshli suggested a special capsule to register the salivation during investigation of the secretory activity of the human glands. Independently of him, N. I. Krasnogorsky and A. A. Yushchenko created another, improved capsule. Later the construction of the capsule changed and was perfected by a number of authors. However, even the latest model described, as all the preceding ones, has the substantial defect consisting of the necessity of using a suction apparatus (bulb, pump) to attach the capsule over the orifice of the salivary duct. The suction mechanism requires the supply of an additional suction tube to the capsule through the oral cavity. This complicates the entire saliva-collecting system and introduces excess moments of irritation.

A more perfected modification of the saliva capsule, which avoids the installation of a suction mechanism, is described below.

The usual capsule (Fig. 1) consists of two cups: the inner 4 and outer 3. The inner cup, which communicates with the orifice of the duct, serves to collect and bring out saliva. The outer cup, in which a vacuum is created with a suction bulb or vacuum pump, serves to attach and hold the entire capsule over the orifice of the salivary duct.

In the capsule we worked out (Fig. 2), the outer cup 4 is blind, but its bottom is replaced by a rubber membrane 3, with the help of which the capsule is attached over the salivary duct. For greater security of attachment, the space between the two cups of the capsule is filled with water. By pressing the index finger on the rubber membrane, the water is pressed out of the space between the cups and, pressing the open side of the capsule over the orifice of the salivary duct, the finger is released. Membrane 3 strives to recover its original position, a vacuum is created in cup 5, the capsule becomes attached to the mucosa surrounding the orifice of the duct.

The rubber membrane can be replaced by a hemisphere of another resilient material (for example, polyethylene or celluloid).

In Fig. 3 is shown the structure of our capsule. The capsule is prepared of organic glass. It consists of the following detail (see Fig. 3): a cylinder divided in half by a barrier, a rubber membrane 9, constricting ring 7 for fastening the membrane, vinyl chloride tube 6 (E), to draw out the saliva, and tube 10 which supplies the stimulating agents.

Tube 10 is held in collar 8, which is glued to the constricting ring 7.

Openings 5, communicating with space 1 were drilled in the wall 4 of the capsule along the entire circumference. The space represented by cavity 1 and the openings 5 is filled with water.

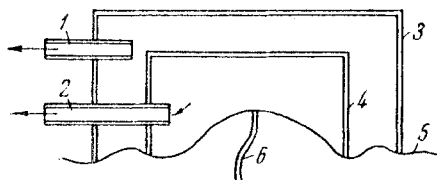


Fig. 1. Diagram of Leshli-Krasnogorsky's capsule.
1) suction; 2) saliva outlet tube; 3) outer cup; 4) inner cup; 5) mucosa; 6) salivary duct.

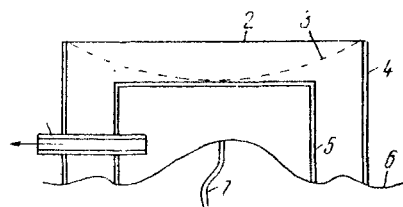


Fig. 2. Diagram of the new capsule.
1) saliva outlet tube; 2) rubber membrane in original position; 3) rubber membrane in working position; 4) outer cup; 5) inner cup; 6) mucosa; 7) salivary duct.

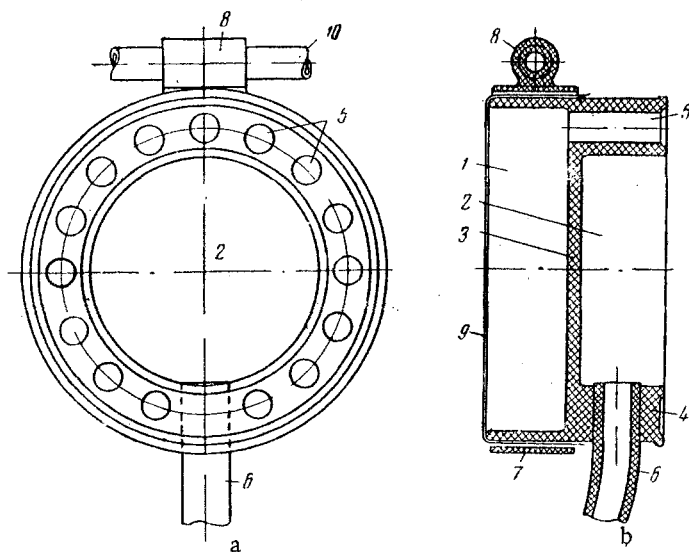


Fig. 3. Construction of the new capsule.
a) front view; b) cross section; 1) suction cavity, 2) saliva-collecting cavity; 3) bottom; 4) wall; 5) opening for suction on the mucosa; 6) saliva outlet tube; 7) constricting ring; 8) fastening for tube supplying stimulants; 9) rubber membrane; 10) tube to supply stimulants.

In several tests of the capsule, it was established that it is not detached from the mucosa during a 2-3 hour period.

By changing the shape of the capsule correspondingly, it can be used to remove saliva from the duct of the sublingual gland.

SUMMARY

A modified saliva-collecting capsule used without an accessory device to hold the capsule to the orifice of salivary duct is described. Suction occurs due to the rubber membrane on the back of the capsule.

LITERATURE CITED

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* In Russian.