BITE-BLOCK

TECHNICAL FIELD

This invention pertains to bite-blocks and more particularly to bite-blocks for patients with intubated endotracheal tubes, and requiring suction catheters and the like.

BACKGROUND ART

In my U.S. Pat. No. 4,198,970, the contents of which are hereby incorporated herein by reference in their entirety, I disclose an airway having a plurality of channels, one for supporting an endotracheal tube in the midline of the throat, and two others for supporting additional tubes for suctioning fluids from both the hypopharynx and the nasopharynx. The airway includes a straight section and an integral curved section, the latter serving to engage and hold down the patient's tongue to prevent the tongue from slipping into the patient's throat. While the airway disclosed in my prior patent is well suited for use with unconscious patients, it is preferably not used for patients recovering consciousness or in a semiconscious state. The reason is that patients emerging from unconsciousness begin to recover their laryngeal reflex which is responsible for the regurgitation of foreign matter from the throat. When an endotracheal tube is in place in a full airway such as that disclosed in my prior patent, the laryngeal reflex tends to regurgitate the lower, curved portion of the airway. Accordingly, when it is observed that a patient fitted with an endotracheal tube is regaining the laryngeal reflex, the airway is removed and a bite-block substituted. The primary difference between a bite-block and oral airway is that a bite-block does not include a portion extending into the throat for holding down the patient's tongue. Consequently, the bite-block, unlike a full airway, does not activate the laryngeal reflex.

The prior art discloses numerous bite-blocks for supporting an endotracheal tube. The simplest form is a rubber block having a central bore. The endotracheal tube is inserted through the bore and the block placed in the patient's mouth such that the patient bites on the block, and not on the tube. The rubber block may be provided with a circumferential groove for the front teeth. An example of such a prior art bite-block is disclosed in U.S. Pat. No. 316,636 issued to Miles, although the patent does not specifically disclose use of the bite-block for holding an intubated endotracheal tube. A similar arrangement particularly intended for receiving a drainage tube for use during dental operations is disclosed in U.S. Pat. No. 3,090,122 issued to Erickson. Essentially similar arrangements are also disclosed in U.S. Pat. Nos. 2,857,911 issued to Bennett, 3,139,088 issued to Galleher, and 4,030,493 issued to Walters et al.

U.S. Pat. No. 2,693,182 issued to Phillips discloses an arrangement essentially similar to those discussed above, except that means are provided for releasably securing the endotracheal tube against unintended axial movement. However, the means disclosed for effecting such securement is relatively complex. In Phillips' later issued U.S. Pat. No. 2,820,457, he discloses an essentially similar arrangement, but in addition provides a plurality of apertures in the face plate for accommodating the insertion of additional apparatus into the mouth. However, apart from the apertures in the face plate, the device does not include any means for positioning such additional apparatus in the mouth.

Like the later Phillips+ patent, U.S. Pat. No. 2,908,269 issued to Cheng discloses a bite-block including means for releasably securing the endotracheal tube against unintended axial displacement. The Cheng device also includes an additional aperture in the face plate for accommodating the insertion of a suction tube or the like. However, also like the Phillips' patent, the device disclosed by Cheng is disadvantageous in that the means for releasably securing the endotracheal tube is relatively complex, and means are not provided for positively positioning the suction tube in the mouth. Furthermore, the Cheng device is retained in place by a strap which extends about the patient's head and neck. Obviously, such strap contributes to patient discomfort.

A further disadvantage of all the prior art bite blocks discussed above is that they are retained in place by the clamping action of the front teeth. Inasmuch as many persons today have one or more caps on their front teeth, such clamping can cause damage to the caps. The advantage of this bite-block is that the biting force is on the posterior teeth, gaining further stabilization of the device in the patient's mouth without putting undue pressure on any existing anterior dental prostheses.

DISCLOSURE OF THE INVENTION

According to the present invention, I have developed a simple, anatomically compatible bite-block capable of simultaneously accommodating an intubated endotracheal tube as well as two suction catheters. The bite-block of the invention includes means for securing the endotracheal tube against axial displacement, and also includes means for positively positioning the suction tubes in the patient's mouth and pharynx. Additionally, it is held in place other than by the incisors, thereby avoiding possible damage to capped front teeth.

The preferred bite-block in accordance with the invention comprises a body having a substantially rectangular cross section. The body is provided with a continuous, U-shaped central channel having an open top, and a pair of open sided U-shaped channels on either side of the central channel. A projection extends laterally from one side of the body, the projection having upper and lower surfaces which are configured for engagement with other than the incisors. The projection is curved to conform with the curve of Spee thereby rendering the bite-block anatomically compatible, and the spacing between the upper and lower surfaces of the projection is such that when the bite-block is in place, contact between the incisors and the bite-block is precluded. A face plate secured to the anterior end of the body engages the patient's mouth for preventing inward displacement of the bite-block. The face plate is provided with apertures communicating with the central and side channels. The face plate can be used to tape the bite-block to the patient's chin for stability when the patient is moved.

In use, the endotracheal tube is disposed in the central channel, and the side channels are used for inserting suction catheters or other instruments. Because the side channels extend the length of the bite-block, they guide the suction catheters into the patient's pharynx thereby facilitating effective suctioning. The preferred bite-block includes a plurality of openings extending between the central channel and each of the side channels. By disposing one or both of the suction catheters in the side channels such that their distal ends are in the vicin-