

BITE BLOCK FOR ORAL PASSAGEWAY**FIELD OF THE INVENTION**

The invention relates to bite blocks, more specifically, bite blocks for intubated patients in which the compressive force resulting from the closure of the jaws is borne by the molars.

BACKGROUND OF THE INVENTION

A device, commonly called a bite block, is used to prevent patients emerging from general anesthesia who are endotracheally intubated, as well as patients who are intubated for respiratory failure, from struggling and biting down on the endotracheal tubes and occluding the airway. The endotracheal tubes are constructed of pliable plastic and can be easily crushed. If this occurs, the patients are exposed to risks of hypoventilation, pulmonary edema, hypoxia, asphyxia, and even death. In addition, patients requiring fiber-optic examination of the respiratory and gastrointestinal tract via the oral route are sometimes noncooperative and can bite down on the endoscopes, causing damage to the scopes and/or their teeth. Further, patients undergoing electro-convulsive therapy or electrical cardioversion often clench their jaws and damage their teeth and other intra-oral structures. The bite block is, therefore, a simple device to prevent jaw closure by providing a physical obstruction between the teeth set in the upper and lower jaws.

A number of U.S. patents are directed to various bite block designs. These include U.S. Pat. No. 4,425,911 which discloses a bite block for patients intubated with endotracheal tubes. The '911 bite block includes a body which has apertures communicating with channels for accommodating intubation of the endotracheal tube and suction catheter.

U.S. Pat. No. 4,495,945 discloses a bite block which is employed in conjunction with endoscopy, bronchoscopy, endotracheal intubation and the like. The bite block includes upper and lower surfaces for contacting teeth, including incisor and front teeth, and carrying the pressure of the same compressively.

However, both patents reflect a major drawback of the prior art. That is, they disclose bite blocks in which non-molar teeth bear some of the compressive forces between the jaws. Prior art bite blocks provide for intra-oral structures other than the molars (such as tongue, palate, incisors, front teeth, etc.) to bear some of the substantial pressures brought to bear in affixing and maintaining a bite block in the patient's mouth. This increases the risk of pressure necrosis to these sensitive structures. For example, the geometry of the incisors is such that they can bear materially less compressive forces without fracture than can the molars. It is the structure and geometry of the molars that make them the strongest oral structures for bearing compressive forces.

Much of the prior art includes devices which are unnecessarily cluttered in design and prevent and/or impede the easy passage of an endotracheal tube after insertion of the bite block. The bite blocks of the prior art are designed to combine the features of a bite block and an oral airway—to elevate the tongue and jaw from the posterior pharynx and provide an airway in an unconscious or semiconscious patient. That is, the oral airways of prior art are designed to include bite blocks. Unfortunately, they carry the disadvantage that the

compressive forces of the jaws are, in material part, borne by the central incisors, which, due to the narrow depth and relative height, are prone to breakage. In addition, compressive force borne by the central incisors results in unfavorable loading conditions on the temporal mandibular joint. Additionally, pressure of the intra-oral terminus of the airway on the tongue and palate can cause patient discomfort, stimulation of the gag reflex with consequent regurgitation, pressure necrosis of the tongue and palate, and cranial nerve injuries.

Thus, it is the several objects and advantages of the novel bite block set forth herein to carry the compressive forces between the molars and provide free access to the oropharynx for suctioning, fiberoptic examination of the gastrointestinal tract and the like, as well as for providing for a bite block that can be easily placed in the patient's mouth before or after direct laryngoscopy.

It is a further object of the present invention to provide a bite block for intubated patients in the operating room or the intensive care unit, which patients require fiberoptic examination of the respiratory or gastrointestinal tracts, electroconvulsive therapy, electrical cardioversion or similar procedures.

It is a further object of the present invention to provide a bite block that lends itself to easy fixation in a patient's mouth and facilitates fixation of an endotracheal tube in the patient's mouth.

SUMMARY OF THE INVENTION

These and other objects are provided for in a bite block constructed of a soft, pliable material which has a U-shaped body having peripheral surfaces preferably curved to conform with the curve of Spree, the anatomical term given to the natural curvature of the dental ridge, having two wedge-shaped members at the terminus thereof. The wedge-shaped members are connected by a substantially-curved rib and have a different thickness along an inner edge thereof than along the outer edge thereof. The wedge members are further tapered to be thinner at the terminus thereof.

BRIEF DESCRIPTION OF THE FIGURES

FIG. 1 is a top elevational view of the bite block of the present invention.

FIG. 2 is a side elevational view through section 2—2 of FIG. 1 of the bite block of the present invention.

FIG. 3 is a front elevational view of the bite block of the present invention.

FIG. 4 is a rear elevational view of the bite block of the present invention with an inward taper.

FIG. 5 is a rear, top, right side perspective view of the bite block of the present invention.

FIG. 6 is a top elevational view of the bite block of the present invention as inserted into the mouth of a patient illustrating the relationship between the position of the bite block and the patient's lower teeth.

FIG. 7 is a front elevational view of the bite block of the present invention as inserted into a patient's mouth illustrating the position of the bite block with respect to the teeth of patient's upper and lower jaw.

FIG. 8 is a side elevation view of the bite block of applicant's present invention inserted into the mouth of a patient showing the relationship between the teeth of the patient and the bite block.