Nasal Cannula Design for Apneic Oxygenation and Improved Compatibility with Bag Valve Mask

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Technology description

A new nasal cannula design for improved compatibility with a bag valve mask.
The design allows for a more easily achievable airtight seal aiding in the effectiveness of the positive pressure ventilation.

Background

A nasal cannula is a way to administer oxygen to patients via small tubing that blows oxygen into the nose via two prongs. There is a growing use of a nasal cannula for apneic oxygenation combined with a bag valve mask during the preoxygenation time period before intubation. When a patient becomes hypoxic too quickly after sedatives and paralytics are administered, it is beneficial to use bag valve masks (BVMs) in addition to nasal cannulas to improve blood oxygen levels and maintain the nasal cannula in place for apneic oxygenation during airway manipulation. A BVM can be used with a nasal cannula in place, but it is difficult to create an adequate seal between mask and patient with the tubing of the nasal cannula in place. A compromised mask-to-face seal can make it difficult to push air into the lungs and maintain safe levels of pressure within a patient’ s respiratory system. Furthermore, a poor seal can also allow flammable anesthetic gas to escape into the operating room, creating a health and safety risk. There exists a present need for a device that provides an effective mask to face seal during positive pressure ventilation in order to improve patient/hospital safety and treatment.

Technology Description

A researcher at the University of New Mexico has developed a new nasal cannula design for improved compatibility with a bag valve mask. The design allows for a more easily achievable airtight seal aiding in the effectiveness of the positive pressure ventilation.

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Application area

Improved mask to face seal in situation needing non-invasive positive pressure ventilation (NIPPV)
Improved safety
Allows for a nasal cannula to be placed before the intubation and apneic period rather than during this time when it may not be safe to interrupt a patient’ s oxygen intake
Allows a BMV to be combined with NIPPV systems
Compatible with multiple sizes of tubes

Institution

The University of New Mexico

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