Innovation in Feeding Tube Visualization

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Technology description

A cordless, portable, lightweight, feeding tube system with sophisticated video tracking capabilities. With the use of 3D visualization, there will be an increase in the success rate of positioning the nasoduodenal feeding tube. An additional aspect of this innovation is that it will allow the user to view a virtual model of the patient’ s abdomen via device/screen (i.e. LCD monitor, projection). This new feeding tube design will also reduce the patient’ s exposure to ionizing radiation.

Background

When a patient is submitted to the intensive care unit (ICU), their recovery is often dependent on the enteral delivery of nutrients and medicine. With the use of a tube feeding, physicians can administer vital nutrients or drugs directly to the patient’ s stomach or small intestine. These feeding tubes are inserted through the nasal cavity and positioned manually into the small intestine. With the patient in critical condition, timely and accurate placement of these tubes is of utmost importance. Unfortunately, insertion methods used currently are time-consuming and involve exposing the patient to harmful ionizing radiation that is used to verify the position of the tube. Products on the market today, that attempt to improve the efficiency of feeding tube insertion, either require specialized feeding tubes or have limited visualization capabilities of the feeding tube with respect to the patient’ s anatomy. There exists a present market need for a more effective system that provides greater visualization capabilities and significantly improves the success rate of properly inserting feeding tubes.

Technology Description

Researchers at the University of New Mexico propose a cordless, portable, lightweight, feeding tube system with sophisticated video tracking capabilities. With the use of 3D visualization, there will be an increase in the success rate of positioning the nasoduodenal feeding tube. An additional aspect of this innovation is that it will allow the user to view a virtual model of the patient’ s abdomen via device/screen (i.e. LCD monitor, projection). This new feeding tube design will also reduce the patient’ s exposure to ionizing radiation.

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Application area

Cordless, portable and lightweight
Utilizes highly sophisticated video tracking software
Expected to significantly improve the success rate of properly inserting nasogastric feeding tube at a very low cost
With minor modifications, it could be applicable to image-guided surgeries and digitizing the 3D morphology of a wide variety of objects
Easy integration with existing methods
Cost effective and easy implementation
Provides 3D visualization of the feeding tube with respect to the patient's anatomy

Institution

The University of New Mexico

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