Evaluation of microleakage due to cuffs of endotracheal tubes during positive end-expiratory pressure ventilation.

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摘要

Abstract

Mallinkrodt tubes (internal diameter 8.0 mm) with high residual volume and low pressure cuffs were used to evaluate the influence of positive end-expiratory pressure (PEEP) on leakage from cuffed endotracheal tubes. A thin smooth epidural catheter (Portex) was placed immediately above the cuff to monitor visually whether methylene blue dye solution (2-3 ml) passed through the cuff and stained the trachea. One hundred male patients undergoing elective orthopedic surgical procedures were randomly divided into five groups: a control group and groups using 2.5, 5.0, 7.5, and 10 cm H2O of PEEP during nitrous oxide-oxygen-isoflurane anesthesia. The cuff pressure was set to 25 cm H2O in each group. The cuff pressure was recalibrated and evidence of staining below the cuff was sought with a fiberscope every twenty minutes for a total of three times. Leakage increased with PEEP level but the amount was not statistically significant and the difference between groups was not significant.