

Detection of oesophageal intubations using cuff pressures in a pig trachea–oesophagus model

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摘要

Abstract

BACKGROUND: The cuff pressures may be different in oesophageal and tracheal intubations. We conducted a study to evaluate if cuff pressures of endotracheal tubes (ETTs) could provide information to distinguish tracheal or oesophageal intubations in a pig trachea-oesophagus model. **METHODS:** In each preparation of pig trachea-oesophagus model, the trachea and the oesophagus were intubated separately with a cuffed ETT, and the cuff pressures were measured after each 1 ml increment of air (1-10 ml) during inflation. The cuff pressures and the pressure-volume relationships in both intubations were compared. **RESULTS:** The cuff pressures of oesophageal intubations were significantly higher than those of tracheal intubations in all comparisons from 1 to 10 ml of cuff volumes ($P < 0.05$). The cuff pressure-volume curve was steeper in the oesophageal intubation group, and the difference between the two curves was the largest when the cuff volume was 4-5 ml. **CONCLUSIONS:** We conclude that the cuff pressures may be useful in detecting oesophageal intubations. This method is faster than other confirmation measures as it can detect inadvertent oesophageal intubations at the time of inflating the cuffs