

Dissemination of Respiratory Secretions During Tracheal Tube Suctioning in an Intensive Care Unit

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Abstract

Most intensive care patients require frequent tracheal toilet, a procedure usually performed by suctioning the tracheal tube. Such procedures often result in the production and dissemination of droplets. We measured the distance visible droplets disseminated during tracheal tube suctioning of patients in an adult surgical intensive care unit. Fifty consecutive suction procedures in 14 patients intubated with a cuffed tracheal tube were investigated. Visible droplets were scattered over a mean distance of 60 ± 39 cm (range 25 to 168 cm) from the tracheal tube. Blood agar culture plates were placed at three fixed points from the tracheal tube to identify organisms resulting from environmental contamination (control plates). This was repeated during suctioning procedures (study plates) to look into the occurrence of bacteriological cultures that differ from the control plates.

Nine of the 14 patients had tracheal tube aspirate cultures done as part of their work-up for sepsis. In more than 30% of the suctioning procedures on these 9 patients, study plates grew bacteria that were similar to those present in their tracheal tube aspirates.

In view of these observations, greater care should be taken to avoid contamination of the patient's immediate environment during tracheal tube suctioning and in the design of the intensive care unit.

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