

Percutaneous tracheostomy: A comparison of PercuTwist and multi-dilatators techniques

The Editor,

Tracheostomy is one of the invasive procedures frequently performed in order to continue the air passage in intensive care patients who need mechanical ventilation for a protracted period of time. The latest method is the single-step (PercuTwist) technique applied with the use of a screw-like dilator.^[1,2] The purpose of this letter is to present the early complication rate and safety of multi-dilatational percutaneous tracheostomy (Ciaglia) with the single-step rotating dilatation tracheostomy procedure.

Records of 100 patients were evaluated, who randomly underwent either multi-dilatational percutaneous tracheostomy (Group C, $n = 50$) or single-step rotating dilatation tracheostomy (Group PT, $n = 50$), under the guide of fiberoptic bronchoscope (Karl Storz 11001 RD). Preoperative and postoperative complications were examined. Seventy hours after the tracheostomy procedure, wound culture samples were taken for stomal infection. All procedures were carried out by intensive care specialists (anaesthesiologist) in the ICU. Statistical analyses were performed using the Chi-squared test and Student's *t*-test.

No significant difference was detected between the groups in terms of the patients' demographics [Table 1]. Duration of the procedure was determined as 2.9 ± 0.7 minute in Group PT and 4.1 ± 0.5 minute in Group C ($P < 0.05$). The rate of complications between the groups was not statistically significant [Table 2]. Wound cultures were positive in 27% of patients in Group PT and 18% in Group C. There was no statistically significant difference in the wound cultures of the two groups ($P = 0.33$). Stomal infection was not observed in both the study groups.

Percutaneous tracheostomy techniques are commonly used procedures in intensive care units. It can be concluded that percutaneous techniques were found safe in tracheostomy procedure. Yet, differences have been observed among percutaneous techniques in terms of complication rates, and it has been found that more serious and major complications arise in

Table 1: Patient demographics

	Group PT ($n = 50$)	Group C ($n = 50$)
Sex, M/F	23/27	24/26
Age/year	60 ± 17.9	66 ± 15.7
APACHE III	44.6 ± 18.8	38.1 ± 14.2
SOFA	8.4 ± 4.8	6.8 ± 4.7
Duration of intubation in day	7.1 ± 2.7	6.1 ± 2.8

APACHE: Acute Physiology and Chronic Health Evaluation
SOFA: Severity of Organ Failure Assessment

Table 2: Preoperative complications

	Group PT ($n = 50$)	Group C ($n = 50$)
Minor bleeding (20-100 ml)	2	2
Major bleeding (>100 ml)	-	-
Subcutaneous emphysema	-	3
Pneumothorax	-	2
Posterior tracheal wall perforation	-	-
Oxygen desaturation	-	-

sequential techniques as compared to single-step techniques.^[3,4] Although single-step rotating dilatation tracheostomy is a newer procedure, we believe that PercuTwist method is a promising one in that it is easy and simple to implement, and it causes fewer early complications when compared with Ciaglia technique.

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