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# The Light-Guided Tracheal Intubation with Parker Flex-Tip Tube® and Upper Airway Complications

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**Background** : Lightwands such as Trachlight® (TL) are useful in the management of tracheal intubation for difficult airways and as a routine technique in general anesthesia. However, being a TL-guided technique with no direct visualization of the upper airway structures, its use is associated with the potential risk of injury to the larynx. The Parker Flex-Tip® tube (FT), which is designed to enable smooth and atraumatic tracheal intubation, reportedly solves this problem. The purpose of this study is to compare TL-guided intubation with two different tubes in terms of the ease of passage through the glottis and the incidence of laryngeal complications. The two tubes studied were FT, which is designed with a hemispherical bevel and the leading edge in the midline, and conventional Portex® tracheal tubes (PT), with a standard bevel and the leading edge on the right side.

**Methods** : Forty patients(ASA physical status I-II) who were scheduled for general anesthesia using tracheal intubation were randomly assigned into two groups of 20 each: FT and PT. FT group patients received a 10.0-mm outer diameter tube, while PT group patients were intubated with a 10.3-mm outer diameter tube.

The two groups were compared with regard to the time (in sec) required to perform endotracheal intubation, resistance to endotracheal tube passage through the vocal cords, frequency of tube impingement on laryngeal structures, and incidence of postoperative sore throat and hoarseness. A probability value of <0.05 was considered to be statistically significant.

**Results** : The FT group had a lower incidence of resistance to endotracheal tube insertion (55%: 20%) (P<0.05) and postoperative hoarseness (30%: 5%) (P<0.05) as compared to the PT group. There were no significant inter-group differences in anesthesia time, intubation time, frequency of impingement, or postoperative sore throat (Table).[table1] **Conclusion** : The hemispherical bevel and midline position of the leading edge of the FT allows gentle skimming of the tube along the tissue of the throat, enabling smooth glottic passage. Therefore, during TL-guided intubation, use of the FT reduces resistance to tracheal tube insertion, probably resulting in the reduced incidence of postoperative hoarseness when compared to a PT. Lack of difference in the frequency of impingement among the two groups probably resulted in the absence of differences in the incidence of sore throat resulting from laryngeal damage.

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Table. Endotracheal intubation results

| | FT group (n=20) | PT group (n=20) | p value |
|---|---|---|---|
| Operation time (min) | 260 ± 57 | 281 ± 83 | 0.6011 |
| Intubation time (sec) | 7.5 ± 2.3 | 9.4 ± 3.4 | 0.2657 |
| Frequency of impingiment (times) | 2.3 ± 1.9 | 3.1 ± 2.5 | 0.5765 |
| Resistance to tube insertion | 4/20 (20%) | 11/20 (55%) | 0.0241 |
| Postoperative sore throat | 6/20 (30%) | 9/20 (45%) | 0.2572 |
| Postoperative hoarseness | 1/20 (5%) | 6/20 (30%) | 0.0457 |

FT: Parker Flex-Tip ® tube; PT: Portex ® tracheal tube. Data is expressed as mean ± SD or numbers of patients.