

Comparison of disposable and metallic reusable Miller blades for tracheal intubation in children

Regarding anesthesiologist satisfaction and duration of laryngoscopy, laryngoscopy with a disposable blade was considered equal to that with a reusable blade in pediatric patients undergoing elective surgery.

Use of a disposable versus a reusable laryngoscope blade can prevent cross-contamination between patients.

Objective

- To compare the use of disposable and reusable laryngoscope blades in pediatric patients

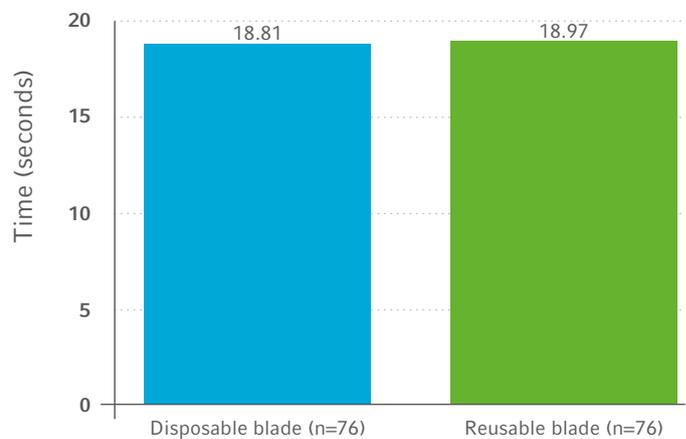
Methods

- This was a prospective, randomized trial that included children (aged 3–12 years) undergoing elective surgery that required laryngoscopy to facilitate tracheal intubation
 - Patients were American Society of Anesthesiologists physical status 1 and 2 and had apparently normal airways
- Patients were randomized to undergo laryngoscopy using a plastic disposable or a metallic reusable blade
 - The size of the blade was chosen based on the preference of the anesthesiologist and on the condition of the patient
- Outcomes of interest included
 - Duration of laryngoscopy and tracheal intubation
 - View of the glottis
 - Brightness of the laryngoscope field
 - Anesthesiologist satisfaction
 - Successful intubation

Results

- Overall, 76 patients were randomized to undergo laryngoscopy with a disposable blade and 76 patients were randomized to undergo laryngoscopy with a reusable blade
 - The demographic and anesthetic characteristics of patients in the two groups were comparable

- The mean age for the patients in the Disposable blade group was 61.5 (± 26.8) months and the mean age for patients in the Metallic blade group was 65.4 (± 32.6) months. The mean body weight was 19.1 (± 8.9) and 18.4 (± 7.8) for the patients in the disposable blade and metallic blade groups, respectively.
- Successful intubation was achieved in all patients
- There was a significant between-group difference in the proportion of patients with a glottic view of I or II
 - A glottic view of I (most of the glottis) was observed in 50% of patients in the disposable blade group and in 66% of patients in the reusable blade group
 - A glottic view of II (only the posterior part of the glottis) was observed in 49% of patients in the disposable blade group and in 32% of patients in the reusable blade group. There were no significant between-group difference in the duration of laryngoscopy and tracheal intubation (Figure 1)



† Time from inserting the laryngoscope into the oral cavity until passage of the tracheal tube via the vocal cords

Figure 1. Duration of laryngoscopy and tracheal intubation† with a disposable and a reusable laryngoscope blade

- A significantly ($p < 0.01$) brighter field was achieved with the reusable blade than with the disposable blade
- There was no significant between-group difference in self-reported anesthesiologist satisfaction ($p = 0.1$) (Figure 2)

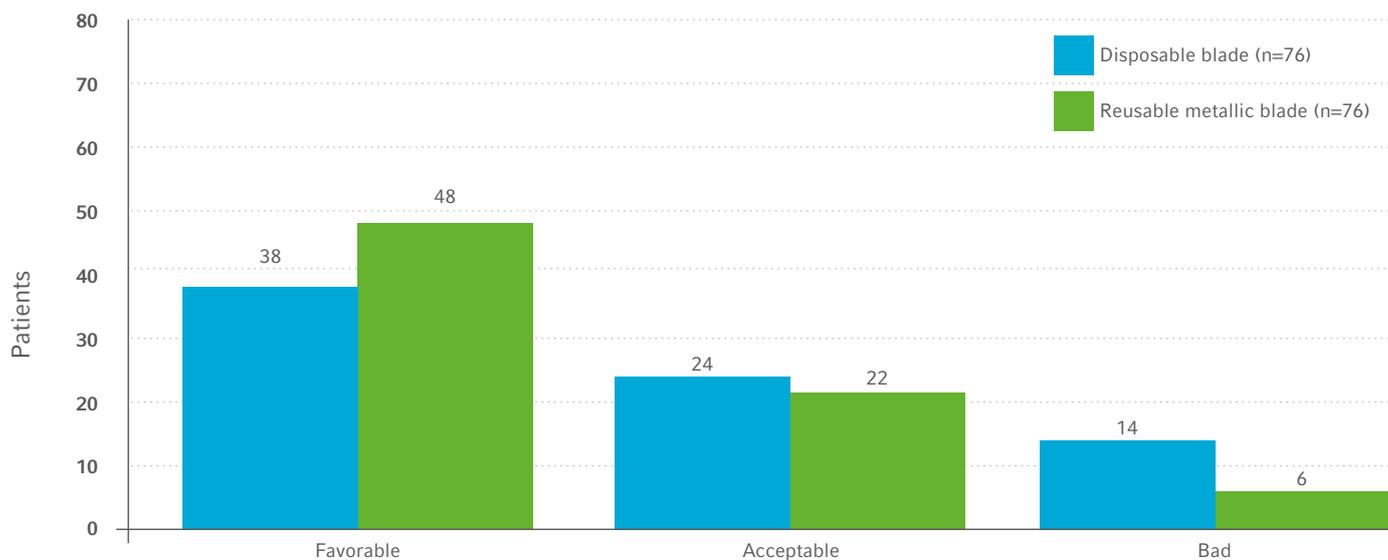


Figure 2. Self-reported anesthesiologist satisfaction with a disposable and a reusable laryngoscope blade

Conclusions

- Laryngoscopy with the Topster Miller single-use, disposable blade was considered equal to that with a reusable blade in pediatric patients undergoing elective surgery requiring tracheal intubation, and that every new disposable laryngoscope blade should be compared with metallic reusable blades before routine clinical use