ABSTRACT

The incidence of intubation-related vocal cord palsy in Otolaryngology department is 0.2% considering higher than literature reported. Risk factors are same as literature, including prolonged endotracheal cuff inflation time, and neck hyperextension position. We need to ensure cuff is below cricothyroid cartilage, check intra-pressure is minimum required to prevent a gas leak and avoiding excessive ETT movement to prevent the complication occurred.

INTRODUCTION

During the period between January, 2010 and December, 2011, 2511 patient received general anesthesia by intubation in our department between January, 2010 and December, 2011. Gender, Age, Diagnosis, Duration of induction, size of endotracheal tube, fix position of tube and mode of intubation (trach or nasal) were all recorded. The endotracheal tube used in all patients was high-volume and low-pressure cuff, made from Pharmaplast Ltd, Redditch, UK (Fig 1). We survey patient presenting with postoperative hoarseness with laryngoscopy. The patients complicated with vocal palsy was included in this study. We follow up these cases till vocal cord palsy got recovery. Recovery time is also recorded.

METHODS AND MATERIALS

A retrospective study of 211 cases that underwent general anesthesia by intubation in our department between January, 2010 and December, 2011. Gender, Age, Diagnosis, Duration of induction, size of endotracheal tube, fix position of tube and mode of intubation (trach or nasal) were all recorded. The endotracheal tube used in all patients was high-volume and low-pressure cuff, made from Pharmaplast Ltd, Redditch, UK (Fig 1). We survey patient presenting with postoperative hoarseness with laryngoscopy. The patients complicated with vocal palsy was included in this study. We follow up these cases till vocal cord palsy got recovery. Recovery time is also recorded.

RESULTS

The present study demonstrated that intubation-related vocal cord palsy in our Otolaryngology department occurred with a higher incidence (0.2%) than literature reported (0.1%). Furthermore, we demonstrated that prolonged endotracheal cuff inflation time and neck hyperextension position were the bases for the higher incidence.

The etiologic mechanisms of postoperative VCP generally related to prolonged intubation time and neck hyperextension position. Several risk factors of intubation-related vocal cord palsy have been described in the literature, including prolonged endotracheal cuff inflation time, neck hyperextension position, age, BMI, hypertension, obesity, diabetes mellitus, and patients with history of hypothyroidism.

DISCUSSION

As the anterior branch of the recurrent laryngeal nerve exclusively innervates the adductors, bilateral paralysis of the branch will produce complete vocal fold paralysis. The mechanism of vocal cord paralysis is all less than 10 weeks in 4 cases except one case was less than 6 weeks and another 3 cases was less than 8 weeks. Incidence of postoperative vocal palsy in our department is around 0.2% (6/2511). The characteristics of the 6 studied patients (5 males and 1 female) are summarized in Table 1. Mean age of these cases is 56.0 year-old (47~67 year-old). Duration of intubation time is varied from 45 minutes to 144 hours minutes. Intubation time of 3 cases is longer than 20 hours; intubation time of the other 3 cases is shorter than 3 hours. 5 cases had unilateral vocal cord palsy and one case had bilateral vocal cord palsy. All 6 patients had neck hyperextension position during whole operation period. Recovery time from vocal cord palsy is all less than 10 weeks in 4 cases except one case was less than 6 weeks and another 3 cases was shorter than 3 hours. Incidence of intubation-related vocal palsy is around 0.2% in Otolaryngology department, considering higher than literature.

Conclusion

The incidence of intubation-related vocal cord palsy in Otolaryngology department is 0.2% considering higher than literature reported. Risk factors are same as literature, including prolonged endotracheal cuff inflation time, and neck hyperextension position. The incidence of postoperative vocal palsy in our department is around 0.2% (6/2511). Risk factors of intubation-related vocal cord palsy are: prolonged intubation time, neck hyperextension position, age, BMI, hypertension, obesity, diabetes mellitus, and patients with history of hypothyroidism.

REFERENCES

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Figure 1. High-volume and low-pressure cuff, Pharmaplast Ltd, Redditch, UK

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Table 1. Characteristics in Patients With Vocal Cord Paralysis

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<tr>
<th>Age</th>
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<th>Diagnosis</th>
<th>Intubation Time</th>
<th>Recovery Time</th>
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