Insertion of the ProSeal™ laryngeal mask airway with the 90° rotation technique

Fu S. Xue, MD · Qiang Wang, MD ·
Yu Jing Yuan, MD · Jun Xiong, MD

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To the Editor,

We were greatly interested in the recent article by Jeon *et al.*¹ that described insertion of the ProSeal™ laryngeal mask airway (PLMA) with the 90° rotation technique. In this study, an extension of their previous work,² the authors provided a simple and useful insertion technique for the PLMA that has a high success rate and a low incidence of pharyngeal mucosal trauma. However, several design aspects of this study should be clarified.

The evaluation criteria for an effective airway differ from the previous study. In the former article, they evaluated gas leakage and the lowest limitation of peak airway pressure during manual ventilation.² In their most recent study, the authors considered normal thoracoabdominal movement and capnography to indicate proper placement, with the possibility that obvious gas leakage was present. Also, a failed insertion attempt was not defined clearly. A three-point ventilation score that Keller *et al.* described³ is a useful method to assess the quality of ventilation through the PLMA. Using this score, inadequate quality of ventilation with minimal chest expansion and considerable gas leakage is often considered as the failed insertion attempt.

The orogastric tube placement through the PLMA drainage tube was not performed. In fact, the presence of a drainage tube to provide a channel for regurgitated fluid and placement of an orogastric tube is one of the important design modifications of this device. Also, passage of a lubricated orogastric tube via the drainage tube and aspiration of gastric fluid is an essential test to determine

correct placement.⁴ Difficult placement of the orogastric tube often suggests obstruction of the drainage tube caused, for example, by the device folding over. This situation may put the patient at increased risk of gastric insufflation and aspiration during airway maintenance with the PLMA.

In this study, the postoperative sore throat was assessed as a side effect of the two insertion methods. However, the authors did not compare the use of opioid drugs between groups during anesthesia maintenance. Also, standardization of postoperative analgesia should be a crucial component of study design.⁵ The type and dose of analgesia and the timing of its administration in relation to the assessment of sore throat should have been described. In the absence of a comparison of opioid dosages during anesthesia and a postoperative analgesic protocol, the secondary outcome findings and their subsequent conclusions should be interpreted with caution, as they may have been determined using incomplete methodology.

Conflicts of interest The authors have no financial arrangement with the makers of the ProSeal™ laryngeal mask airway.

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F. S. Xue, MD (✉) · Q. Wang, MD · Y. J. Yuan, MD ·
J. Xiong, MD
Plastic Surgery Hospital, Chinese Academy of Medical Sciences
and Peking Union Medical College, Beijing, China
e-mail: fruitxue@yahoo.com.cn

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Reply

We appreciate Dr. Xue's great concern and delicate comments regarding our investigation.¹

Indeed, there are many valid ways to evaluate the correct positioning of the ProSeal™ laryngeal mask airway (PLMA). In this report, the definition of an effective airway differed slightly from our previous study.² However, the essential factor common in both studies was the presence of a square-shaped capnogram.

We did not insert an orogastric tube in all subjects because this procedure is not performed routinely in most clinical situations. Of course, the orogastric tube passage is a valuable method to determine the correct placement of the PLMA.³ We consider a normal square-wave capnogram as being decisive proof of the correct positioning of the PLMA. We recognized as a limitation of our study that we did not evaluate the position of the PLMA with a fiberoptic bronchoscope.

We fully agree that the use of opioid drugs confounds the evaluation of postoperative pain. In our study, postoperative sore throat was assessed in the postanesthesia care unit, and to avoid bias, an analgesic was administered

only after assessment. Both groups received the equivalent dose of alfentanil ($5 \mu\text{g}\cdot\text{kg}^{-1}$) intraoperatively. Also, the evaluation of sore throat might be modified by intense surgical pain. For this reason, only minor surgical procedures of short duration were included in our study.

Competing interests None declared.

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Young-Tae Jeon, MD, PhD

Hyo Seok Na, MD

Sang-Hyun Park, MD

Ah-Young Oh, MD, PhD

Mi-Ja Yun, MD, PhD

Jin Hee Kim, MD, PhD

Jung-Won Hwang, MD, PhD

Seoul National University Bundang Hospital, Kyonggi-do, South Korea

Hee-Pyoung Park, MD, PhD

Seoul National University Hospital, Seoul, South Korea