



# Clinical Communications: Adult

## TRUVIEW VIDEO LARYNGOSCOPE FOR LATERAL POSITION INTUBATION IN A PATIENT WITH GIANT PRESACRAL NEUROFIBROMA

Neha Singh, MD, Parnandi Bhaskar Rao, MD, PDCC, FIPM, and Rajeev Lochan Samal, MD

Department of Anaesthesiology and Critical Care, All India Institute of Medical Sciences, Bhubaneswar, Odisha, India

Reprint Address: Neha Singh, MD, Department of Anaesthesiology and Critical Care, All India Institute of Medical Sciences, Bhubaneswar 751019, Odisha, India

**Abstract—Background:** Most airway management is done in the supine position, but some situations may require airway management in the lateral position. Most emergency physicians and anesthesiologists are not comfortable with intubation in the lateral position. **Case Report:** We present a patient with giant presacral neurofibroma and the use of video laryngoscope for airway management in the lateral position. To the best of our knowledge, we are the first to utilize a video laryngoscope for lateral intubation. **Why Should an Emergency Physician Be Aware of This?:** An emergency physician is the first contact for many patients when immediate airway management is mandatory. Lateral position for airway management is not popular among anesthesiologists and emergency physicians, but the patient's condition and pathology may demand this approach. Airway management in the lateral position can be considered part of airway management training. © 2019 Published by Elsevier Inc.

**Keywords—**airway management; palliative surgery; tracheal intubation; TruView video-laryngoscope

### INTRODUCTION

In most cases, the airway is secured in the supine position, but the clinician may need to perform endotracheal intubation in the lateral position due to patient restrictions. Here we report the airway management in the lateral position in a patient with giant presacral neurofibroma.

Written informed consent from the patient was obtained before reporting the case.

### CASE REPORT

A 35-year-old man (height 152 cm, weight 52 kg), American Society of Anesthesiologists physical status II, with a known case of neurofibromatosis for the last 10 years, presented with history of progressively increasing presacral swelling that has increased to its present size (13.7 × 16.7 cm) in the previous 6 months. The patient was bedridden and not able to lie supine for the last 6 months. Preoperative evaluation and recent investigations were within normal limits and he was scheduled for debulking surgery in prone position.

Due to the size and location of the mass, the patient was not able to lie down in supine position. Therefore, we planned to go ahead with general anesthesia with intubation in the right lateral position, as the patient was more comfortable in that position and there was a possible risk of mass rupture during postural alterations. The procedure and its associated risks were explained to the patient and consent was obtained.

Standard fasting guidelines were followed and the patient was premedicated with oral lorazepam (0.04 mg/kg) and ranitidine (150 mg) the night before and 2 h prior to anesthesia. Standard monitoring protocols were followed and venous access was established using 18-gauge

cannula on the dorsum of the non-dominant hand. Difficult airway cart was kept ready.

The operator was standing at head end of the patient. Patient's head was supported by a pillow. TruView PCD™-R (Truphatek International Ltd., Israel) was kept over a cart with monitor. Premedication with glycopyrrolate injection 0.01 mg/kg, fentanyl injection 2 µg/kg, and midazolam injection 0.05 mg/kg was done, followed by induction with propofol injection 2 mg/kg i.v. After ensuring adequacy of ventilation with 100% oxygen, succinylcholine injection 2 mg/kg (i.v) was given. A video laryngoscope with size 4 blade was introduced in right lateral position and instead of lifting the epiglottis, only smooth rocking movement was done to view the glottis opening. This is an advantage of video laryngoscopes over traditional direct laryngoscopes. Trachea was intubated with a size 8.5 cuffed endotracheal tube (Figure 1). After confirmation of the proper placement of the tube with auscultation and capnography, the tube was fixed in place and patient was turned prone (Figure 2). One person was dedicated to provide support to the mass throughout the procedure. The rest of the intra-



**Figure 1. Video laryngoscopy image with patient position.**



**Figure 2. Prone position for surgery.**

operative period was uneventful. At the end of the surgery, after 6 h, neuromuscular blockade was reversed with neostigmine 0.05 mg/kg and glycopyrrolate 0.2 mg/1 mg of neostigmine. Trachea was extubated in lateral position when the patient was fully awake and he was transferred to the intensive care unit for monitoring. The patient was discharged on postoperative day 7.

## DISCUSSION

Palliative surgical procedures are usually noninvasive, but even invasive treatment can be considered for symptomatic relief (1,2). Airway management in a non-conventional position may be needed with patients who cannot lie supine. Intubation in lateral position using an intubating laryngeal mask airway (LMA) may take a similar amount of time as in supine position (3). There is more risk of failure to secure the airway in any position other than supine, leading to use of a rescue device like LMA (4).

We used propofol and succinylcholine for rapid sequence intubation of this patient in the lateral position and the patient was turned prone for the surgery. Awake extubation was done in lateral position. The airway characteristics of the same patient in lateral position will be different from those in supine position. Mask ventilation may be more difficult, but during laryngoscopy, the tongue and epiglottis are unlikely to obstruct the view, as these structures are shifted laterally rather than posteriorly. Secretions will trickle down rather than getting collected in the oropharynx. Suction will be easier in the lateral position compared to supine. Functional residual capacity is increased in lateral position (5).

Lateral position provides better airway view in anesthetized or sedated spontaneously breathing children (6). This position widens the upper airway of a sedated spontaneously healthy child and decreases upper airway obstruction (7). Lateral position may be helpful in other clinical situations, for example, large cervical or thoracic

meningomyelocele or in cystic hygroma and abscesses (8). The left lateral position is preferred to the right for intubation, but we chose right lateral position due to the risk of rupture of swelling during position change (9). In a recent meta-analysis, first-pass intubations with video laryngoscopy were more common compared with direct laryngoscopy among trainees and less-experienced clinicians (10).

To the best of our knowledge, we are the first to utilize a video laryngoscope for lateral intubation. We suggest that tracheal intubation in the lateral position should be a part of training in the management of the difficult airway. In addition, it is suggested that emergency departments organize training sessions on use of videolaryngoscope in the emergency department.

#### **WHY SHOULD AN EMERGENCY PHYSICIAN BE AWARE OF THIS?**

An emergency physician is the first contact for many patients when immediate airway management is mandatory. Airway management in the lateral position is not popular, but the patient's condition and pathology may demand this approach. Airway management in the lateral position can be considered as part of airway management training.

#### **REFERENCES**

1. Easson AM, Asch M, Swallow CJ. Palliative general surgical procedures. *Surg Oncol Clin N Am* 2001;10:161–84.
2. Field MJ, Cassell CK. *Approaching Death—Improving Care at the End of Life*. Washington, DC: National Academy Press; 1997.
3. Komatsu R, Kamata K, You J, Sessler DI, Kasuya Y. Airway scope for tracheal intubation in the lateral position. *Anesth Analg* 2011; 112:868–74.
4. McCaul CL, Harney D, Ryan M, Moran C, Kavanagh BP, Boylan JF. Airway management in the lateral position: a randomized controlled trial. *Anesth Analg* 2005;101:1221–5.
5. von Ungern-Sternberg BS, Regli A, Frei FJ, Hammer J, Jordi Ritz EM, Erb TO. Decrease in functional residual capacity and ventilation homogeneity after neuromuscular blockade in anaesthetized pre-school children in lateral position. *Paediatr Anaesth* 2007; 17:841–5.
6. Goldmann K. Recent developments in airway management of the paediatric patient. *Curr Opin Anaesthesiol* 2006;19:278–84.
7. Litman RS, Wake N, Chan LM, et al. Effect of lateral positioning on upper airway size and morphology in sedated children. *Anaesthesiology* 2005;103:484–8.
8. Singh N, Rao PB, Ambesh SP, Gupta D. Anaesthetic management of a giant encephalocele—size does matter. *Pediatr Neurosurg* 2012;48:249–52.
9. Adachi YU, Satomoto M, Higuchi H. Fiberoptic orotracheal intubation in the left semi lateral position. *Anesth Analg* 2002;94:477–8.
10. Arulkumaran N, Lowe J, Ions R, Mendoza M, Bennett V, Dunser MW. Videolaryngoscopy versus direct laryngoscopy for emergency orotracheal intubation outside the operating room: a systematic review and meta-analysis. *Br J Anaesth* 2018;120: 712–24.