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Case report

Tracheal intubation in the prone position: Another way to access the airway[☆]

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ABSTRACT

Introduction: Prone position of patients during anaesthesia is required to provide operative access for a wide variety of surgical emergencies as elective procedures.

Airway management in this position is a challenge for the anaesthetist because it creates obstacles that impair the ability to achieve endotracheal intubation by direct laryngoscopy. **Case report:** A 56-year-old male patient admitted to the emergency service with penetrating neck trauma caused by a 12 cm knife protruding from the left posterior aspect of his neck between T2–T3. He had reduced sensation in the left part of his body below C5, although strength and movements were normal. Tracheal intubation in prone position was accomplished satisfactorily on the first attempt.

Conclusion: Endotracheal intubation using conventional laryngoscopy can be accomplished safely and effectively in a patient in prone position.

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Intubación orotraqueal en prono: otra manera para acceder a la vía aérea

RESUMEN

Introducción: El paciente en posición en prono es necesario para una gran variedad de procedimientos quirúrgicos tanto electivos como urgentes.

El manejo de la vía aérea en esta posición es todo un reto para el anestesiólogo ya que genera por se obstáculos en su manipulación que alteran las maniobras usualmente utilizadas para intubación por laringoscopia directa.

Palabras clave:

Anestesia general
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Presentación del caso: Paciente masculino de 56 años quien ingresa a urgencias con un cuchillo de 12 cm enclavado en la parte superior izquierda de su espalda a nivel de T2-T3 con hipoestesia en el hemicuerpo izquierdo por debajo del nivel sensitivo C5, aunque con fuerza muscular y movimientos conservados. Se decide intubación orotraqueal con el paciente en posición prono con un abordaje satisfactorio exitoso en el primer intento.

Conclusión: Es posible realizar la intubación endotraqueal de un paciente en posición prono con laringoscopia convencional de manera segura y efectiva.

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Introduction

Placing the patient in prone position (PP) is necessary for a wide variety of surgical procedures,¹ both elective as well as urgent. Airway management in this position is very challenging for the anaesthetist because it impairs the usual manoeuvres for intubation by direct laryngoscopy, thus increasing the risk of injury to the cervical spine and making ventilation difficult.²⁻⁵

Although there are a few studies and case reports on tracheal intubation in the prone position (TIPP) published in the literature, the technique has been poorly described. In our country, this approach was advocated in the 1960s as an alternative technique by a team of Bogotá anaesthetists under the leadership of doctor Fernando Flórez Burgos, although there are no publications to support this statement.

A 56 year-old male patient, 80 kg, was admitted to the emergency service in PP with a 12 cm knife protruding from his left upper back (Fig. 1). On assessment, he was alert, haemodynamically stable and breathing spontaneously. He had left hypoesthesia below the C5 sensory level, although muscle strength and movements were preserved. He had last had food intake 6 h before sustaining the injury.

Computed axial tomography imaging studies (Fig. 2) were performed in PP. Pneumothorax was ruled out and the exact position of the knife blade was determined. The knife had entered the spinal canal between the left pedicle of the second thoracic vertebra (T2) and close to the posterior facet of the third thoracic vertebra (T3).

Pre-anaesthesia assessment was within normal limits. Airway was normal (Mallampati II, mouth opening >3 cm, thyromental distance >6.5 cm, sternomental distance >12.5 cm). Non-invasive monitoring was initiated on arrival at the operating room.

Given the impossibility to place the patient in supine position (SP) because of the wound type, TIPP under general anaesthesia (GA) was planned. No fibreoptic bronchoscopy was available at the time so a laryngeal mask was prepared in case of intubation failure. The patient was pre-oxygenated with 100% oxygen in PP for 3 min (Figs. 3 and 4).

Before intubation, lidocaine spray was instilled in the oropharynx in order to diminish airway reflexes and improve intubation conditions. Once immobilised, the patient was

moved up and the table headrest was removed, maintaining manual alignment of the head and neck with the help of a second anaesthetist (Fig. 5).

Intubation was performed by two anaesthetists. While the first held the head and neck to ensure alignment, the second, experienced in TIPP, stood on the left side of the patient and performed the intubation manoeuvre while holding the head. Opening the patient's mouth with the right hand, he performed laryngoscopy with his left hand. Because of the effect of gravity in PP, the mouth, the jaw and the tongue protrude, making laryngoscopy and vocal cord visualisation easier.

Anaesthesia induction was performed using propofol 1.8 mg/kg, fentanyl 3 mcg/kg and succinylcholine 1.25 mg/kg. Adequate patient ventilation with the facial mask was confirmed. Then, the laryngoscope was introduced gently, keeping the head slightly extended and the jaw displaced downward (Fig. 6).

It was slightly challenging to hold the patient's head with the left arm, although intubation was successfully attained on the first attempt. Adequate ventilation was confirmed, and capnography confirmed the correct placement of the endotracheal tube (ETT).



Fig. 1 – Patient in prone position with a knife protruding from his thoracic spine.

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