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The BURP maneuver

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SUMMARY

Difficult airway management is one of the greatest challenges for the anesthesiologist when performing laryngoscopy. There are several clinical procedures to revert this problem. Knill described the BURP maneuver in 1993 and consists in the backward, upward and rightward pressure of larynx. The maneuver improves the visualization of the larynx structures and eases the intubation.

Key words: Laryngoscopy, BURP maneuver.

RESUMEN

La vía aérea difícil no anticipada causa serios problemas al anestesiólogo durante la laringoscopía. Se han descrito varios procedimientos clínicos para revertir este serio problema dentro de los que destaca la maniobra BURP. Ésta fue descrita en 1993 por Knill y consiste en el desplazamiento de la laringe hacia atrás, arriba y a la derecha, con lo que se mejora la visualización de las estructuras laríngeas y las condiciones para la intubación.

Palabras clave: *Laringoscopía, maniobra BURP.*

Care of the airways is a daily activity in the practice of anesthesiology. Intubation is not always a simple procedure and frequently anesthesiologists face problems in identifying and managing the airway. The incidence of difficult intubations ranges from 1% to 4% and intubation failure from 0.13% to 0.30%. This has prompted the development of evaluation scales, protocols and practice guidelines, as well as maneuvers and devices to address this problem[1-3].

A technique commonly used during laryngoscopy is the posterior displacement of the larynx by putting backward pressure on the thyroid or cricoids cartilage. This is known as the "BACK" maneuver. Wilson reported that this simple maneuver reduces the incidence of failure from about 9.6% to 1.6 %[4].

In 1993, Knill changed the BACK maneuver by adding the displacement of the larynx in three specific directions:

a) posterior against the cervical vertebrae;
b) as far as superior as possible and
c) slight displacement to the right.

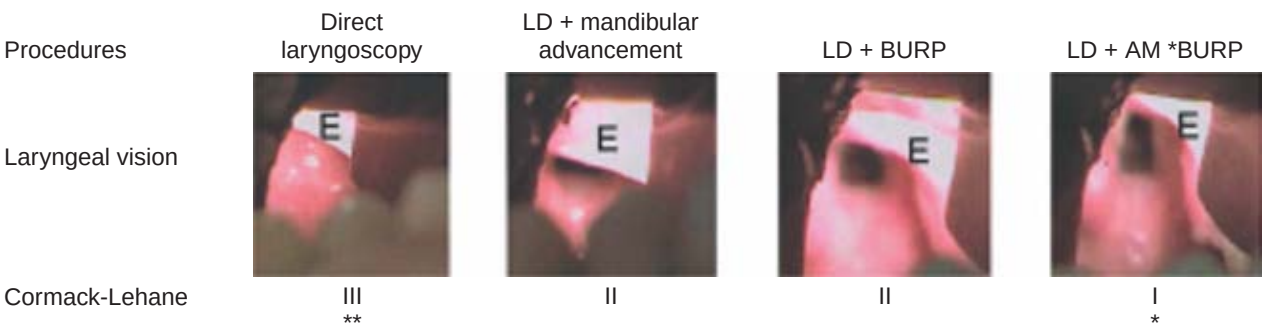
The maneuver was termed BURP as an acronym for "backward-upward-rightward pressure" of the larynx. This procedure displaces the thyroid cartilage dorsally in such a way that the larynx is pressed against cervical vertebrae's body, two centimeters in cephalic direction, until resistance appears. Subsequently, it should be displaced 0.5 cm -2.0 cm to the right.

Takahata et al validated this technique demonstrating significant improvement in visualizing the vocal cords during laryngoscopy in 630 cases in which endotracheal intubation was performed. This procedure is not associated with dysphagia, dysphonia, or cervical or pharyngeal pain during the postoperative period. Tamura described a new tech-

nique to improve laryngoscopy and endotracheal intubation with the BURP maneuver and mandibular advancement. This new technique improved significantly in the Cormack-Lehane scale. It is worth emphasizing that the BURP maneuver must not be combined with the Sellick maneuver (cricoids compression) because it makes performing the laryngoscopy and visualizing the vocal cords difficult[5-8].

Figure 1. BURP maneuver: backward-upward-rightward pressure of the larynx.

Figure 2. Combined maneuver of mandibular advancement, BURP and sniffing position. Note the improvement to visualize the airway during laryngoscopy with this procedure, when compared with the image obtained with direct laryngoscopy.
DL: direct laryngoscopy; **MA:** mandibular advancement; **BURP:** backward-upward-rightward pressure



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