

# CS#39

## **Comparison of four Airway Devices on Cervical Spine Alignment in a Cadaver Model with Global Ligamentous Instability at C5-6**

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Prasarn ML, Conrad B, Rubery PT, Wendling A, Aydog T, Horodyski M, Rehtine GR.

U. of Rochester/Strong Memorial Hospital, Rochester U. of Florida, Gainesville, FL USA & Hacettepe University, Ankara, Turkey

The authors sought to evaluate various intubation techniques to determine which device results in the least cervical motion in the setting of a global ligamentous instability model.

A global ligamentous instability at the C5-6 vertebral level was created in lightly-embalmed cadavers. An electromagnetic motion analysis device was used to assess the amount of angular and linear translation in three planes during intubation trials with each of four devices: Airtraq laryngoscope, lighted-stylet, intubating LMA and Macintosh laryngoscope.

**Results:** It was shown that the highest failure to intubate rate occurred with use of the Intubating LMA. In flexion/extension, the authors were able to demonstrate that the Lightwand and Airtraq resulted in significantly less angular motion than the Macintosh blade. In anterior/posterior translation, the Lightwand , Airtraq, and ILMA all caused significantly less linear motion than the Macintosh blade.

**Conclusion:** In a cadaver model of C5-6 instability, the greatest amount of motion was caused by the most commonly used intubation device, the Macintosh blade. It should also be noted that the Airtraq caused less motion than the Macintosh blade in three of the six tested planes.

The authors recommend the use of the Lightwand, followed by the Airtraq, in the setting of a presumed unstable cervical spine injury over the Macintosh Laryngoscope.