Comparison of optical laryngoscope: Airtraq and Miller laryngoscope for tracheal intubation during infant cardiopulmonary resuscitation

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Background: Recent resuscitation guidelines for infant cardiopulmonary resuscitation (CPR) emphasize that all rescuers should minimize interruption of chest compressions, even for endotracheal intubation. We compared the utility of the Miller laryngoscope (Mil) with Airtraq (ATQ) during chest compression in an infant manikin.

Methods: Twenty staff doctors in intensive care and emergency medicine performed tracheal intubation on an infant manikin with Mil and ATQ with or without chest compression.

Results: In Mil trials, no participants failed without chest compression, but 6 of them failed during chest compression. In ATQ trials, all participants successfully secured the airway regardless of chest compression. Intubation time was significantly lengthened due to chest compression in Mil trials, but not in ATQ trials. The visual analog scale (VAS) for laryngoscope image did not significantly change due to chest compression for ATQ or Mil trials. In contrast, chest compression worsened VAS scores for tube passage through the glottis in Mil trials, but not in ATQ trials.

Conclusion: We conclude that ATQ performed better than Mil for endotracheal intubation during chest compression in infant simulations managed by expert doctors.