We have used a video-recording, retrospective analysis technique to demonstrate that successful tracheal intubation using the Airtraq laryngoscope require the glottic opening to be centred in the view, and positioning the inter-arytenoid cleft medially below the horizontal line in the centre of the view.

On each image (a) immediately prior to a tracheal intubation attempt, the outlines of the glottic opening and the position of the inter-arytenoid cleft immediately adjacent to posterior glottis were marked (b).

Represent schematic illustrations of the marks superimposed for glottic opening (a, b) and for the inter-arytenoid cleft (c, d) positions, just prior to failed (a, c: n = 59) and successful (b, d: n = 50) tracheal intubation attempts. The downback-up manoeuvre and the reduction of cervical spine extension invariably moved the glottic opening and lowered its position in the laryngoscopic view. By using the down-back-up manoeuvre and the alignment of the head and neck, the glottic opening and the inter-arytenoid cleft position changed from the FZ to the TZ.

FZ and the TZ of the inter-arytenoid cleft position associated with failure and success of tracheal intubation attempts did not overlap indicating that the inter-arytenoid cleft position is a predictor of tracheal intubation success using the Airtraq laryngoscope.