SUPPLEMENTAL DIGITAL CONTENT 1

Ratio between endotracheal tube cuff outer diameter and tracheal internal diameter

We measured the tracheal diameter of the seven pigs undergoing oropharyngeal challenge with *Pseudomonas aeruginosa*. Briefly, as reported in figure 1 below, during an expiratory pause we obtained fluoroscopic images of the trachea, through a C-arm fluoroscopy system (Siremobil Compact, Siemens AG, Erlangen, Germany). A ruler with radio-opaque markers was applied in close proximity of the pig’s neck to correct for magnification of the fluoroscopic images. The tracheal internal diameter was measured using ImageJ (NIH, Bethesda, MD)

![Fluoroscopic image of pig’s trachea (pig weight 32 Kg). Pigs is prone and placed in anti-Trendelenburg. The arrows depict the upper and lower tracheal margins.](image-url)
Based on these computations, we found a mean tracheal internal diameter of 15.3 ± 0.6 mm. Therefore, given that the 7.5 I.D. Hi-Lo endotracheal tube comprises a cuff with a mean outer diameter of 30.4 mm\(^1\), in our studies the mean ratio between cuff outer diameter and tracheal internal diameter was 1.9 ± 0.8.
Reference List