Flexible fiberoptic versus Parker Flex-It™, Truflex™ and hockey stick formed stylet: an intubation guide with the videolaryngoscope

McGRATH® Series 5 in a simulated airway

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BACKGROUND
The unexpected difficult airway is always a challenge for experts as well as for trainees. Fiberoptic intubation is still the gold standard in the management of the difficult airway. A good alternative for difficult intubation is the videolaryngoscope with indirect laryngoscopy. Visualisation of the glottis is often easy with these devices but entering the trachea with the endotracheal tube may be a problem because intubation must be performed in a curved way. Therefore special stylets were designed and different methods were used.

AIM OF STUDY
Aim of the study was to compare a fiberoptic bronchoscope as a flexible guide wire versus Parker Flex-It™, the Truflex™ and a hockey stick formed stylet in a simulated airway with the McGRATH® Series 5 to time and success of insertion.

METHODS
Institutional review board approval and written informed consent
- 20 anaesthesiologists in the first or second year of practice
- No experience in videolaryngoscopy
- Standardised 5 minute lasting instruction
- Standardised intubation
- Airway simulator SimManMark II (Laerdal)
- McGRATH® Series 5 videolaryngoscope
- Fiberoptic (FO), Parker Flex-It™ (PF), Truflex™ (TF) or hockey stick formed stylet (HS) as introduction aid.
- 8/2 different kinds of airway in randomized order

All steps of the intubation were documented and compared. Data are mean ± SD. Statistical differences: t-test. p<0.01

RESULTS
- Sniffing Position: Truflex™ 26.4s ± 5.5s vs. PF: 35.3s ± 9.8s vs. HS: 41.2s ± 18.3s vs. FO: 45.8s ± 10.2s
  Success rate: Truflex™ stytel 100%, Parker Flex-It™ 100%, Fiberoptic 95%, hockey stick 90%
- Swollen tongue: Truflex™ 30.6s ± 9.2s vs. FO: 41.7 ± 9.6s vs. HS 42.7s ± 8.4s vs. PF: 45.4s ± 21.3s
  Success rate: Truflex™ stytel 100%, Fiberoptic 100%, Parker Flex-It™ 80%, hockey stick 60%

CONCLUSION
For the untrained anaesthesiologist the combination of McGRATH® Series 5 videolaryngoscope and Truflex™ is a fast and efficient alternative to secure the airway. The subjective sensation of the unexperienced anaesthetist using the Fiberoptic as intubation aid was more comfortable, flexible and atraumatic than using Parker Flex-It™, the Truflex™ or a hockey stick formed stylet.