Voies aériennes : de l'intubation à l'extubation

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Airway management in patients with severe deep neck infections: from intubation to ventilator weaning in ICU

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Position du problème et objectif(s) de l'étude:
Deep neck infection (DNI) is a serious bacterial disease requiring surgical drainage under general anesthesia, in addition to antibiotic therapy, However, the oedema can modify anatomical relationships, reduce cervical mobility and limit mouth opening, increasing ventilation and intubation difficulties (1). We aimed to describe the various airway management techniques used in this population, identify risk factors for failed intubation, and describe strategies for mechanical ventilation weaning.

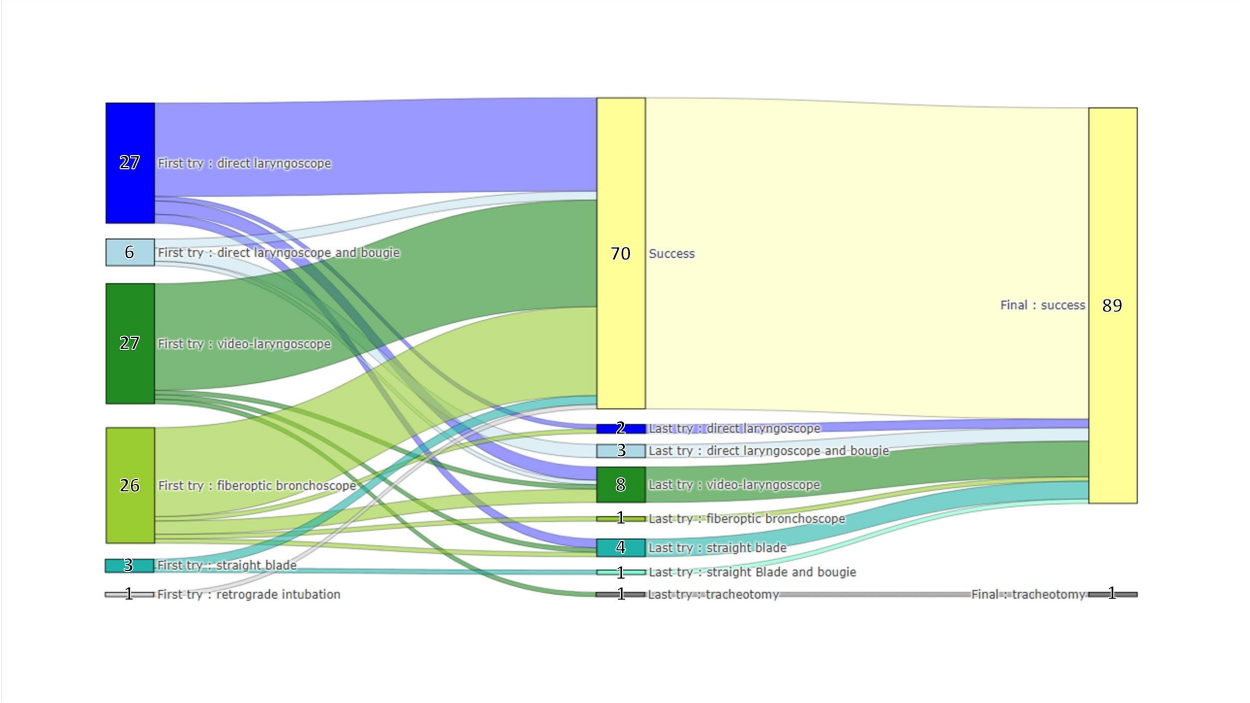
Matériel et méthodes:
This retrospective study analyzed all adult patients who underwent surgical treatment for DNI and required invasive mechanical ventilation for more than 24 hours in the Intensive Care Unit (ICU) of two centers, over seven years (2015-2021). Airway management data specified the first intubation technique used and the last successful technique. Complications related to intubation procedure were defined by oxygen desaturation less than 90%, severe oxygen desaturation less than 80% or cardiac arrest occurrence. We used descriptive statistical analyses with medians [25th-75th percentiles] and Kruskal-Wallis test for quantitative variables and numbers (%) and chi-squared test or the Fisher's exact test for qualitative variables. This retrospective research has been approved by the local Institutional Review Board of the University Hospital Center of Montpellier (IRB-MTP_2022_06_202201141). An information note was sent to every patient before data collection.

Résultats & Discussion:
Among the 91 analyzed patients, 61% were male, with a median age of 52 years and a median SAPS score of 29 on admission. Intubation was performed using direct laryngoscopy (36%), awake fiberscopy (28.9%), or video-laryngoscopy (VL). The choice of intubation technique varied between preoperative evaluation of the mouth opening, centers and changed over time. The rate of first-pass intubation failure was 22% and was significantly associated with an increased risk of desaturation (21% below 90 % and 26% below 80% compared to 13% and 7% respectively in the group of intubation success ($p=0.019$)). No cardiac arrest during intubation attempt was found. In ICU, factors associated with extubation failure were pharyngeal or tonsillar origin ($p=0.003$), mediastinitis ($p=0.02$), number of surgical revisions ($p<0.001$) and septic shock ($p=0.013$). Patients who experience extubation failure have an increased risk of complications, longer mechanical ventilation, and length of stay in the ICU.

Conclusion:
With awake fiberscopy, videolaryngoscopy could be another appropriate technique to control the airway in patients with severe deep neck infection. The rate of failed intubation on the first attempt in these patients is high. Neither clinical nor radiological findings can predict intubation failure at the first-pass. Regarding weaning from mechanical ventilation in ICU, failed extubation is rare but associated with

prolonged hospital stay. Further studies are needed to evaluate which airway management method would
be optimal. We suggest the mouth opening, the anaesthesiologist expertise and equipment preference as main decision-making criteria.

Références bibliographiques:
1- American Journal of Otolaryngology, 2007, 28, 415-8



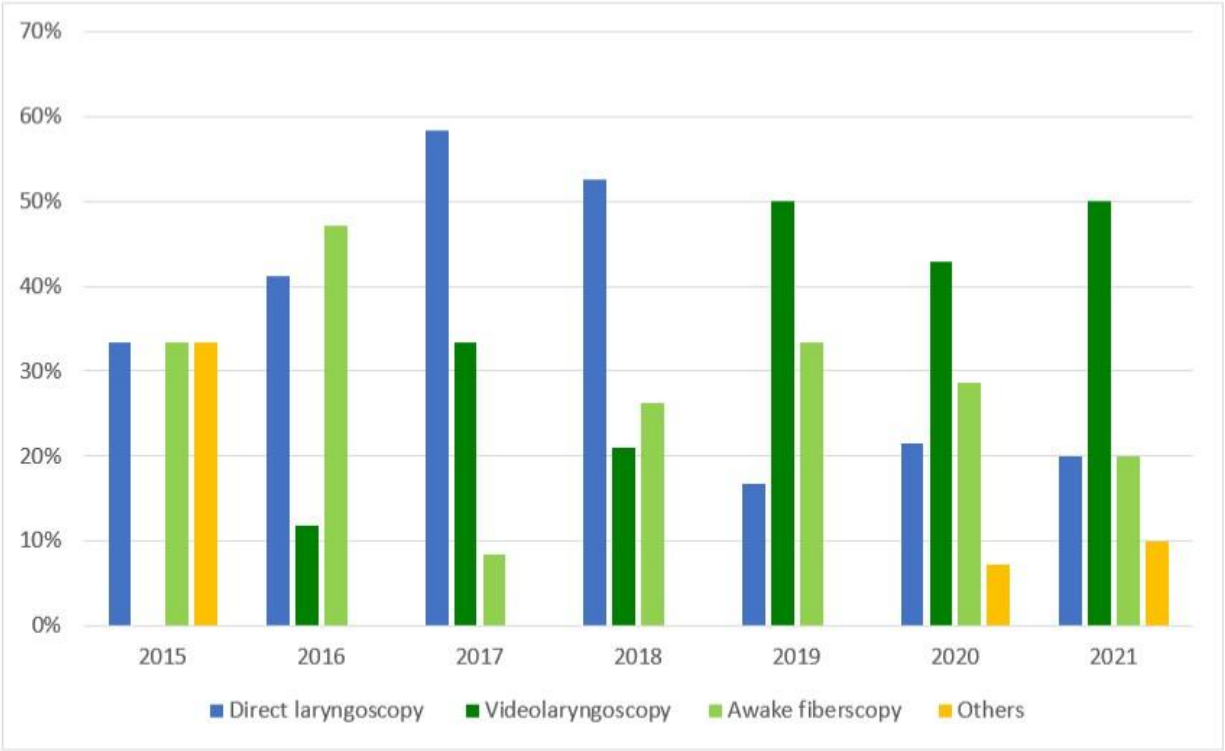


Figure 2: Intubation techniques used over years.

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