



Carrera de Especialista en Emergencias Módulo Vía Aérea

21 de Abril 2023

Comité de Vía Aérea 



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ITEM PLANTEADO	CONFLICTO DE INTERESES PARA DECLARAR SI/NO	
SCIENTIFIC ADVISORY BOARD		NO
INVESTIGACIÓN PARA LA INDUSTRIA		NO
EMPLEADO/A		NO
ACCIONISTA		NO
CONSULTOR/A		NO
DISERTANTE		NO
HONORARIOS		NO



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Evaluación de la Vía Aérea Difícil



Vía Aérea Anatómicamente Difícil



Vía Aérea Fisiológicamente difícil

Dr. Gonzalo F. J. Figueroa - Especialista en Emergentología
Ex Médico del Servicio de Urgencias Hospital Pirovano – CABA
Médico de planta UTI Clínica Chapelco, San Martín de los Andes, Neuquén.
Comité de Vía Aérea – SAE



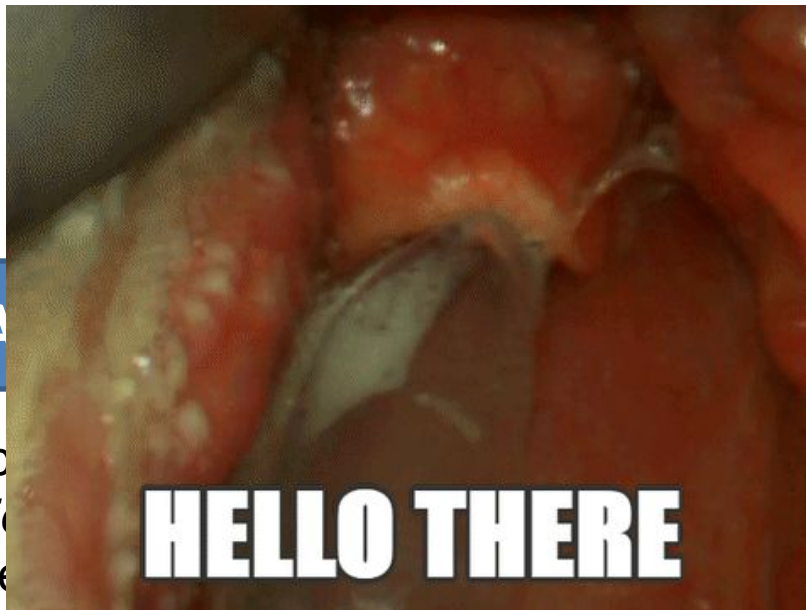


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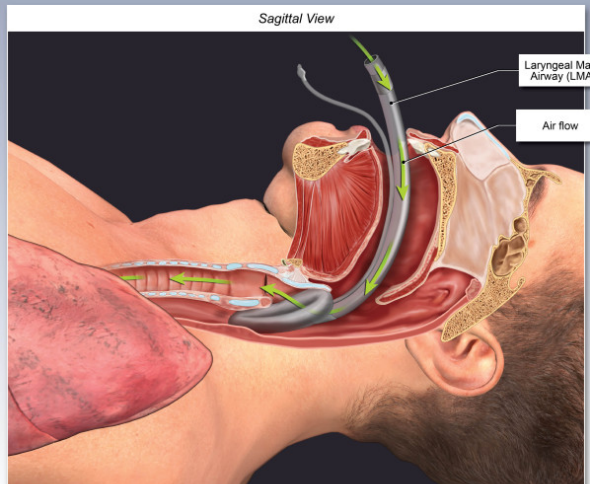
VMB

DSG

Laringoscopia e
IOT

Cricotirotomía

Laryngeal Mask Airway (LMA)



Brown III CA, Walls RM. Identifi
Kluwer, Philadelphia 2018.

J. Adam Law MD FRCP, George

Emergency Airway

Unconscious Pa



Evaluación Preintubación

¿Predictores
de
Dificultad?

No

NO difícil



VA
*inesperadamente
difícil o más difícil
de lo esperado*

Plan



Fracaso
de la VA



Estrategia
Alternativa

Evaluación Preintubación

Identificar factores de dificultad: **Pacientes sin una dificultad evidente**



Baja Sensibilidad
y
Especificidad

La mayoría de las veces una vía aérea predicha mediante éstos como compleja no lo es, y la situación de fracaso de la VA es **inesperada** (algunos estudios reportan hasta 90% de las intubaciones difíciles no anticipadas).

Nørskov AK, Rosenstock CV, Wetterslev J, Astrup G, Afshari A, Lundstrøm LH. Diagnostic accuracy of anaesthesiologists' prediction of difficult airway management in daily clinical practice: a cohort study of 188064 patients registered in the Danish Anaesthesia Database. *Anaesthesia*. 2015;70(3):272-281. doi:10.1111/anae.12955

Yentis SM. Predicting difficult intubation--worthwhile exercise or pointless ritual?. *Anaesthesia*. 2002;57(2):105-109. doi:10.1046/j.0003-2409.2001.02515.x

Roth D, Pace NL, Lee A, et al. Airway physical examination tests for detection of difficult airway management in apparently normal adult patients. *Cochrane Database Syst Rev*. 2018;5(5):CD008874. Published 2018 May 15. doi:10.1002/14651858.CD008874.pub2





1997 Siddle & Grossman



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Evaluación Preintubación

¿Ventilación
con MB o DSG
posible?

**Grado de
dificultad**

¿Predicto
res de VA
difícil?

Urgencia

Tiempo



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Fundamental

EJ:

Plan A: Laringoscopia e IOT
mediante ISR con ayuda de
Bougie



Plan B: Colocación de Máscara
Laríngea

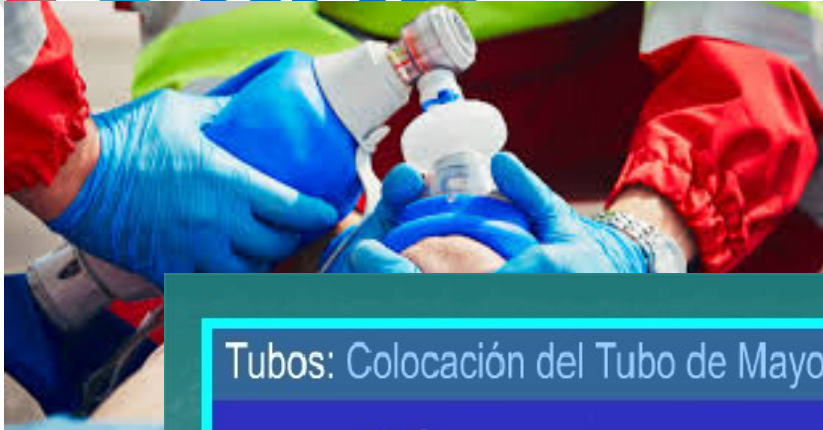


Plan C: Fibrolaringoscopio
flexible

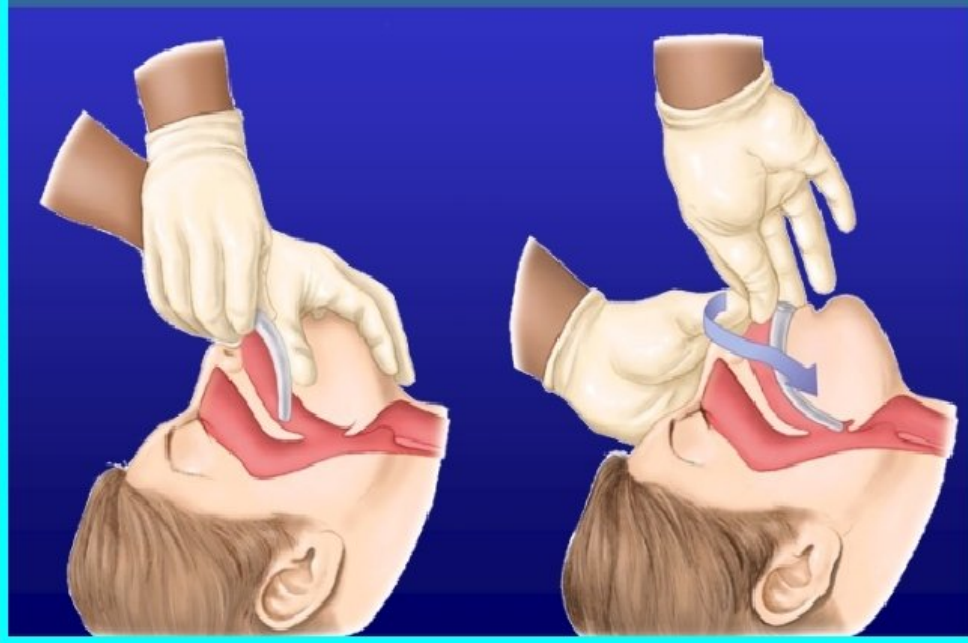


Plan D: Cricotirotomía





Tubos: Colocación del Tubo de Mayo



Dism
de Et



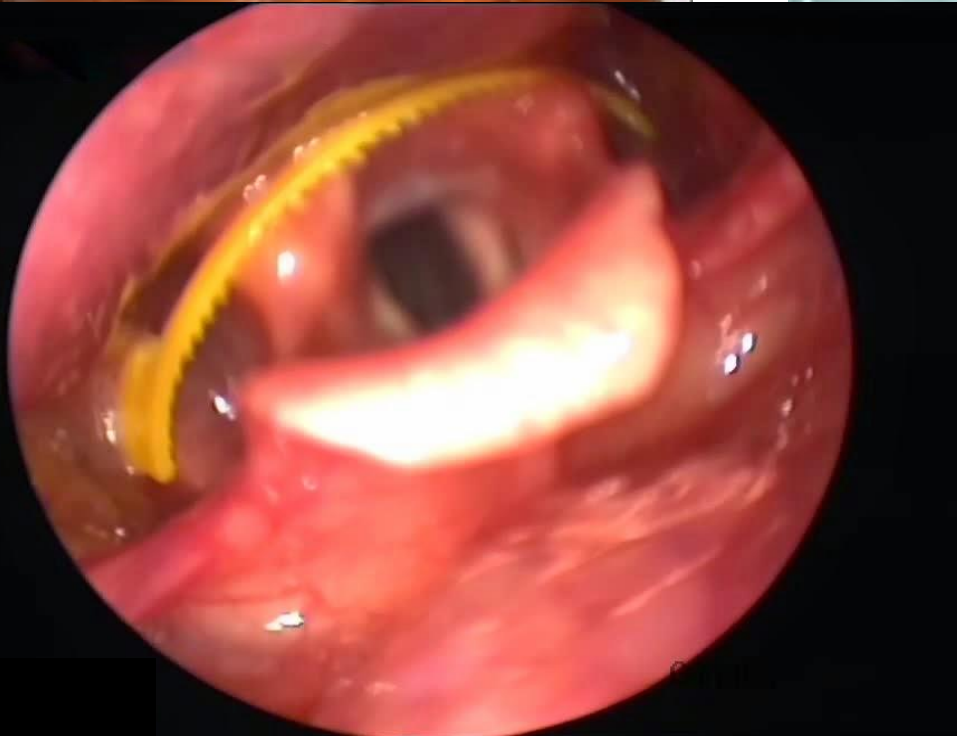
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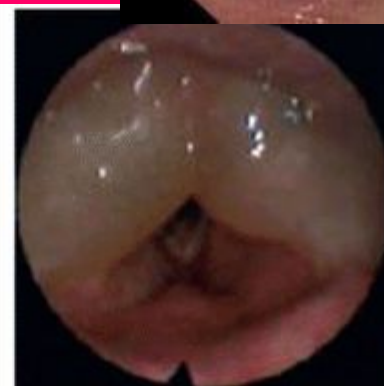
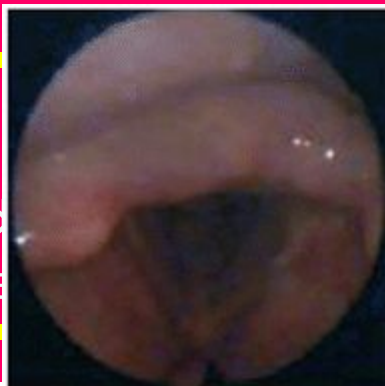
- Brown III CA, Walls RM. Identification of the Difficult and Failed Airway. Emergency Airway Management, 5, Brown III CA, Sakles JC, Mick NW (Philadelphia 2018.
- Law, J.A., Broemling, N., Cooper, R.M. et al. The difficult airway with re management – Part 2 – The anticipated difficult airway. Can J Anesth/J (2013). <https://doi.org/10.1007/s12630-013-0020-x>
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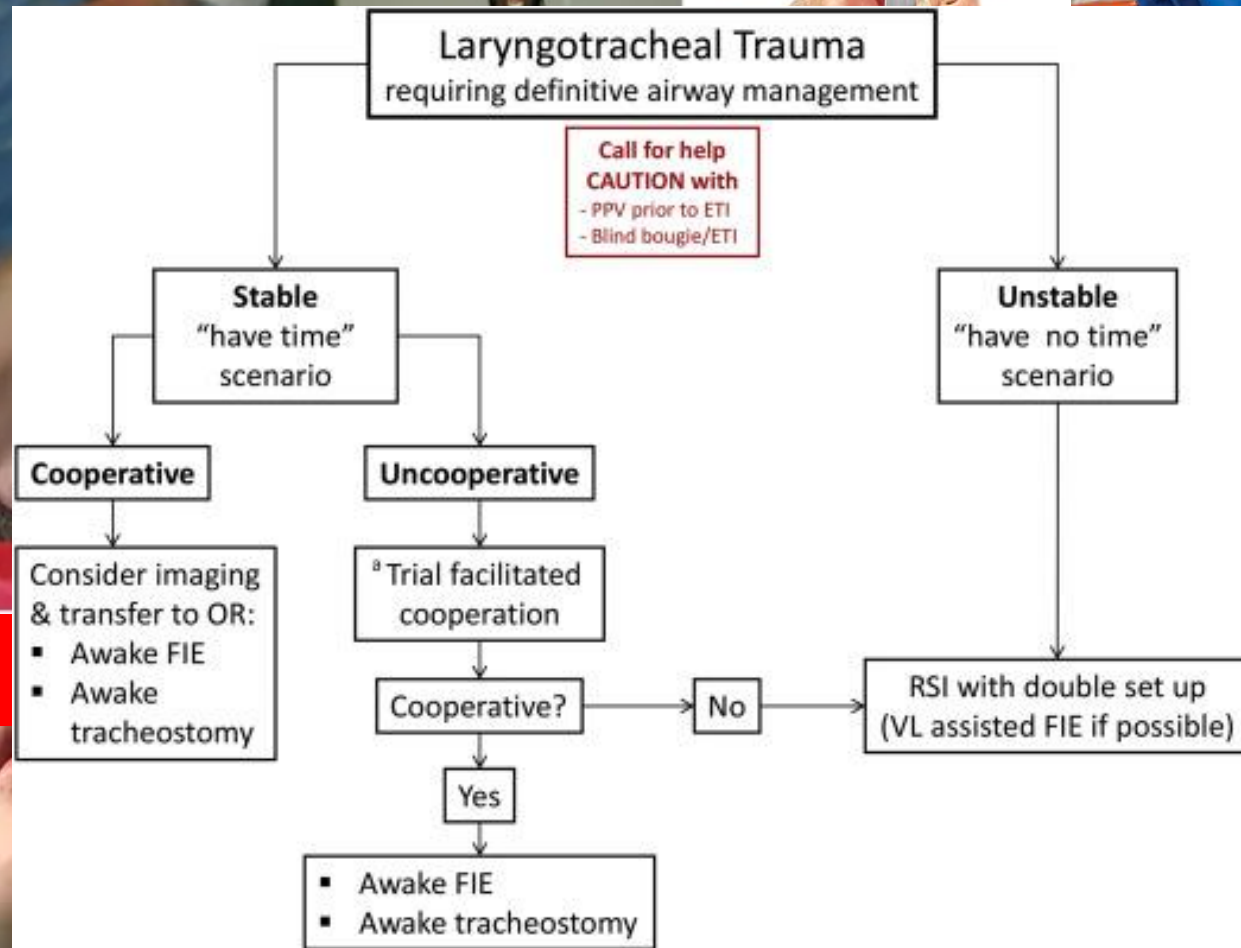




Sellado contra las estructuras laríngeas

**El fracaso de
tórax, no se**





•Kovacs G, Sowers N. Airway Management in Trauma. *Emerg Med Clin North Am.* 2018;36(1):61-84. doi:10.1016/j.emc.2017.08.006

Transectar el riesgo potencial de
degradar una lesión laringo-traqueal



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Dificultad para realizar una Laringoscopia e IOT



Escala de Cormack – Lehane

- Una vista de grado 3 o 4 define una Laringoscopia difícil.
- **Fundamental realizar una laringoscopia en forma secuencial.**

Epiglotoscopia

Valleculoscopia

Laringoscopia

Intubación

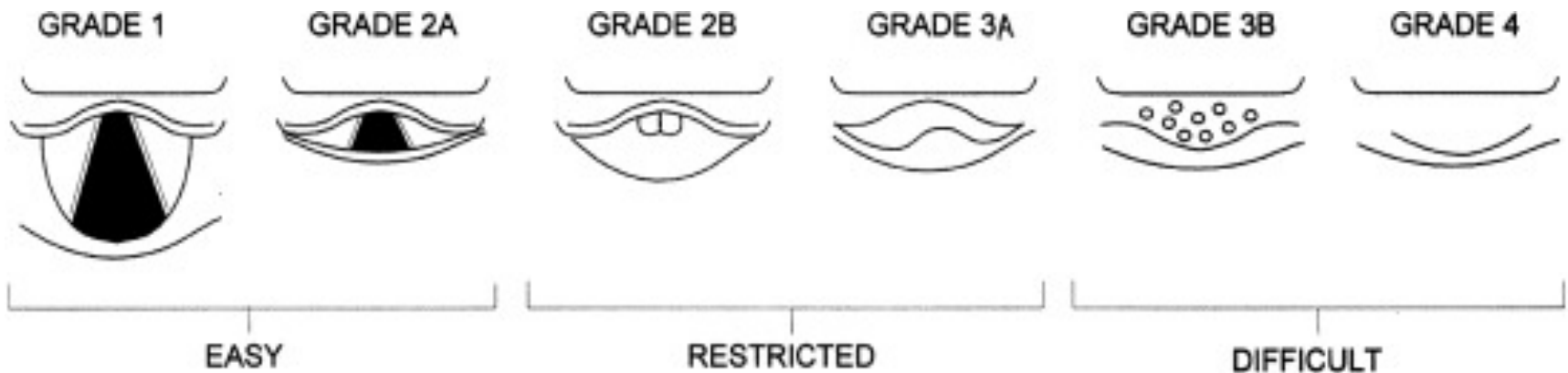




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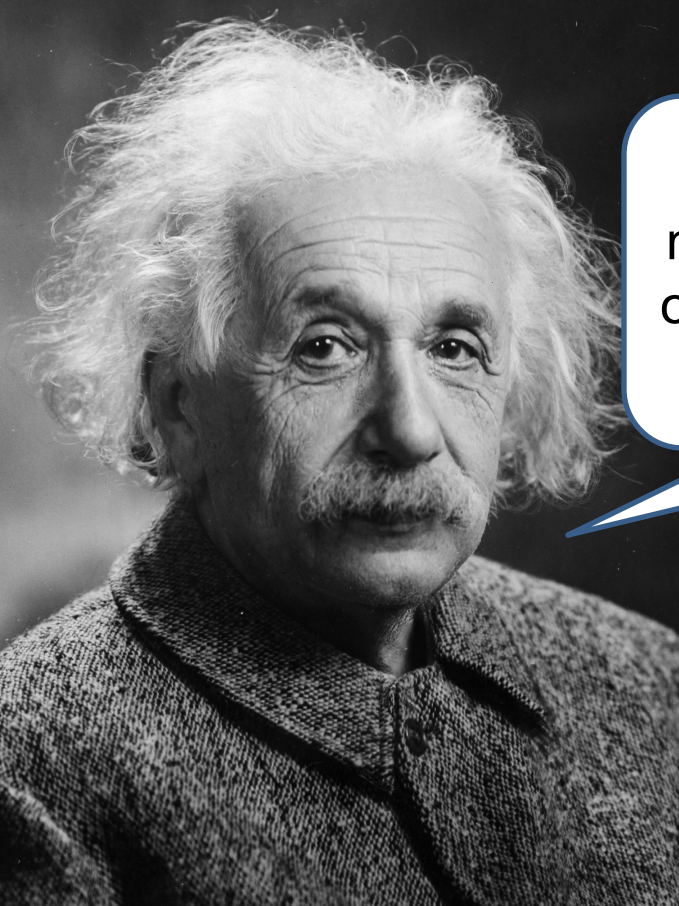


Dificultad para realizar una Laringoscopia e IOT



Los **grados 1 y 2a** se consideran como una visualización **fácil**, los **grados 2b y 3a** se consideran como una vista **restringida** y los **grados 3b y 4** **difíciles**.





La locura es hacer el mismo procedimiento una y otra vez esperando meter el tubo



copía e IOT

puede definir como la **más de un intento** para la intubación del tubo.

Sucesivos intentos requieren alguna modificación en la técnica para facilitar la intubación.





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Class I

Class II

Class III

Class IV



- Frerk C, Mitchell VS, McNarry AF, et al. Difficult Airway Society 2015 guidelines for management of unanticipated difficult intubation in adults. *British Journal of Anaesthesia*, Volume 115, Issue 6, 1 December 2015, Pages 827–848
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Sociedad de Vía Aérea Difícil : Guías de Intubación Difícil - Resumen

Plan A :
Ventilación con mascarilla e
Intubación traqueal

Laringoscopia

Éxito

Intubación Traqueal

Intubación fallida

Plan B :
Mantener Oxigenación
Inserción de DSG

Insertar Dispositivo
supraglótico (DSG)

Éxito

DETENERSE Y PENSAR

Opciones (Riesgo-Beneficio)

1. Despertar paciente
2. Intubación traqueal vía DSG
3. Continuar sin intentar intubar
4. Traqueostomía/cricotiroidotomía

Falla ventilación con DSG

Plan C :
Ventilación con mascarilla
facial

Intento final de ventilar con
mascarilla facial

Éxito

Despertar al paciente

NPI – NPO

Plan D :
Abordaje cervical de
emergencia

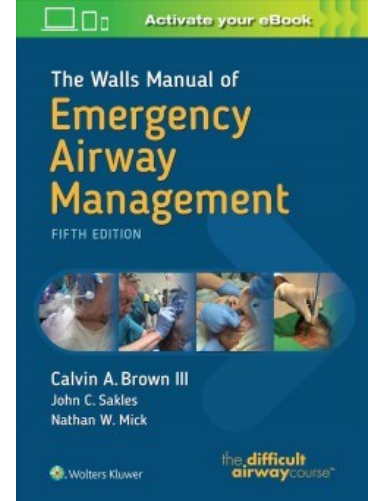
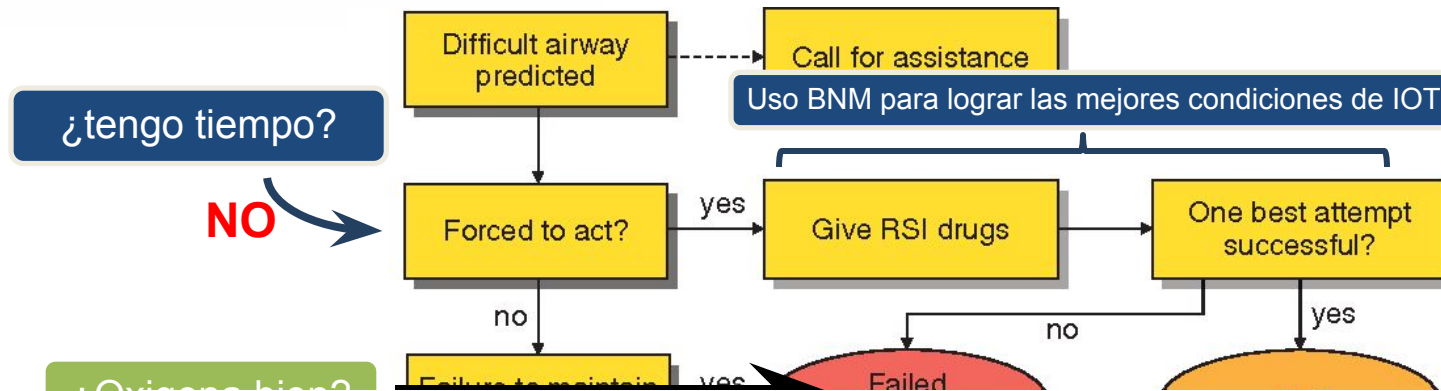
Cricotiroidotomía

Este diagrama de flujo forma parte de las Guías de la DAS para Intubación Difícil No Anticipada en adultos y debe ser usada en conjunto con el texto

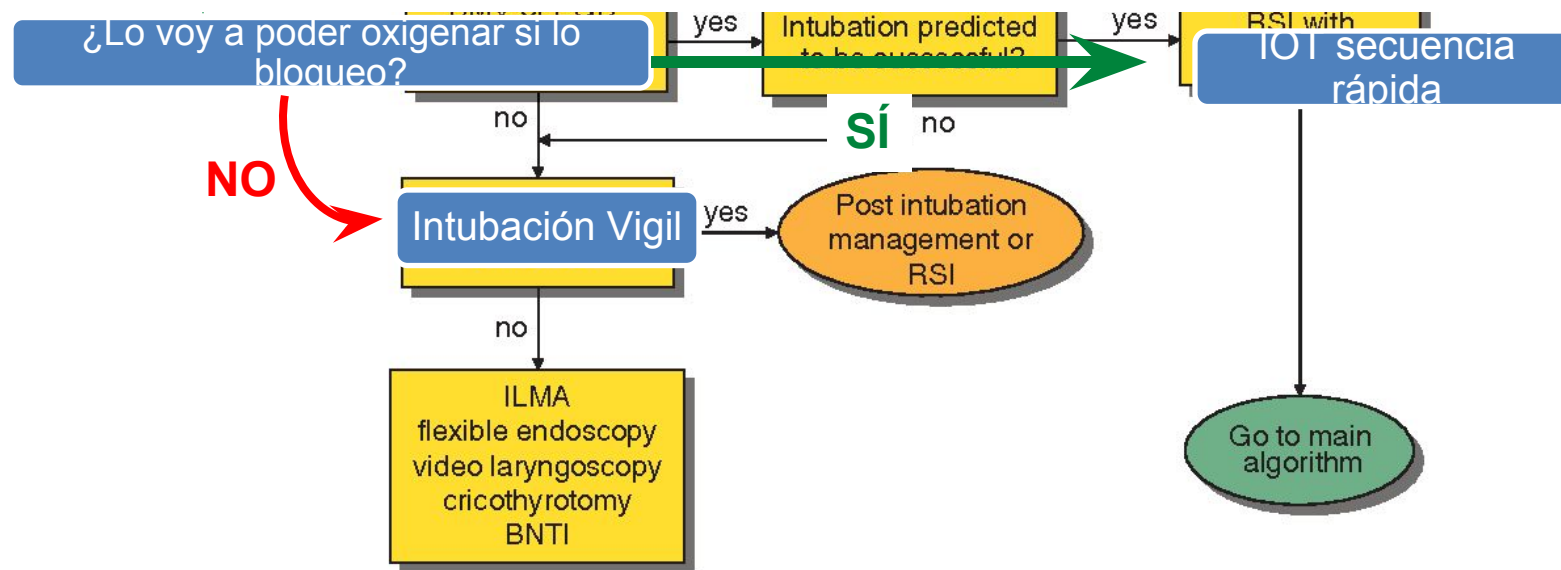




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- Brown III CA, Walls RM. The Emergency Airway Algorithms. In: The Walls Manual of Emergency Airway Management, 5, Brown III CA, Sakles JC, Mick NW (Eds), Wolters Kluwer, Philadelphia 2018.







ment



-
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•Utilización de Oxigenación apneica.

gico.





Primero, no hacer daño.





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JAMA | Original Investigation | CARING FOR THE CRITICALLY ILL PATIENT

Intubation Practices and Adverse Peri-intubation Events in Critically Ill Patients From 29 Countries

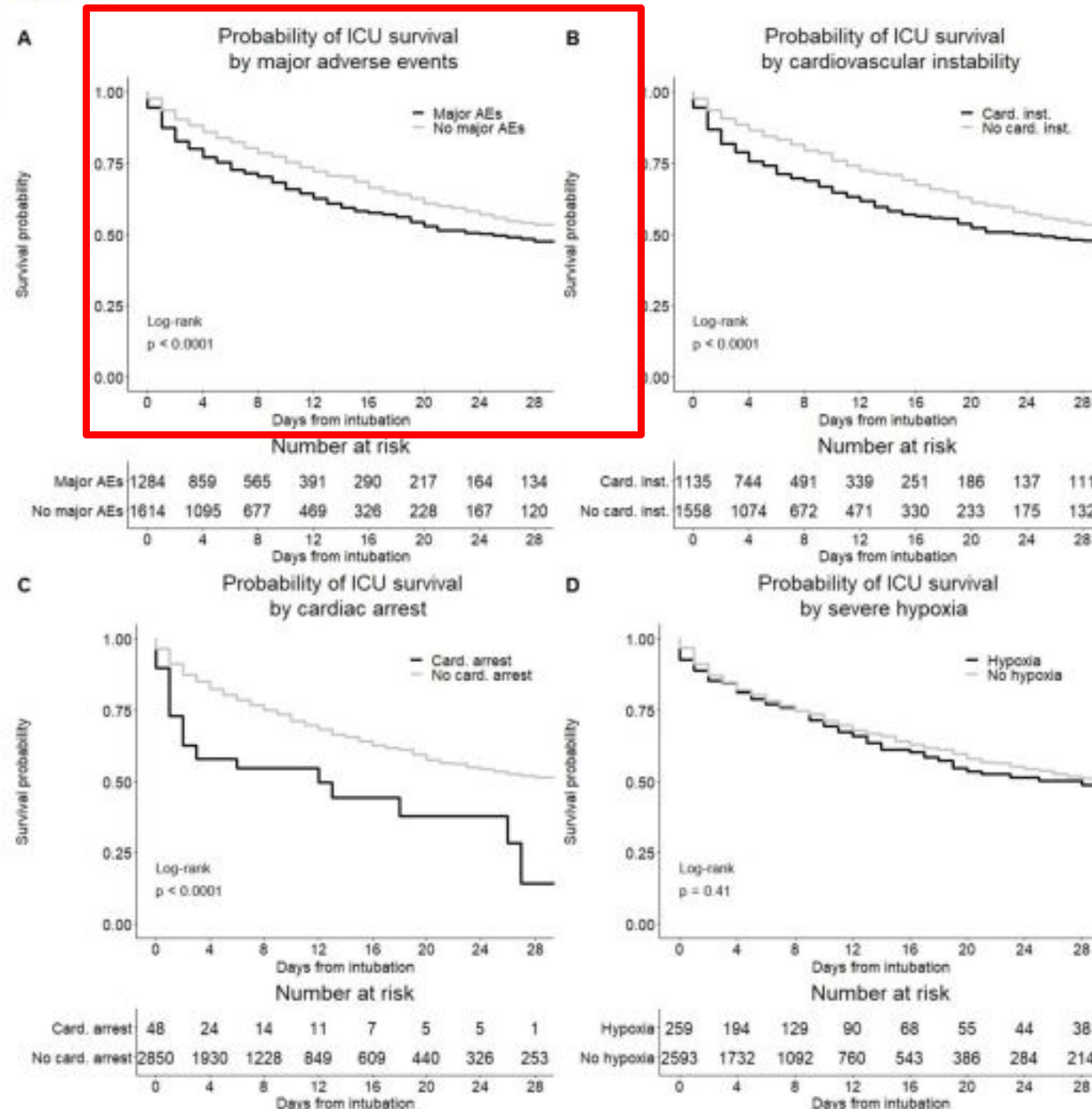
Vincenzo Russotto, MD; Sheila Nainan Myatra, MD; John G. Laffey, MD, MA; Elena Tassistro, MS; Laura Antolini, PhD; Philippe Bauer, MD, PhD; Jean Baptiste Lascarrou, MD, PhD; Konstanty Szuldrzyński, MD, PhD; Luigi Camporota, MD; Paolo Pelosi, MD; Massimiliano Sorbello, MD; Andy Higgs, MD; Robert Greif, MD; Christian Putensen, MD; Christina Agvald-Öhman, MD, PhD; Athanasios Chalkias, MD, PhD; Kristaps Bokums, MD; David Brewster, MD; Emanuela Rossi, MS; Roberto Fumagalli, MD; Antonio Pesenti, MD; Giuseppe Foti, MD; Giacomo Bellani, MD, PhD; for the INTUBE Study Investigators

The rate of major adverse events was significantly lower with first-pass intubation success than it was for patients requiring 2 attempts (43.2% vs 51.5%; absolute difference, 8.4%; 95% CI, 3.3%-13.5%; $P = .001$) and for patients requiring 3 or more attempts (43.2% vs 58.0%; absolute difference, 14.2%; 95% CI, 5.2%-23.1%; $P < .001$; eFigure 2 in the [Supplement](#)).

Estudio prospectivo observacional, 197
sitios (UTI, DE, guardias), 29 países. 2021



eFigure 3. A, Kaplan-Meier survival curves by peri-intubation major adverse events. B, Kaplan-Meier survival curves by cardiovascular instability. C, Kaplan-Meier survival curves by cardiac arrest. D, Kaplan-Meier survival curves by severe hypoxia.



PATIENT

ubation Events

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Propofol como
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Cardiac Arrest and Mortality Related to Intubation Procedure in Critically Ill Adult Patients: A Multicenter Cohort

CONCLUSIONS

Intubation-related cardiac arrest occurred in one of 40 cases of ICU intubation procedures. Main risk factors for intubation-related cardiac arrest were overweight or obesity, age more than 75 years old, low SBP prior to intubation, hypoxemia prior to intubation, and absence of preoxygenation before intubation procedure. Interventions before and during intubation procedures to improve hemodynamic status and minimize preintubation hypoxemia may prevent intubation-related cardiac arrest and thereby decrease 28-day mortality of ICU patients placed under invasive mechanical ventilation.

Intubation-related



Available online at www.sciencedirect.com

Resuscitation

journal homepage: www.elsevier.com/locate/resuscitation

Abstract

Aim: To determine the incidence of peri-intubation cardiac arrest through analysis of a multi-center Emergency Department (ED) airway registry and to report associated clinical characteristics.

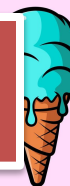
Methods: This is a secondary analysis of prospectively collected data (National Emergency Airway Registry) comprising ED endotracheal intubations (ETIs) of subjects >14 years old from 2016 to 2018. We excluded those with cardiac arrest prior to intubation. The primary outcome was peri-intubation cardiac arrest. Multivariable logistic regression generated adjusted odds ratios (aOR) of variables associated with this outcome, controlling for clinical features, difficult airway characteristics, and ETI modality.

Results: Of 15,776 subjects who met selection criteria, 157 (1.0%, 95% CI 0.9–1.2%) experienced peri-intubation cardiac arrest. Pre-intubation systolic blood pressure <100 mm Hg (aOR 6.2, 95% CI 2.5–8.5), pre-intubation oxygen saturation <90% (aOR 3.1, 95% CI 2.0–4.8), and clinician-reported need for immediate intubation without time for full preparation (aOR 1.8, 95% CI, 1.2–2.7) were associated with higher likelihood of peri-intubation cardiac arrest. The association between pre-intubation shock and cardiac arrest persisted in additional modeling stratified by ETI indication, induction agent, and oxygenation status.

Conclusions: Peri-intubation cardiac arrest for patients undergoing ETI in the ED is rare. Higher likelihood of arrest occurs in patients with pre-intubation shock or hypoxemia. Prospective trials are necessary to determine whether a protocol to optimize pre-intubation haemodynamics and oxygenation mitigates the risk of peri-intubation cardiac arrest.

Keywords: Airway, Intubation, Mortality, Cardiac arrest, Hypotension, Adverse event, Hypoxemia

Incidenca CA 1%. Hipotensi3n previa a la intubaci3n, TA sist3lica <100 mmHg, desaturaci3n < 90%, urgencia sin preparaci3n se asocian a CA.





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CONCLUSIÓN

- Intubación dificultosa por anatomía compleja + Deterioro fisiológico grave
- El emergentólogo cuenta con recursos y herramientas para resolver esas dificultades y debe diseñar y ejecutar un plan adecuado a cada paciente.
- Los predictores de dificultad anatómica son de baja sensibilidad y especificidad.
- Cuando se falla un intento de intubación o cualquiera de las técnicas disponibles se debe reconocer la causa de la falla e intentar solucionarla o recurrir sin dilaciones a otra técnica si no se puede



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¡Muchas Gracias!

Gonzalo Figueroa
gfjfigueroa@gmail.c
om