MANEJO DE LA VÍA AÉREA DIFÍCIL EN CIRUGÍA AMBULATORIA
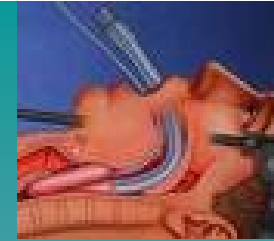
Dr. R. García- Aguado; Dra. G. Bañuls
València 14 octubre 2008

VAD sí o no??

MISCELLANEOUS CONDITIONS

Epilepsy is not a contraindication, provided it is stable and not triggered by surgical procedures! Many patients with neuromuscular disorders are acceptable, but the anaesthetist should make the final decision as the requirement for neuromuscular blocking drugs will affect acceptability. Previous problems with anaesthesia must be considered in light of the proposed technique. For example, difficulties associated with succinylcholine or tracheal intubation should be of little consequence if the current operation can safely be managed with a laryngeal mask airway. Although managing a difficult airway may introduce some delay, there is no other reason why these cases cannot be accepted for ambulatory surgery.

VAD sí o no??

ical evaluation (SIAARTI Guidelines for perioperatory record preparation [19]), allowing identification of potential difficulties and lowering risks during all procedures.

The written documentation in the anaesthesia record is considered to be useful even if the physician that performed preoperatory evaluation is different from the one that will perform anaesthesia. In any case, before starting any procedure, an Anaesthetist should verify all available documents to confirm or modify the colleague's recordings and to inform the patient of a modified strategy.

In case of difficult airway management preoperatory prediction, the patient will be automatically excluded for day surgery scheduling.

able on the market devices, may not be suggested; on the other hand the GdS considers strongly necessary to *define* and *identify those devices whose presence is considered mandatory wherever anaesthetic procedures may be performed.*

Useful criteria for devices identification were immediate availability, ease of use, widespread diffusion, recognized efficacy and an effective cost/benefit ratio. Other devices, *not intended for urgent or emergent use*, should be available upon request on an airway management dedicated chart.

While analyzing the different devices, the GdS considered also long time and recently available devices and instruments, including new optical devices, much more complex than standard laryngoscope, such as video-

Practice Guidelines for Management of the Difficult Airway

An Updated Report by the American Society of Anesthesiologists Task Force on Management of the Difficult Airway

PRACTICE guidelines are systematically developed recommendations that assist the practitioner and patient in making decisions about health care. These recommendations may be adopted, modified, or rejected according to clinical needs and constraints.

Practice guidelines are not intended as standards or absolute requirements. The use of practice guidelines cannot guarantee any specific outcome. Practice guidelines are subject to revision as warranted by the evolution of medical knowledge, technology, and practice. They provide basic recommendations that are supported by analysis of the current literature and by a synthesis of expert opinion, open forum commentary, and clinical feasibility data.

This revision includes data published since the "Practice Guidelines for Management of the Difficult Airway" were adopted by the American Society of Anesthesiologists in 1992; it also includes data and recommendations for a wider range of management techniques than was previously addressed.

A. Definition

A standard definition of the difficult airway cannot be identified in the available literature. For these Guidelines, a *difficult airway* is defined as the clinical situation 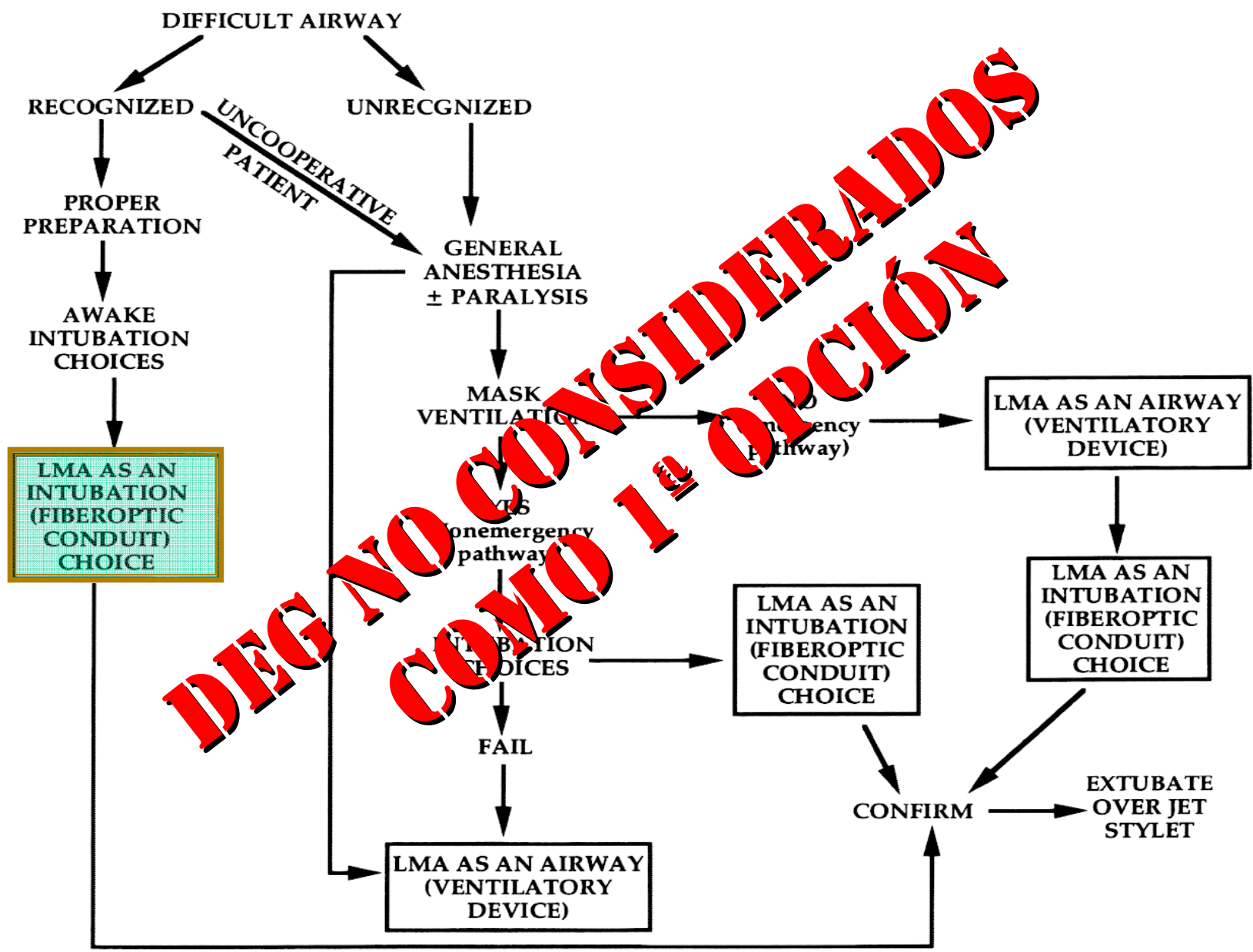in which a conventionally trained anesthesiologist experiences difficulty with face mask ventilation of the upper airway, difficulty with tracheal intubation, or both.

The difficult airway represents a complex interaction between patient factors, the clinical setting, and the skills of the practitioner. Analysis of this interaction requires precise collection and communication of data. The Task Force urges clinicians and investigators to use explicit descriptions of the difficult airway. Descriptions that can be categorized or expressed as numerical values are particularly desirable, as this type of information lends itself to aggregate analysis and cross-study comparisons. Suggested descriptions include (but are not limited to):
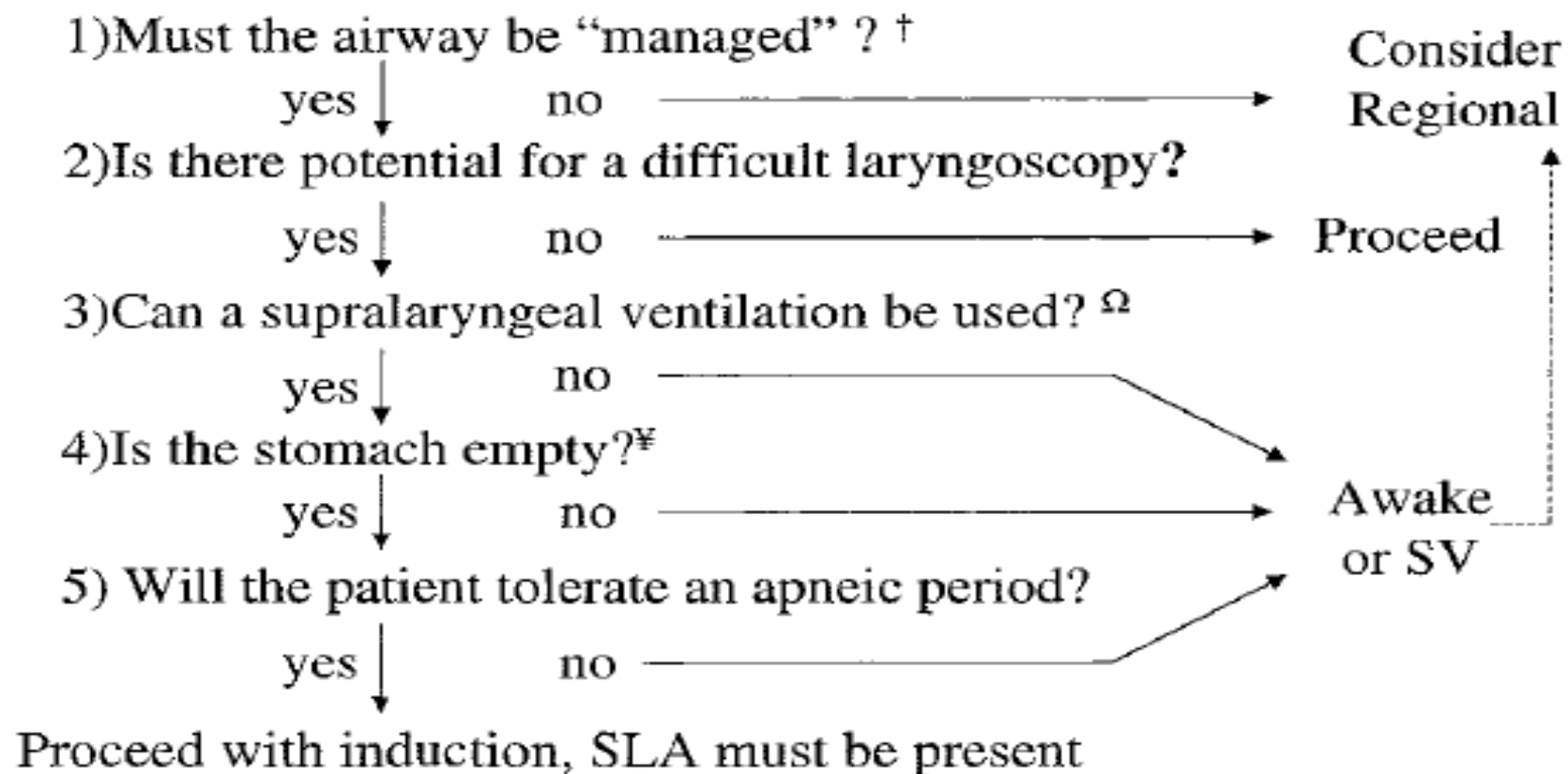
1. Difficult face mask ventilation: (a) It is not possible for the anesthesiologist to provide adequate face mask ventilation due to one or more of the following problems: inadequate mask seal, excessive gas leak, or excessive resistance to the ingress or egress of gas. (b) Signs of inadequate face mask ventilation include (but are not limited to) absent or inadequate chest movement, absent or inadequate breath sounds, auscultatory signs of severe obstruction, cyanosis, gastric air entry or dilatation, decreasing or inadequate oxygen saturation (SpO_2), absent or inadequate exhaled carbon dioxide, absent or inadequate spirometric measures of exhaled gas flow, and hemodynamic changes associated with hypoxemia or hypercarbia (*e.g.*, hypertension, tachycardia, arrhythmia).
2. Difficult laryngoscopy: (a) It is not possible to visualize any portion of the vocal cords after multiple attempts at conventional laryngoscopy.
3. Difficult tracheal intubation: (a) Tracheal intubation requires multiple attempts, in the presence or absence of tracheal pathology.
4. Failed intubation: (a) Placement of the endotracheal tube fails after multiple intubation attempts.

1)Must the airway be "managed" ? †

yes ↓   no ————————————————→ Consider Regional

2)Is there potential for a difficult laryngoscopy?

yes ↓   no ————————————————→ Proceed

3)Can a supralaryngeal ventilation be used? Ω

yes ↓   no —————————————

4)Is the stomach empty?¥

yes ↓   no ————————————————→ Awake or SV

5) Will the patient tolerate an apneic period?

yes ↓   no —————————————

Proceed with induction, SLA must be present

†consider procedure, and patient, surgical and anesthesiologist's preference
Ω face mask, LMA, combitube, etc.   ¥ i.e., is there an aspiration risk?

Figure 1. The Airway Approach Algorithm.

The Difficult Airway Algorithm of the American Society of Anesthesiologists.
Rosemblatt WH. Anesth and analg.2003;96:1233

ESRA2007 grupo de trabajo

VAD en Cirugía Ambulatoria

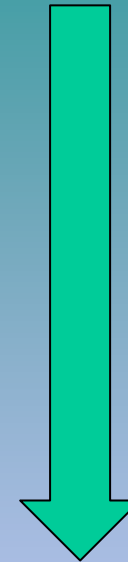**R. García-Aguado** (coordinador)

CHGUV. Valencia

J. Pérez-Cajaraville.

CU. Navarra. Pamplona
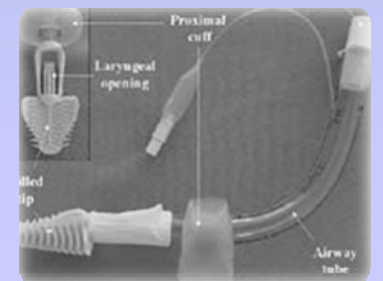
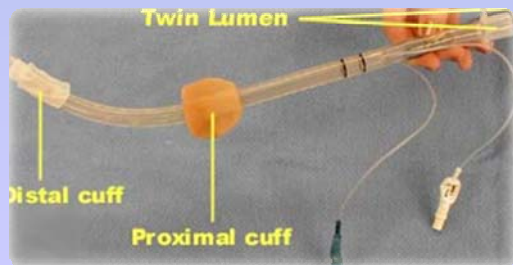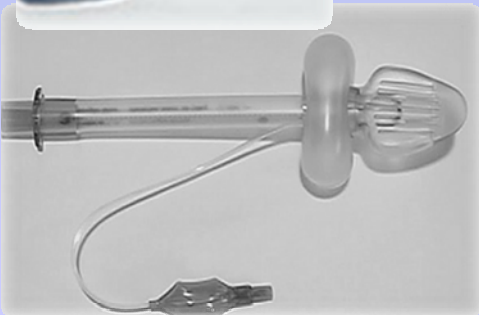**J. Cortiñas** .
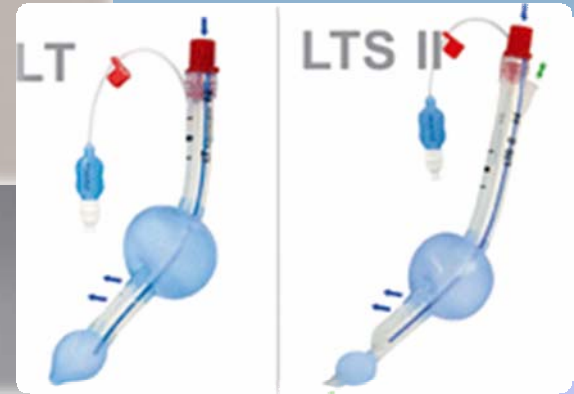
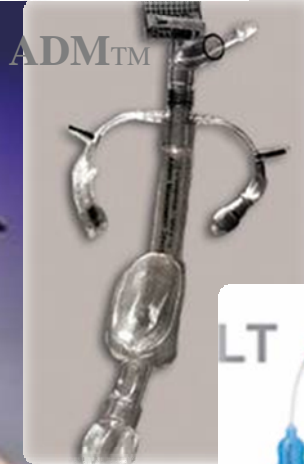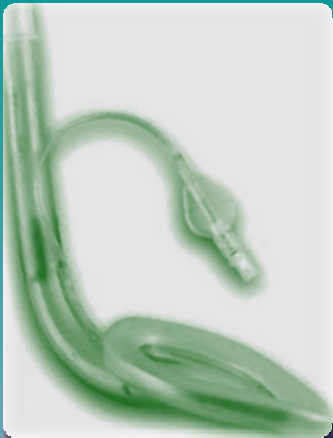H. Santiago de Compostela. La Coruña

A. Planas.

H. La Princesa , Madrid

R. Ortiz de la Tabla.

H. de Valme, Sevilla

J. Viñoles.

H. Dr Peset Valencia

ELABORAR ALGORITMO VAD EN CA

Mascarilla Laríngea SOFT-SEAL de Portex

ADM™

LT

LTS II

Twin Lumen

Distal cuff

Proximal cuff

Proximal cuff

Laryngeal opening

Airway tube

Advances in airway management for outpatients

Craig R. Bailey

Purpose of review

As outpatient anaesthesia increases in volume so does research, especially in ways to reduce morbidity from relatively minor complications such as sore throat and hoarseness, as well as aiming to reduce costs and length of hospital stay. The past year has produced many studies in which newer airway devices have been compared with the laryngeal mask airway and this review evaluates them all.

Recent findings

The relatively recent introduction of the ProSeal laryngeal mask airway shows promise when insertion of a gastric tube is preferred in patients breathing spontaneously, whilst the intubating laryngeal mask airway has demonstrated its usefulness in those situations where the patient prefers to be anaesthetized but intubation may be difficult following classic laryngoscopy. The cuffed oropharyngeal airway and combitube probably only have a place in emergency airway management rather than elective anaesthesia.

Summary

Despite the introduction of new airway devices, some of which have specific indications for use, the classic laryngeal mask airway remains the 'gold standard' with which newer devices are compared. Whilst some of these new devices show promise in the outpatient setting, further research is required before their universal acceptance.

Keywords

anaesthesia, airway, day case, laryngeal mask airway

Introduction

In the year under review there have been some interesting developments in outpatient airway management and I will summarize the developing roles of what I consider to be noninvasive airways; that is, devices that are not endotracheal tubes. The classic laryngeal mask airway (LMA) remains the 'gold standard' of these and newly introduced equipment is compared with this device. Management of the paediatric airway has been discussed in a previous issue of this journal [1**] and will not be mentioned in detail here.

The classic laryngeal mask airway

Traditionally the LMA has been utilized in healthy non-obese fasted patients breathing spontaneously in the supine position for operations involving surface anatomy which are of short to medium duration. Several advantages proposed for the LMA in anaesthesia include ease of use, safety profile, haemodynamic stability and economics. In a study of day-stay patients by Todd [2], the LMA was compared with conventional endotracheal intubation in patients receiving dental treatment. The author found that using the LMA resulted in shorter recovery time and was cheaper. Eltzschig *et al.* [3] studied the effect of tracheal intubation or LMA insertion on intraocular pressure in strabismus patients undergoing balanced anaesthesia with sevoflurane and remifentanil. Such was the effect of the anaesthetic drugs used that there were no significant differences between the groups!
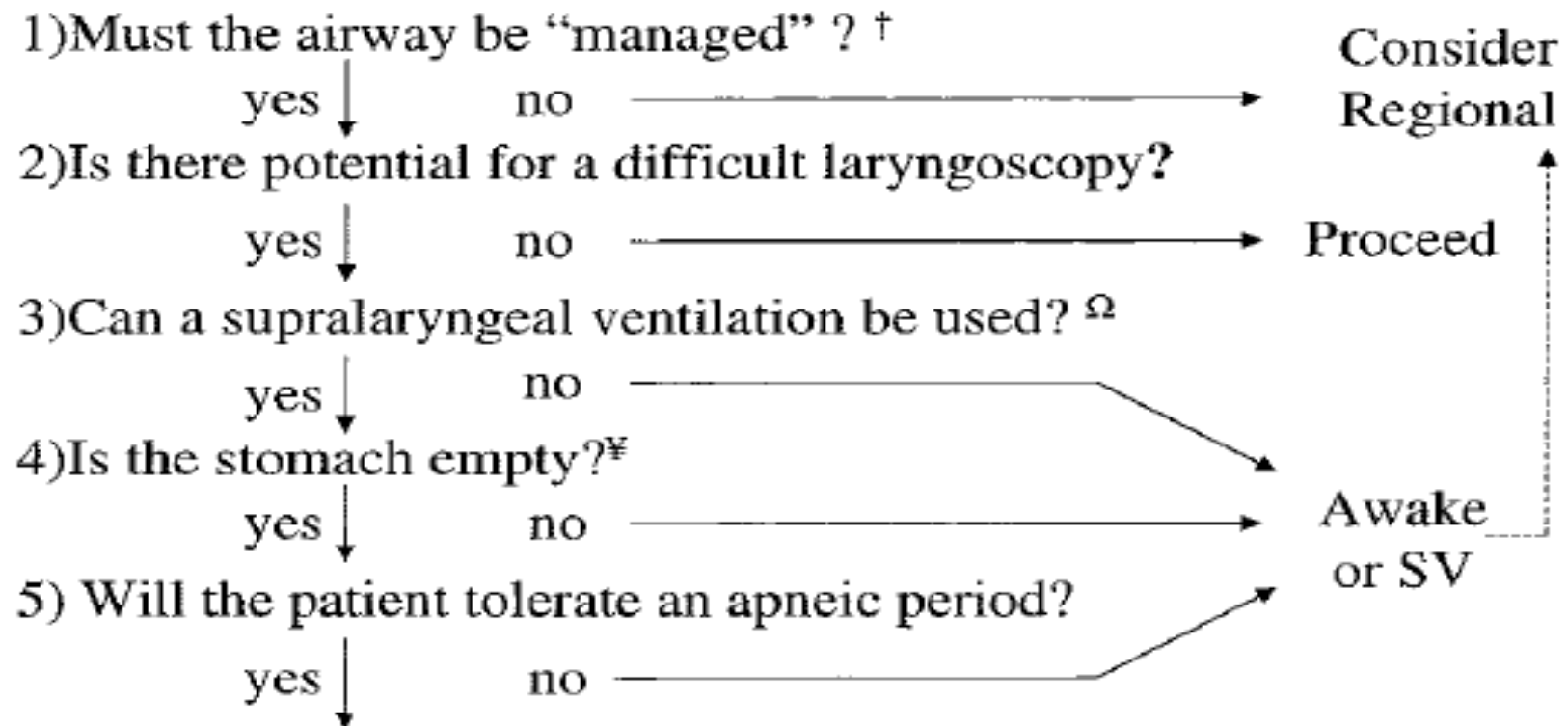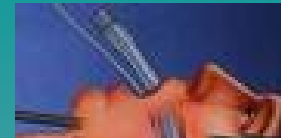
Patient and clinical situations	Techniques	Surgical procedures
Children		/Nasal polypectomy
		al resection
Old patients		lectomy
		cement
		y
Obesity		surgery
		ction
		nt
Respiratory disease (peak inspiratory pressures are expected to be > 2		
Oropharyngeal pathology		
Laryngotracheal pathology	sthesia	
Non-fasted patients		omy
Difficult airway		
Illness or labile patient		
Radiotherapy		
Burning patients		Minimally invasive neurosurgery

Nuevos DEG

- Los nuevos DEG especificamente diseñados para reducir el riesgo de aspiración.

  - 5 para separar el tracto respiratorio y digestivo

    - I-gel

    - Tubo laríngeo(LTS II) y la version desechable (LTS-D)

    - MLP

    - MLSupreme

  - 1 el SLIPA para actuar como reservorio

- En la mayoría de ellos la capacidad de prevención no ha sido verificada y simplemente se asume

- El dispositivo para el que existe una mayor evidencia es la MLP

Gibbison B, Cook TM, Seller C. Case series: protection from aspiration and failure of protection from aspiration with the i-gel airway. Br J Anaesth 2008;100: 415–17.

1) Must the airway be "managed" ? [†]

   yes ↓   no ————————————————→ Consider Regional

2) Is there potential for a difficult laryngoscopy?

   yes ↓   no ————————————————→ Proceed

3) Can a supralaryngeal ventilation be used? [Ω]

   yes ↓   no ————————————↘

4) Is the stomach empty? [¥]

   yes ↓   no ————————————————→ Awake or SV

5) Will the patient tolerate an apneic period?

   yes ↓   no ————————————↗

Proceed with induction, SLA must be present

†consider procedure, and patient, surgical and anesthesiologist's preference
Ω face mask, LMA, combitube, etc.   ¥ i.e., is there an aspiration risk?

Figure 1. The Airway Approach Algorithm.
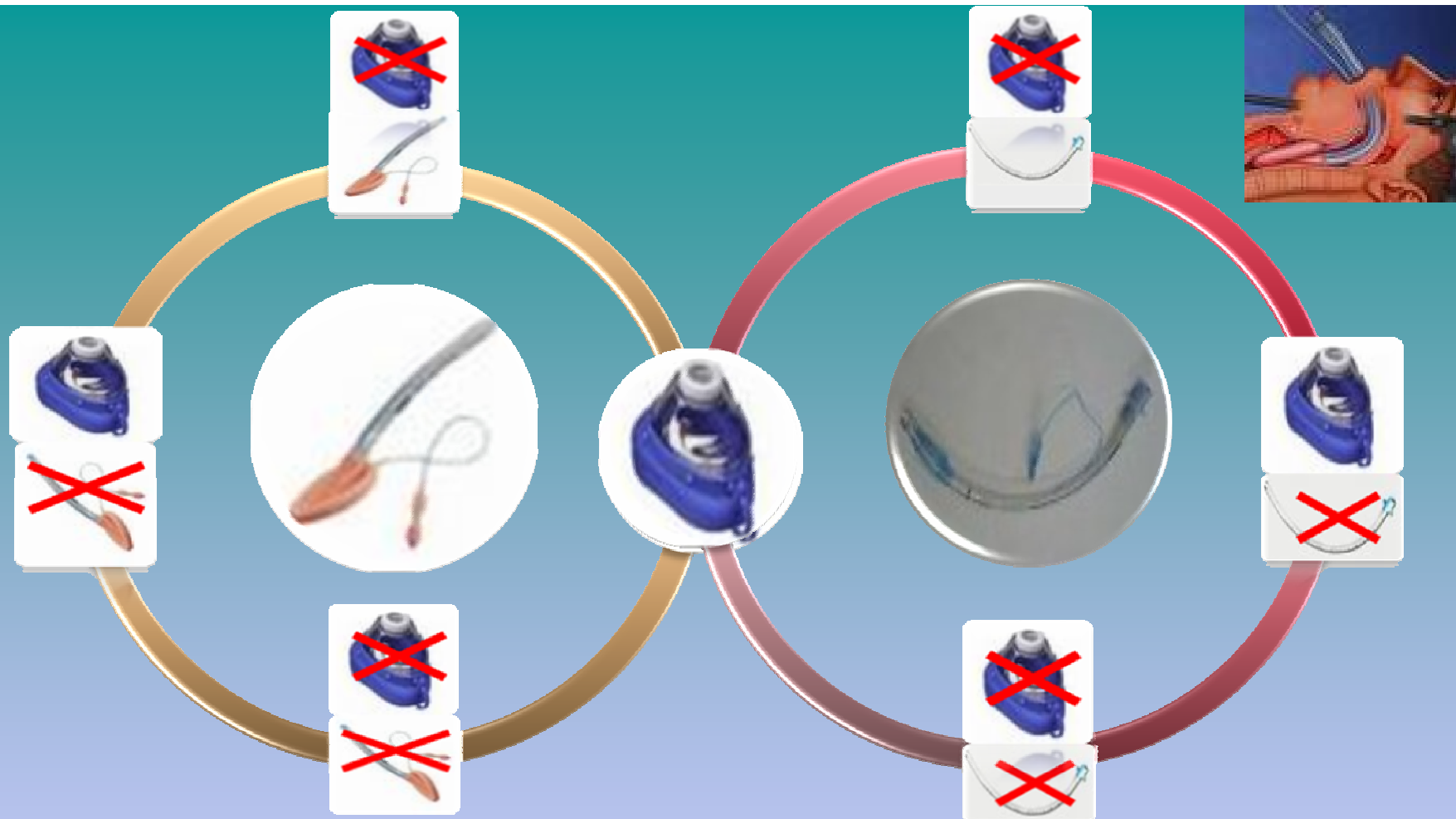
ALGORITMO VAD USANDO DEG

Definición de VAD en CMA

Es aquella en la que un anestesiólogo experimentado podría tener dificultad para mantener **la ventilación** del paciente utilizando la máscara facial (MF) o cualquier otro dispositivo extraglótico (DEG) o intraglótico(DIG)
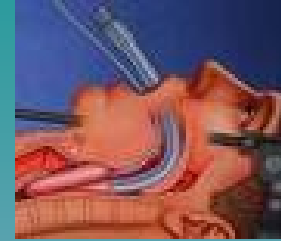
Consideramos: VAD primaria (No ventilación con MF) y VAD secundaria (No ventilación con DEG ó No IOT)

= Difícil, Muy difícil ó imposible

Algoritmo VAD usando DEG

→ imprevista

⇒ prevista

Evaluación previa VA

Evaluación previa de la VA

Dificultad en MF (difícil 1'6%, imposible 0'6%)

IMC elevado	Paladar alto y arqueado
Edad avanzada	Falta de dientes
Alto grado mallampati	Incisivos prominentes
Distancia TM corta	Barba
Cuello corto y grueso	Historia de ronquidos
Limitación flexo-extensión cervical y apertura bucal	

Identificar los factores reversibles

Evaluación previa de la VA

Dificultad en ML

Inserción imposible:

Apertura bucal <1'5cm
Ángulo orofaringeo < 90°

➢ Mallampati I- III: no afecta la inserción de la ML
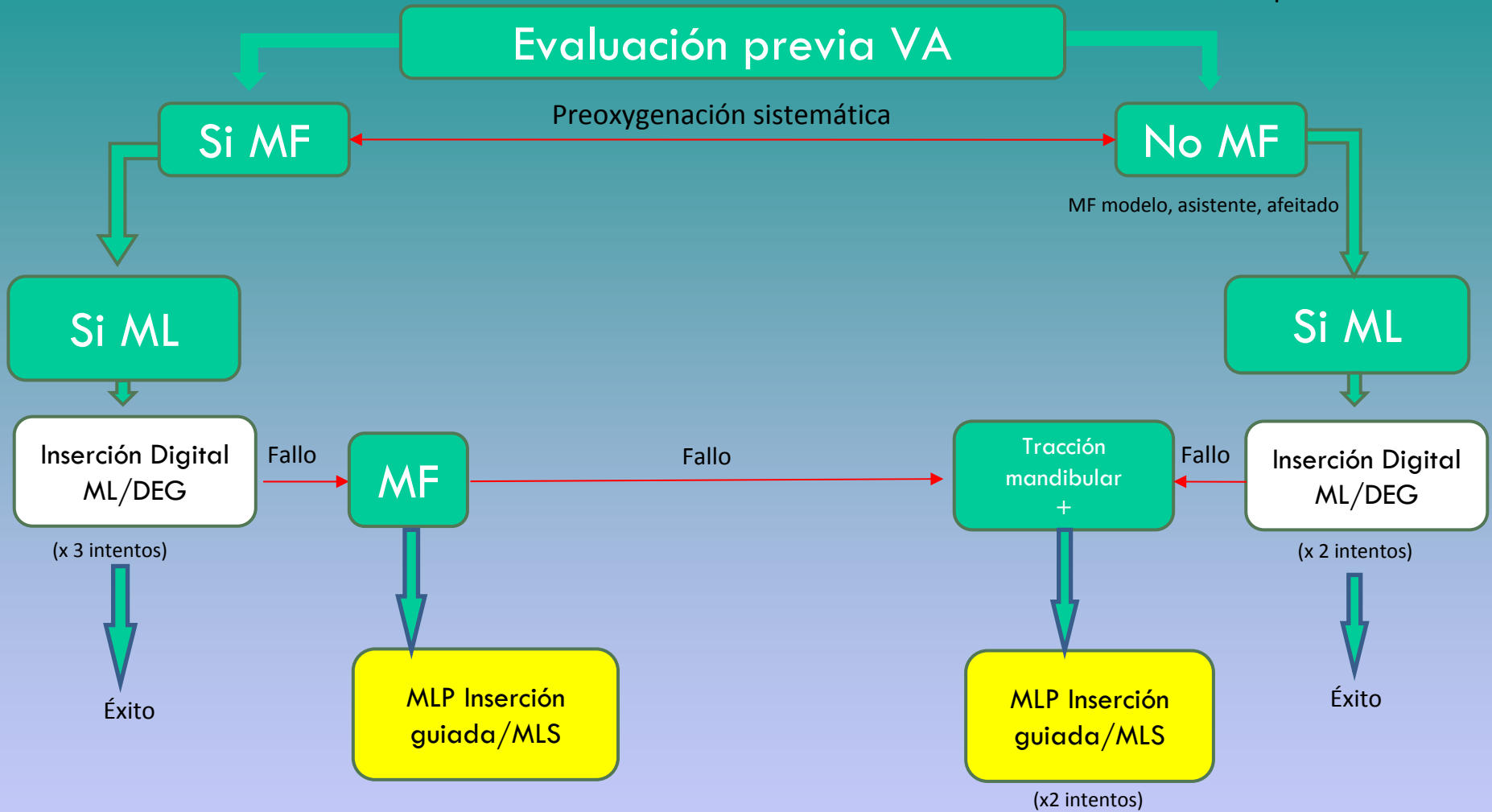➢ Pocos datos en Mallampati IV

Algoritmo VAD usando DEG

→ imprevista
→ prevista

Evaluación previa VA

Preoxigenación sistemática

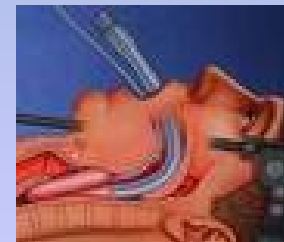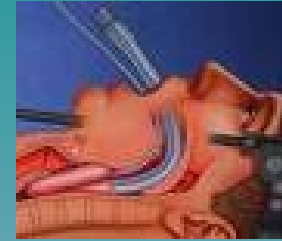# Algoritmo VAD usando DEG

→ imprevista
⇒ prevista

Evaluación previa VA

Preoxygenación sistemática

Si MF ← → **No MF**

MF modelo, asistente, afeitado

Si ML **Si ML**

Inserción Digital ML/DEG → Fallo → **MF** → Fallo → Tracción mandibular + ← Fallo ← Inserción Digital ML/DEG

(x 3 intentos) (x 2 intentos)

Éxito

MLP Inserción guiada/MLS

MLP Inserción guiada/MLS

(x2 intentos)

Éxito

Técnicas guiadas

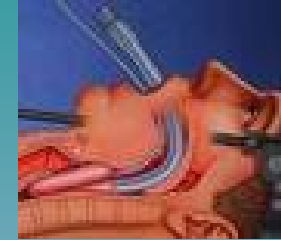Técnicas no guiadas

Test de malposición
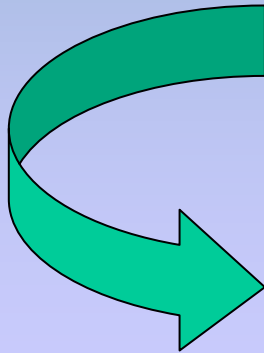
No DEG

1.- Malposición

- Ausencia de fuga de aire
- Paso de una sonda
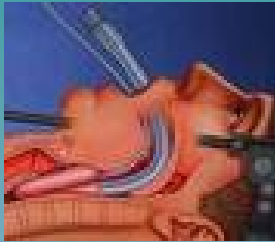- Posición del mordedor

No DEG

1.- Malposición

- Ausencia de fuga de aire
- Paso de una sonda
- Posición del mordedor

Reinserción con técnica guiada

1° Tracción mandibular

No mejora

Reflejo de cierre glótico

Profundizar anestesia/ BNM

1° Tracción mandibular
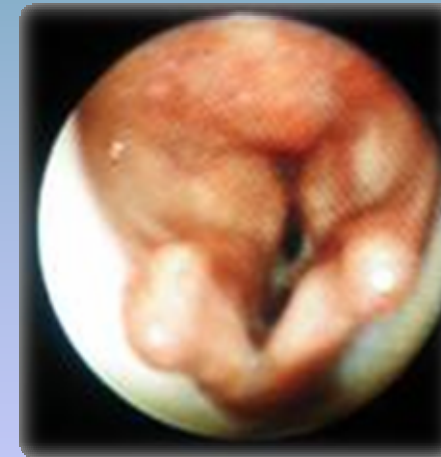
No mejora

Mejora

2° Desinflado del manguito

No mejora

Mejora

Reflejo de cierre glótico

Pliegue de la epiglotis

Compresión glótica/supraglótica Plegamiento hacia el centro del manguito

Pofundizar anestesia/ BNM

Reinserción con Laringoscopia/ Traccionando de la mandíbula

Insertar tamaño menor

Algoritmo VAD usando DEG

imprevista
prevista

Evaluación previa VA

Si MF

No MF

No ML y/o No IOT

MLP Inserción guiada/MLS

MLP / MLS Ventilación Espontánea

Apnea

MLP Inserción guiada/MLS

Asegurar ventilación

Éxito

Algoritmo VAD usando DEG

IMPREVISTA →
PREVISTA ⇒

Evaluación previa VA

PREOXIGENACIÓN SISTEMÁTICA

Si VF ← → **No VF**

Seleccionar MF
Ayudante, Rasurar barba

Si ML **No ML y/o No IOT** **Si ML**

| Inserción digital ML/DEG 1 | No → | VF | No | | Tracción mandibular + | No ← | Inserción digital ML/DEG 1 |

(máximo 3 intentos)

*

**
***

*

(máximo 2 intentos)

Éxito

MLP guiada/MLS

MLP / MLS RESPIRACIÓN ESPONTÁNEA — Apnea → MLP guiada/MLS

Éxito

(máximo 2 intentos)

Asegurar ventilación — NO VENTILACIÓN → **RESCATE**

Éxito

*   AG (Apnea)
** Inhalatoria ó iv con ventilación espontánea
*** Sedación Consciente

Rescate

- Insertar DEG con otro mecanismo de acción

- No tiene sentido utilizar otro del mismo grupo si el sello no ha sido satisfactorio

A Proposed Classification and Scoring System for Supraglottic Sealing Airways: A Brief Review

Donald M. Miller, MB, ChB, FFA (SA), PhD

Department of Anaesthetics, Guy's, King's and St. Thomas' School of Medicine, King's College, London

We provide an approach to evaluating sealing supraglottic airways by using a classification based on a sealing mechanism. Three main sealing mechanisms are identified, thus defining three groups: cuffed perilaryngeal sealers, cuffed pharyngeal sealers, and uncuffed anatomically preshaped sealers. We provide a brief overview of supraglottic airways and present a scoring system that is relevant to particular requirements. Scoring airways for routine applications is the example provided.
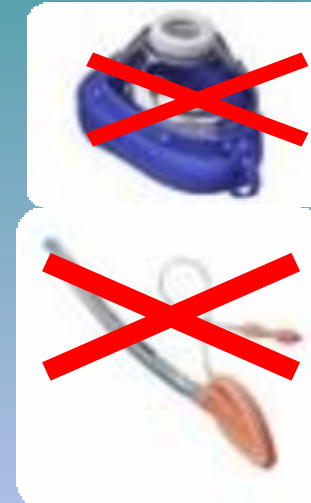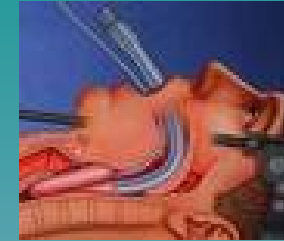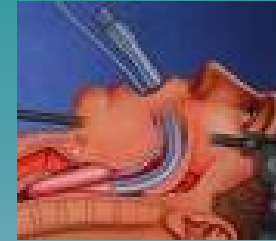
(Anesth Analg 2004;99:1553–9)

ESCENARIOS

ESPECÍFICOS

ESCENARIOS ESPECÍFICOS

Prevista ó Imprevista

ESCENARIOS ESPECÍFICOS

1.- Si VF / no ML previsto

2.- Si VF/ no ML imprevisto

3.- No VF/ no ML previsto

4.- No VF/ no ML imprevisto

PLAN A — INSERCIÓN DEG

PLAN B — ASEGURAR INSERCIÓN DEG

PLAN C — ASEGURAR VENTILACIÓN

PLAN D — RESCATE

1.-Sí VF/ No ML imprevista

PLAN A

INSERTAR DEG

1.- Malposición, obstrucción
2.- No más de 3 intentos

PLAN B

ASEGURAR INSERCIÓN DEG

Inserción guiada MLP/ MLS

2.-Sí VF/ No ML prevista

PLAN B

ASEGURAR INSERCIÓN DEG

Inserción guiada MLP/ MLS

PLAN C

ASEGURAR VENTILACIÓN

1°.- Valorar obstrucción
2°.- Reinsertar MLP con laringoscopia

2.-Sí VF/ No ML prevista

PLAN B

Inserción guiada MLP/ MLS

PLAN D

RESCATE

**1°: DEG de rescate
2°: VF**

3.- NO VF/ No ML prevista

PLAN B

Inserción guiada MLP/ MLS en V.ESPONTÁNEA

- Inducción ev
- Inducción inhalatoria
- Sedación consciente + A. tópica

NO VF/ No ML prevista

PLAN B

Inserción guiada MLP/ MLS en V.ESPONTÁNEA

PLAN C

ASEGURAR VENTILACIÓN

1. **Obstrucción mecánica: tiraje**
2. **Desinflar manguito**

NO VF/ No ML prevista

PLAN B

Inserción guiada MLP/ MLS en V.ESPONTÁNEA

PLAN D

RESCATE

1°: DEG rescate
2°: recuperar

4.- NO VF/ No ML imprevista

1° VAD primaria

PLAN A

1° Intentar VF: ayudante, guedel, cambio mascarilla

2° No VF: inserción DEG digital (2 intentos)

NO VF/ No ML imprevista

2° Rescate de VAD secundaria

URGENCIA !!!

1° DEG de rescate o recuperar v. Espontánea

2° IOT de emergencia

3° Cricotirotomía

Conclusiones

➤ La VAD en el paciente ambulatorio debe ser considerada específicamente

➤ La ML es el "gold-standard" de los DEG

➤ La MLP tiene importantes ventajas sobre la ML , permitiendo realizar técnicas de inserción guiadas

➤ La MLP podría ser el plan "A" en el manejo de la VAD con DEG

Gràcies!!