GENERAL ANESTHESIA

Difficult Airway Management

Intraoperative teaching · CA-1

THE QUESTION

Where the evidence disagrees

Videolaryngoscopy should be incorporated as a first-intention technique into routine clinical practice for airway management, not just as a rescue device.

THE EVIDENCE

What each source contributes, and how strong it is

Study design first — a cohort and a randomised trial do not carry the same weight.

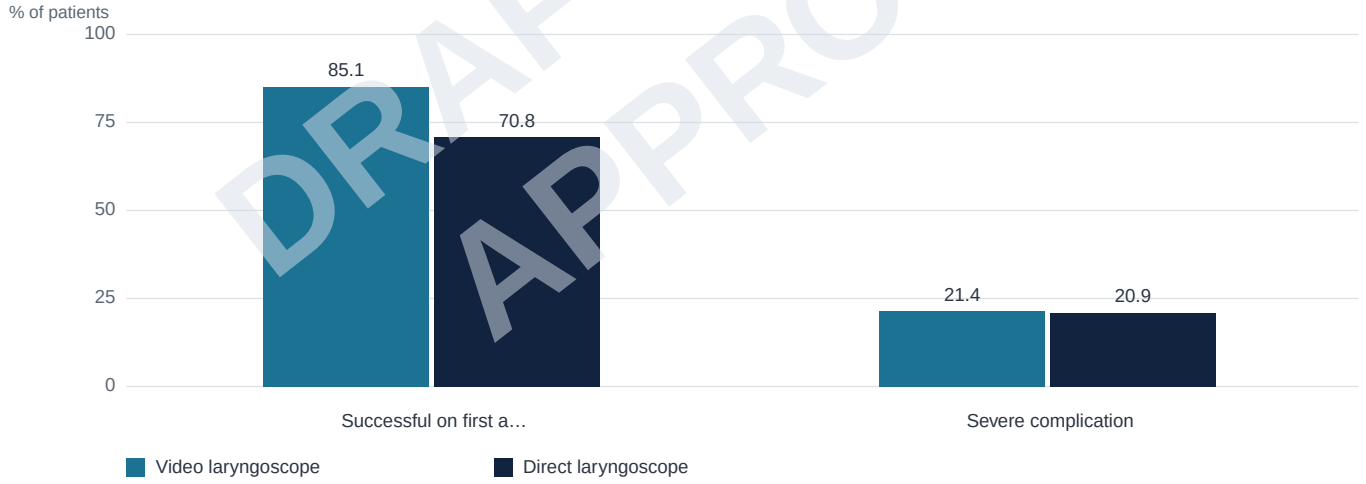
Design	Year	Journal	What it found
Other	2023	Journal of personalized medicine	Use videolaryngoscopy routinely for airway management
Other	2025	analgesia and critical care	Consider videolaryngoscopy or fiberoptic bronchoscopy for difficult intubation
Other	2023	Acta clinica Croatica	Combine videolaryngoscopy and BIE for rescue intubation
Other	2025	Indian journal of anaesthesia	Failed primary airway: Code D, rescue device until SpO2 "e95%

4 resolved citations behind this deck; every point above traces to one of them.

THE NUMBERS

Video laryngoscopy raised first-attempt success without changing complications

First pass is the outcome that matters; the complication rate is why.



A 14.3-point absolute gain in first-attempt success, with severe complications essentially unchanged — the benefit is in getting the tube first time, not in a safer intubation once it goes badly.

DEVICE trial, NEJM 2023 · PMID 37326325

IN PRACTICE

What the cohorts and reviews add

4 findings, each on the slide that follows.

JOURNAL OF PERSONALIZED MEDICINE 2023

Use videolaryngoscopy routinely for airway management

Videolaryngoscopy should be incorporated as a first-intention technique into routine clinical practice for airway management, not just as a rescue…

ANALGESIA AND CRITICAL CARE 2025

Consider videolaryngoscopy or fiberoptic bronchoscopy for difficult intubation

For anticipated difficult intubation or cervical pathology, consider using videolaryngoscopy or fiberoptic bronchoscopy instead of direct…

ACTA CLINICA CROATICA 2023

Combine videolaryngoscopy and BIE for rescue intubation

When direct laryngoscopy, videolaryngoscopy

INDIAN JOURNAL OF ANAESTHESIA 2025

Failed primary airway: Code D, rescue device until SpO2 "e95%

If the primary airway plan fails, activate 'Code D' for help and attempt rescue with any of the three devices (tracheal tube, SGA, or face mask)…

IN PRACTICE

Use videolaryngoscopy routinely for airway management

Other · Journal of personalized medicine

Videolaryngoscopy should be incorporated as a first-intention technique into routine clinical practice for airway management, not just as a rescue device.

Airway Management: The Current Role of Videolaryngoscopy, Journal of personalized medicine 2023 · PMID 37763095

IN PRACTICE

Consider videolaryngoscopy or fiberoptic bronchoscopy for difficult intubation

Other · analgesia and critical care

For anticipated difficult intubation or cervical pathology, consider using videolaryngoscopy or fiberoptic bronchoscopy instead of direct laryngoscopy.

Difficult airway management in adults: Insights from an observational cohort study on the use of videolaryngoscopy and fiberoptic bronchoscopy in a direct laryngoscopy-based practice, Journal of anesthesia, analgesia and critical care 2025 · PMID 41068968

IN PRACTICE

Combine videolaryngoscopy and BIE for rescue intubation

Other · Acta clinica Croatica

When direct laryngoscopy, videolaryngoscopy, and a Bonfils intubation endoscope (BIE) fail sequentially, combining videolaryngoscopy with BIE can be used as a rescue technique for endotracheal tube guidance.

COMBINED USE OF VIDEOLARYNGOSCOPE AND BONFILS INTUBATION ENDOSCOPE AS RESCUE OPTION FOR DIFFICULT AIRWAY MANAGEMENT: A CASE REPORT, Acta clinica Croatica 2023 · PMID 38746612

IN PRACTICE

Failed primary airway: Code D, rescue device until SpO2 "e95%

Other · Indian journal of anaesthesia

If the primary airway plan fails, activate 'Code D' for help and attempt rescue with any of the three devices (tracheal tube, SGA, or face mask) without hierarchy until SpO2 remains "e95%.

All India Difficult Airway Association 2025 Guidelines for the management of unanticipated difficult airway in adults under general anaesthesia, Indian journal of anaesthesia 2025 · PMID 41293142

INDICATIONS

When this is the right block

2022 ASA PRACTICE GUIDELINES FOR MANAGEMENT OF THE DIFFICULT AIRWAY, ANESTHESIOLOGY 2022

Working from a current multisociety framework

The 2022 Practice Guidelines for Management of the Difficult Airway were produced by the American Society of Anesthesiologists together with eleven other societies including the All India Difficult Airway Association, the European Airway Management Society, the Society for Airway Management and the Society of Critical Care Anesthesiologists.

DAS GUIDELINES FOR AWAKE TRACHEAL INTUBATION IN ADULTS, ANAESTHESIA 2020

Awake intubation when difficulty is anticipated

The Difficult Airway Society's awake tracheal intubation guidelines state that the technique has a high success rate and a favourable safety profile but is underused when difficult airway management is anticipated, and are written to lower the threshold for using it.

COCHRANE REVIEW, VIDEOLARYNGOSCOPY VERSUS DIRECT LARYNGOSCOPY, 2022

A hyperangulated videolaryngoscope for the predicted difficult intubation

In Cochrane subgroup analysis, hyperangulated videolaryngoscopes reduced failed intubation more strongly in known or predicted difficult airways (RR 0.29, 95% CI 0.17 to 0.48) than in the overall population (RR 0.51), a statistically significant subgroup difference.

TIME TO OXYGENATION FOR CANNULA AND SCALPEL FRONT-OF-NECK ACCESS, ANAESTHESIA 2019

Emergency front-of-neck access as the declared last step

In an ovine wet-lab simulation with 43 doctors performing both techniques after standardised training, a cannula technique failed once and the scalpel-bougie technique failed 15 times (OR 0.07), with median time to oxygenation of 65 versus 90 seconds. This is simulation, not patients — take it as evidence about training and technique, not about outcomes.

CONTRAINDICATIONS

When it is not

DAS GUIDELINES FOR AWAKE TRACHEAL INTUBATION IN ADULTS, ANAESTHESIA 2020

Inducing anaesthesia without a stated plan for failure

Management of unsuccessful awake tracheal intubation is one of the areas for which the Difficult Airway Society made explicit recommendations, alongside indications, procedural setup, checklists, oxygenation, topicalisation, sedation and verification of tube position. If the failure step is not stated before induction, it does not exist.

EMERGENCY FRONT-OF-NECK ACCESS SCOPING REVIEW, RESUSC PLUS 2024

Leaning on the front-of-neck literature for reassurance

A scoping review screened 18,934 papers and included 69 studies covering 4457 front-of-neck access attempts, but found only one randomised controlled trial, marked heterogeneity that precluded pooling, and no study confined to patients in cardiac arrest.

DEVICE TRIAL, VIDEO VERSUS DIRECT LARYNGOSCOPY, N ENGL J MED 2023

Assuming a videolaryngoscope fixes the physiology

In the DEVICE trial, severe complications during intubation occurred in 21.4% of the video-laryngoscope group and 20.9% of the direct-laryngoscope group, an absolute difference of 0.5 percentage points, despite a 14.3-point advantage in first-attempt success.

DECLINING INCIDENCE OF AWAKE TRACHEAL INTUBATION, CAN J ANAESTH 2023

Assuming the skills will be there when you need them

Awake tracheal intubation use fell by about 50% across seven years at one tertiary centre. The authors are explicit that whatever this means for morbidity, it has implications for training opportunities and the maintenance of competence in the procedure.

PEARLS

What experience adds

PROSPECTIVE COHORT OF AWAKE FIBREOPTIC INTUBATION PRACTICE, ANAESTHESIA 2017

Awake fibreoptic intubation is safer than its reputation

In a prospective series of 600 awake fibreoptic intubations, the failure rate was 1.0% and 11.0% were complicated, most often by multiple attempts (4.2%), over-sedation (2.2%) or desaturation (1.5%). The only significant association with complications was how many the operator had done before.

TIME TO OXYGENATION FOR CANNULA AND SCALPEL FRONT-OF-NECK ACCESS, ANAESTHESIA 2019

The cannula was faster in the wet lab; the patients are a different question

In the ovine simulation, one cannula attempt failed against 15 scalpel-bougie failures out of 43 operators, with successful oxygenation at a median of 65 versus 90 seconds — after a standardised reading, lecture and benchtop training that most real emergencies do not come with.

Put plan C and plan D in the room, not down the corridor

Open the difficult airway trolley before induction and name aloud which drawer holds the supraglottic device and which holds the scalpel. Anything you have to send someone to fetch is not part of your plan.

IN THE ROOM

What this changes about the next case

Colour is the strength of the evidence behind each step, not the urgency.

1. **1**
   Videolaryngoscopy should be incorporated as a first-intention technique into routine clinical practice for airway management, not just as a rescue device.
2. **2**
   For anticipated difficult intubation or cervical pathology, consider using videolaryngoscopy or fiberoptic bronchoscopy instead of direct laryngoscopy.
3. **3**
   When direct laryngoscopy, videolaryngoscopy, and a Bonfils intubation endoscope (BIE) fail sequentially, combining videolaryngoscopy with BIE can be used as a rescue technique for endotracheal tube guidance.
4. **4**
   If the primary airway plan fails, activate 'Code D' for help and attempt rescue with any of the three devices (tracheal tube, SGA, or face mask) without hierarchy until SpO2 remains "e95%.

KEY TAKEAWAYS

What to carry into the next case

> **Use videolaryngoscopy routinely for airway management**
> Journal of personalized medicine 2023

> **Consider videolaryngoscopy or fiberoptic bronchoscopy for difficult intubation**
> analgesia and critical care 2025

> **Combine videolaryngoscopy and BIE for rescue intubation**
> Acta clinica Croatica 2023

> **Failed primary airway: Code D, rescue device until SpO2 "e95%**
> Indian journal of anaesthesia 2025

Use videolaryngoscopy first-line; if it fails sequentially with other tools, activate Code D and use any device to maintain oxygenation.

QUESTIONS I'LL ASK YOU IN THE ROOM

1. What is your plan if you cannot ventilate with a bag-valve mask?
2. How do you assess for a potentially difficult airway before induction?
3. What are the key steps in the ASA difficult airway algorithm?
4. When would you consider using a video laryngoscope versus a direct laryngoscope?

ORAL BOARDS STEM

> *After induction in a patient with a short thyromental distance and limited neck extension, direct laryngoscopy yields a grade 3 view and mask ventilation is becoming difficult.*

BOARD QUESTIONS

1. In the DEVICE trial of 1,417 critically ill adults undergoing tracheal intubation, what was the rate of successful intubation on the first attempt with video versus direct laryngoscopy?

   A. 85.1% versus 70.8%
   B. 70.8% versus 85.1%
   C. 92.3% versus 88.1%
   D. 85.1% versus 82.0%

2. DEVICE showed a large advantage in first-attempt success for video laryngoscopy. What happened to severe complications, and what does the combination of those two results actually mean?

3. Who performed the intubations in DEVICE, and why does that detail matter when you generalise the result to your own practice?

ANSWER KEY

1. A. 85.1% versus 70.8%

An absolute risk difference of 14.3 percentage points (95% CI 9.9 to 18.7). The trial was stopped for efficacy at its single preplanned interim analysis, and 91.5% of intubations were performed by an emergency medicine resident or critical care fellow.

DEVICE trial, NEJM 2023 · PMID 37326325

2. Severe complications were essentially identical: 21.4% in the video group versus 20.9% in the direct group, an absolute risk difference of 0.5 percentage points with a confidence interval spanning zero. Safety outcomes including oesophageal intubation, dental injury and aspiration were also similar. So the benefit is in getting the tube on the first attempt, not in making the intubation itself safer once things go badly. First-pass success is worth having on its own terms, but the trial does not license a claim that video laryngoscopy prevents peri-intubation deterioration.

A trial can move a process measure convincingly and leave the patient-centred harm unchanged. Both halves belong in the teaching.

DEVICE trial, NEJM 2023 · PMID 37326325

3. 91.5% of intubations were performed by an emergency medicine resident or a critical care fellow — that is, by operators still in training. The trial was conducted in 17 emergency departments and ICUs among critically ill adults. That makes the finding most directly applicable to trainees intubating critically ill patients in those settings, and it leaves genuinely open how much of the 14-point advantage would persist for an experienced anaesthetist intubating an elective patient in theatre, where baseline first-pass success is already high.

The operator and the setting are part of the result. A large effect measured in training hands may shrink in experienced ones simply because the ceiling is closer.

DEVICE trial, NEJM 2023 · PMID 37326325

Use videolaryngoscopy first-line; if it fails sequentially with other tools, activate Code D and use any device to maintain oxygenation.

SOURCES

[1] Airway Management: The Current Role of Videolaryngoscopy, Journal of personalized medicine 2023 · PMID 37763095

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[3] COMBINED USE OF VIDEOLARYNGOSCOPE AND BONFILS INTUBATION ENDOSCOPE AS RESCUE OPTION FOR DIFFICULT AIRWAY MANAGEMENT: A CASE REPORT, Acta clinica Croatica 2023 · PMID 38746612

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