18th International Congress of Anesthesiology, Critical Care and Pain

ERCP in NORA: A Clinical Guide

A simple visual guide to prone position, shared airway and unstable blood pressure

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One trade-off, four stops

Everything in this talk hangs on the same question: can I still rescue this patient?

1. Why NORA is a different sport
2. Prone position: what it buys and what it costs
3. Airway and oxygen: good news, real limits
4. Blood pressure: the 3-step rescue
5. One flow to take home



Why is ERCP in NORA a different sport altogether?

A shared airway

The endoscopist works inside the same space you need for the tube and mask.

A turned patient

Prone or semi-prone means the face is down and access is physically limited.

Long, deep sedation

Biliary work is painful and repetitive; sedation deepens as the case goes on.

A borrowed room

Fluoroscopy suite, different team, unfamiliar layout, equipment not at arm's reach.

NORA has two villains: a shared airway and limited access

پیش از هر تصمیمی، باید بدانیم این بیمار چه ریسک‌هایی دارد.
ریسک آسپیراسیون: انسداد، خونریزی گوارشی یا محتوای معده.
ریسک راه هوایی: آپنه خواب، چاقی، بیماری ریوی.
ریسک قلبی: ذخیره کم قلبی، آریتمی، مصرف داروهای ضد فشار.
و ریسک پروسیجر: مدت، پیچیدگی، و انتظار دسترسی سخت برای اندوسکوپیست.
این ارزیابی را قبل از ورود بیمار انجام می‌دهیم، نه وقتی اشباع اکسیژن افت کرد. بر همین اساس، برنامه راه هوایی، برنامه دارویی و برنامه نجات را از قبل می‌نویسیم و با بیمار و تیم به اشتراک می‌گذاریم.
یک نکته مهم: سن و کلاس ASA به‌تنهایی تعیین‌کننده انتخاب MAC یا بیهوشی عمومی نیست؛
این ریسک آسپیراسیون و ماهیت پروسیجر است که تصمیم را می‌سازد.

If you remember nothing else, remember where the difficulty lives.

Every decision here is one trade-off: procedural access versus rescue

One question decides almost everything for you: how easily can I rescue this patient?



Procedural access versus rescue capability

Access can be improved. Rescue readiness must be traded for it, deliberately and in advance.

01

Who benefits

Prone is chosen for the endoscopist, not for the patient's physiology.

02

Who pays

The patient pays in airway access, chest compliance and venous return.

03

What to say

State the trade-off out loud before induction, then document it.



Prone position buys access; it does not buy safety.



Does prone position make ERCP safer? Not in the way people assume

Prone position delivers

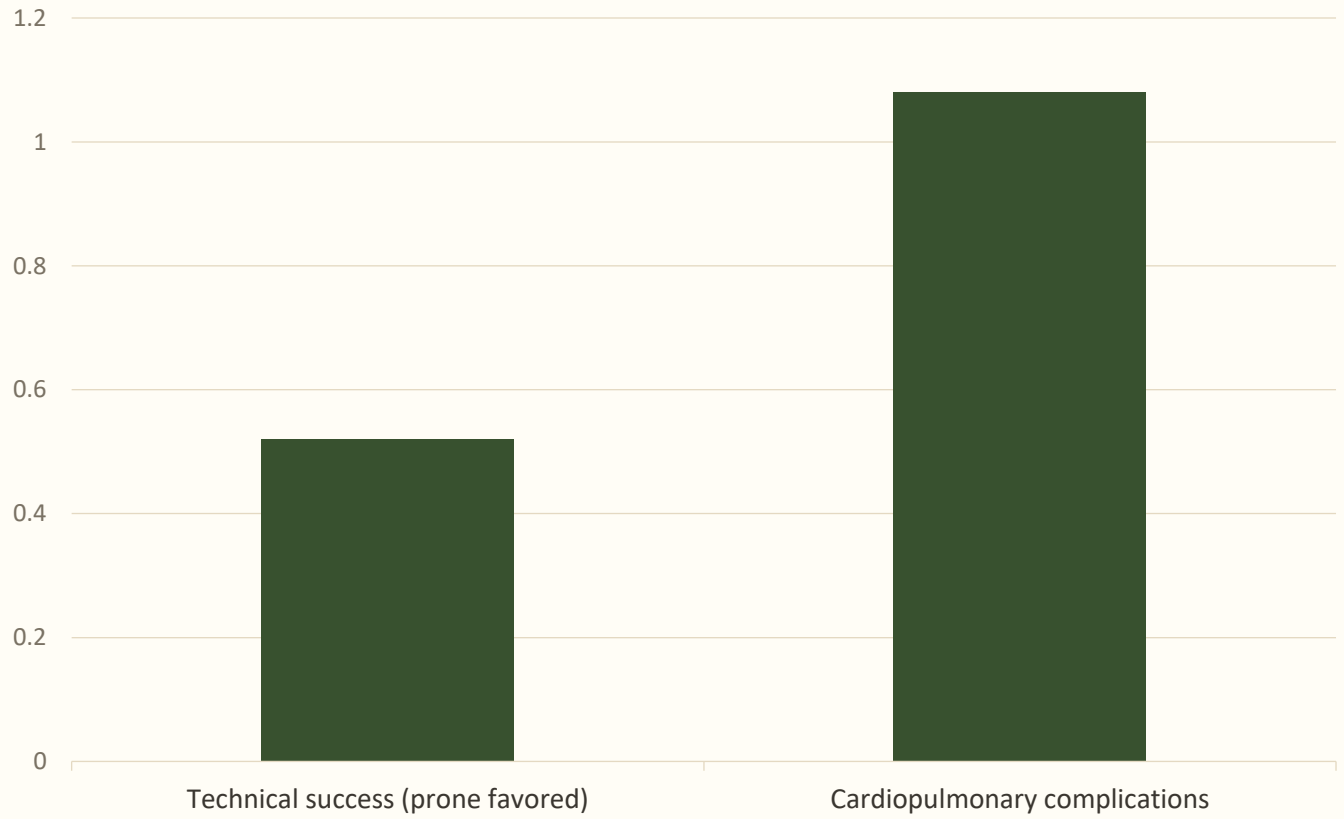
- Higher technical success
- Better papilla exposure and fluoroscopy
- Shorter cannulation time

But safety is a draw

- Cardiopulmonary complications: no significant difference
- High heterogeneity across studies
- Not a proven safety advantage

Prone wins on success. It does not win on cardiopulmonary safety.

The meta-analysis shows a win for access and a neutral safety signal



11 studies, 24,285 patients

Below 1.0 favors prone. Success clearly moves; complications do not.

Prone positioning transforms the workspace, not the patient's physiology

Before: the airway is yours

- Face up: mask, laryngoscope and suction are all within reach in seconds.

- از فشار شکمی روی لبه تخت پرهیز کنید، راه هوایی و لاین‌ها را ایمن کنید، و پس از چرخاندن بیمار، فشار خون و تهویه را دوباره ارزیابی کنید.

Helping the endoscopist delays rescue.

After: access is reversed

Face down: the airway is far from your hands. Turning an intubated patient back takes a coordinated team, and the review describes up to five staff.

When saturation falls in prone: the rescue checklist

A pre-agreed three-step plan for desaturation in a patient you cannot easily reach

01

1. Halt the procedure

Stop the endoscopy. Remove the scope. Ask for silence in the room.

02

2. Open the airway

Clear the mouth, suction, and reposition the head. Check capnography or chest movement.

03

3. Escalate, do not improvise

Follow the pre-agreed plan: mask, supraglottic device, or turn supine and intubate.

MAC or general anesthesia: what should actually drive the choice?

Choose MAC when these are low

- Aspiration risk
- Procedure length and complexity
- Patient cooperation and airway anatomy

Choose intubation when high

- High aspiration risk or full stomach
- Long, complex or anticipated difficult case
- Unstable oxygenation before you start

Age and ASA alone should not decide the airway.

نکته کلیدی این است :برنده مطلق وجود ندارد .انتخاب بین MACو بیهوشی عمومی، ترکیبی از ریسک آسپیراسیون، مدت و پیچیدگی پروسیجر، و ذخیره قلبی‌ریوی است؛ و همیشه باید امکان تبدیل و نجات را در نظر بگیریم

What does each airway option actually buy you?

Standard cannula

Oxygen only. No ventilation support, no aspiration protection.

HFNO

Better oxygen delivery, but ventilation and airway protection remain unproven.

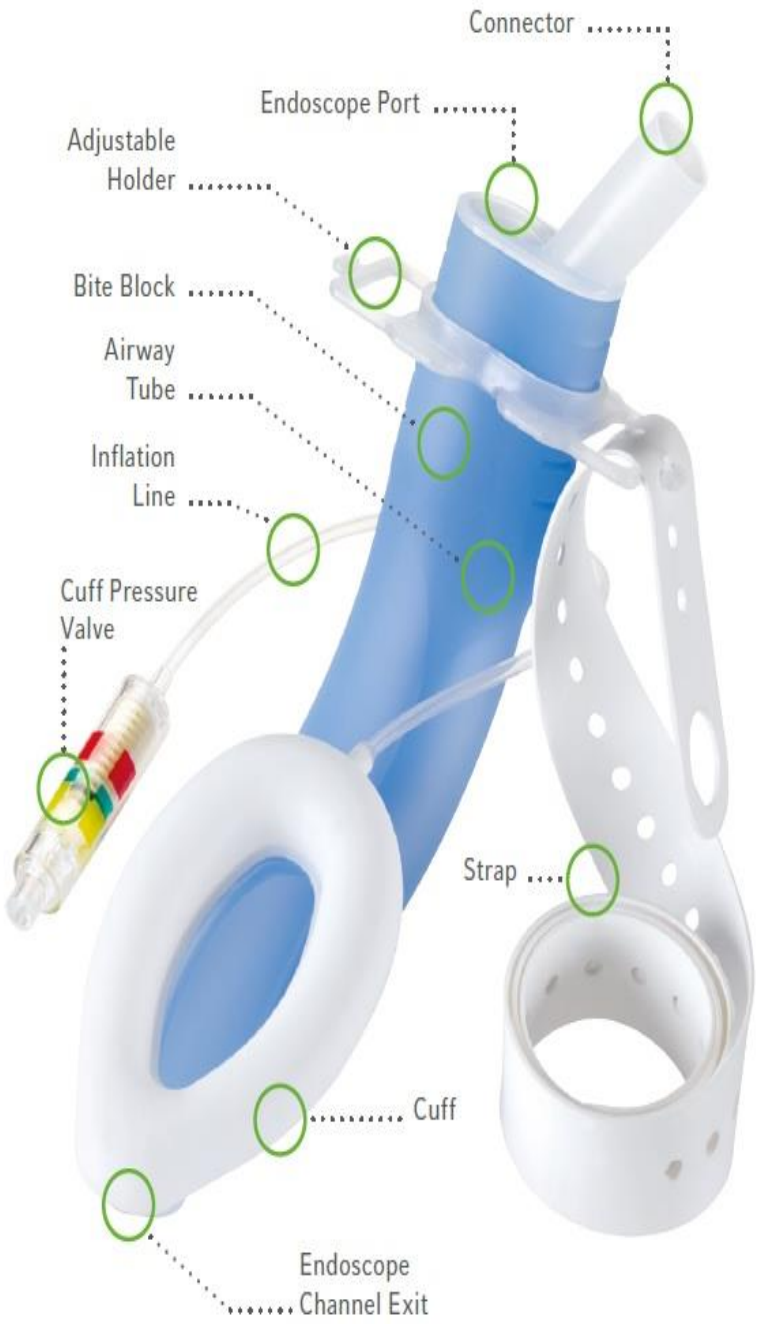
Supraglottic device

Ventilation support and a route for rescue, with leakage and displacement risk.

Endotracheal tube

Protects the airway and guarantees ventilation; needs skill and may slow the endoscopist.




Connector
Endoscope Port
Adjustable Holder
Bite Block
Airway Tube
Inflation Line
Cuff Pressure Valve
Strap
Cuff
Endoscope Channel Exit



Is HFNO a magic bullet? It fixes oxygen, it does not fix pressure

The good

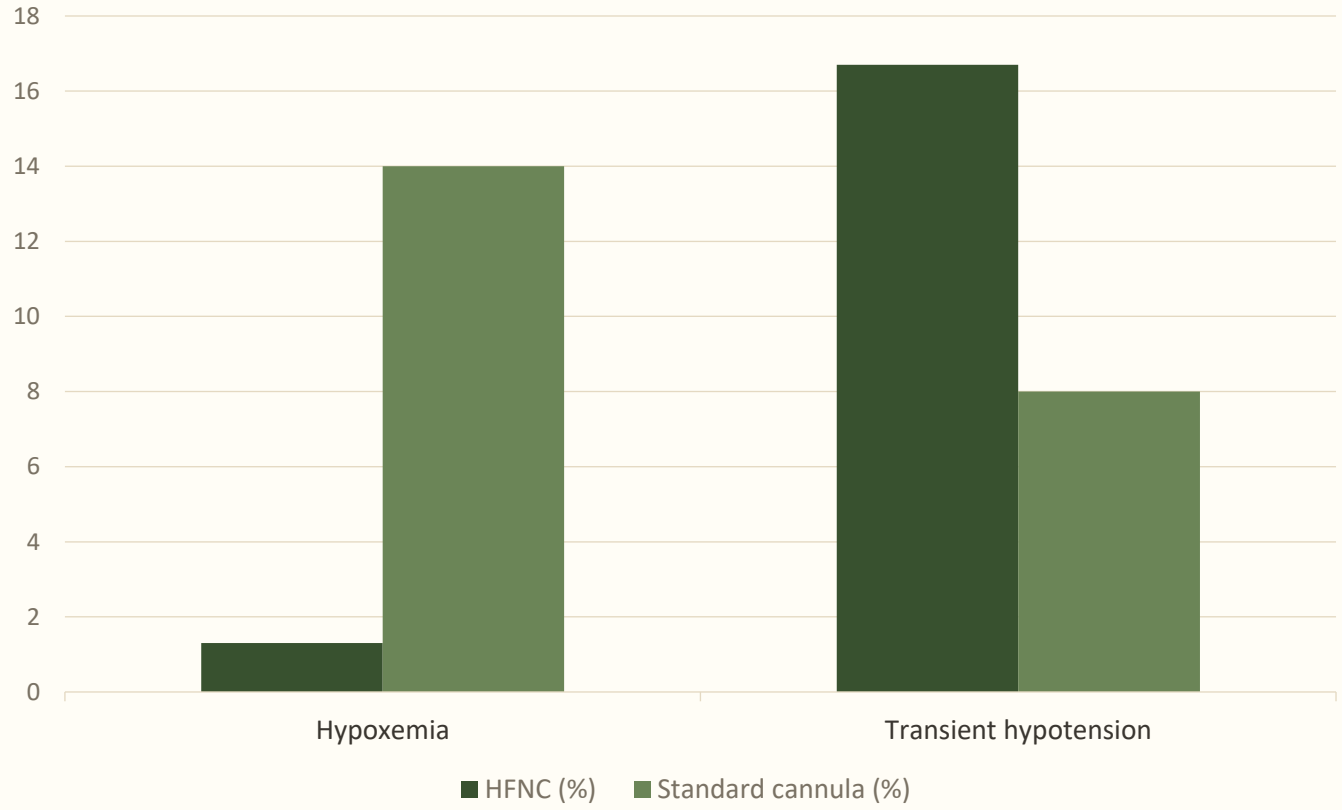
- Reduces hypoxemia compared with low-flow oxygen in several settings
- Improves comfort and keeps the airway accessible for the endoscopist
- Useful bridge when you want to avoid immediate intubation

The bad

- Does not guarantee ventilation
- No aspiration protection
- CO_2 retention needs monitoring, especially in COPD
- Does not treat hypotension

HFNO changes the oxygen problem, not the circulation problem.

The randomized numbers show a two-sided message



300 prone ERCP patients, randomized

HFNC cut hypoxemia more than tenfold — and roughly doubled transient hypotension.

The airway decision matrix: aspiration risk against procedure complexity

Aspiration risk →

Simple case

Low aspiration risk, short case: sedation with standard oxygen and a rescue plan.

Endurance case

Low aspiration risk, long case: HFNO plus capnography and a low threshold to escalate.

Safety case

High aspiration risk, short case: secure the airway first; the tube is cheap insurance.

Complex case

High aspiration risk, long case: intubate and plan the turn with the whole team briefed.

Procedure complexity and duration →

Hypotension is common in ERCP — the exact rate is not a number

جمعیت، تعریف افت فشار و شدت پروسیجر متفاوت است .پیام هر دو یکی است :افت فشار در ERCPشایع است، نه نادر

Expert clinical synthesis

The 3-step hemodynamic rescue: airway, volume, vasopressor

Our synthesis: a reproducible sequence when the pressure falls in a prone patient

1

1. Check airway, reading

Recheck cuff position and artifact, then oxygenation, ventilation and sedation depth.

2

2. Find cause, fill fluid

Look for bleeding, sepsis or raised abdominal pressure. Give fluid if likely hypovolemic.

3

3. Vasopressor, escalate

Start a vasopressor early and titrate to effect. Call for help sooner rather than later.

Recheck the cuff before you treat a number.

Preparation is the real intervention in NORA

Monitoring

ECG, pulse oximetry, non-invasive blood pressure, and capnography when available.

Equipment ready

Suction, airway trolley, supraglottic devices, tube and drugs checked before induction.

Roles assigned

Name who turns the patient and who manages the airway. Rehearse it out loud.

Stop rule

Agree the trigger for halting the procedure and turning the patient supine.

The whole talk in four steps: risk, plan, execute, monitor

One loop you can apply in the room tomorrow morning

1

Risk

Score aspiration risk, OSA and obesity, cardiac reserve, and expected duration.

2

Plan

Choose MAC with HFNO or an advanced airway, and choose the position deliberately.

3

Execute

Position, monitor, and start sedation with the rescue plan already agreed.

4

Monitor

Watch oxygenation and pressure together, and escalate on the first trend.

Three things to take home

Choose the airway by risk. Plan the rescue. Then position. Better oxygenation never cancels the need to watch pressure.

Questions and discussion

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Thank You for Your Attention

Questions and Discussion

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