DSI
a case series

Seth Trueger PGY-4
Resus: Airway
Senior Night
May 15, 2012

MOUNT SINAI SCHOOL OF MEDICINE

DSI?


BiRAP

It's not about plastic in the trachea
it's about oxygen in the lungs

Richard Levitan


Live
Out
Loud
oxygen

Preoxygenation and Prevention of Desaturation During Emergency Airway Management

Scott D. Weingart, MD, Richard M. Levitan, MD

From the Division of Emergency Critical Care, Department of Emergency Medicine, Mount Sinai School of Medicine, New York, NY (Weingart); and the Department of Emergency Medicine, Thomas Jefferson University Hospital, Philadelphia, PA (Levitan).

Patients requiring emergency airway management are at great risk of hypoxemic hypoxia because of primary lung pathology, high metabolic demands, anemia, insufficient respiratory drive, and inability to protect their airway against aspiration. Tracheal intubation is often required before the complete information needed to assess the risk of periprocedural hypoxia is acquired, such as an arterial blood gas level, hemoglobin value, or even a chest radiograph. This article reviews preoxygenation and peri-intubation oxygenation techniques to minimize the risk of critical hypoxia and introduces a risk-stratification approach to emergency tracheal intubation. Techniques reviewed include positioning, preoxygenation and denitrogenation, positive end expiratory pressure devices, and passive apneic oxygenation. [Ann Emerg Med. 2012;59:165-175.]

A **podcast** for this article is available at www.annemergmed.com.

0196-0644/$-see front matter

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INTRODUCTION

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rapid sequence intubation

(noun)

the virtually **simultaneous** administration, **after preoxygenation**, of a potent **sedative** agent and a rapidly acting **neuromuscular blocking agent** to facilitate rapid tracheal intubation **without interposed positive-pressure ventilation**

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rapid sequence intubation

simultaneous

sedative

neuromuscular blocking

positive-pressure ventilation

rapid sequence intubation

simultaneous

sedative

neuromuscular blocking

~~positive-pressure ventilation~~

rapid sequence intubation

after preoxygenation

simultaneous

sedative

neuromuscular blocking

~~positive-pressure ventilation~~

who?


JEDI
I Am One

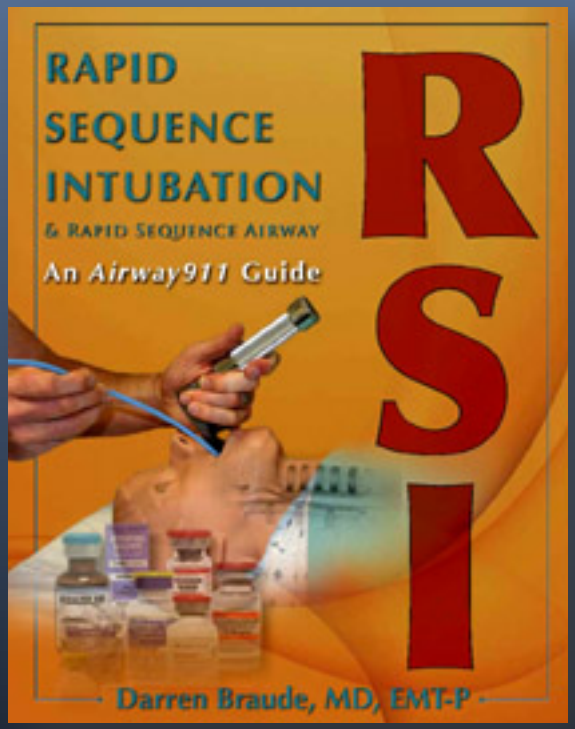
why?


CAUTION
THIS SIGN HAS
SHARP EDGES
DO NOT TOUCH THE EDGES OF THIS SIGN
ALSO, THE BRIDGE IS OUT AHEAD


Multi-Dose Vial
NDC 0703-2394-01
10 mg/mL
Rocuronium
Bromide Injection
For IV Use Only

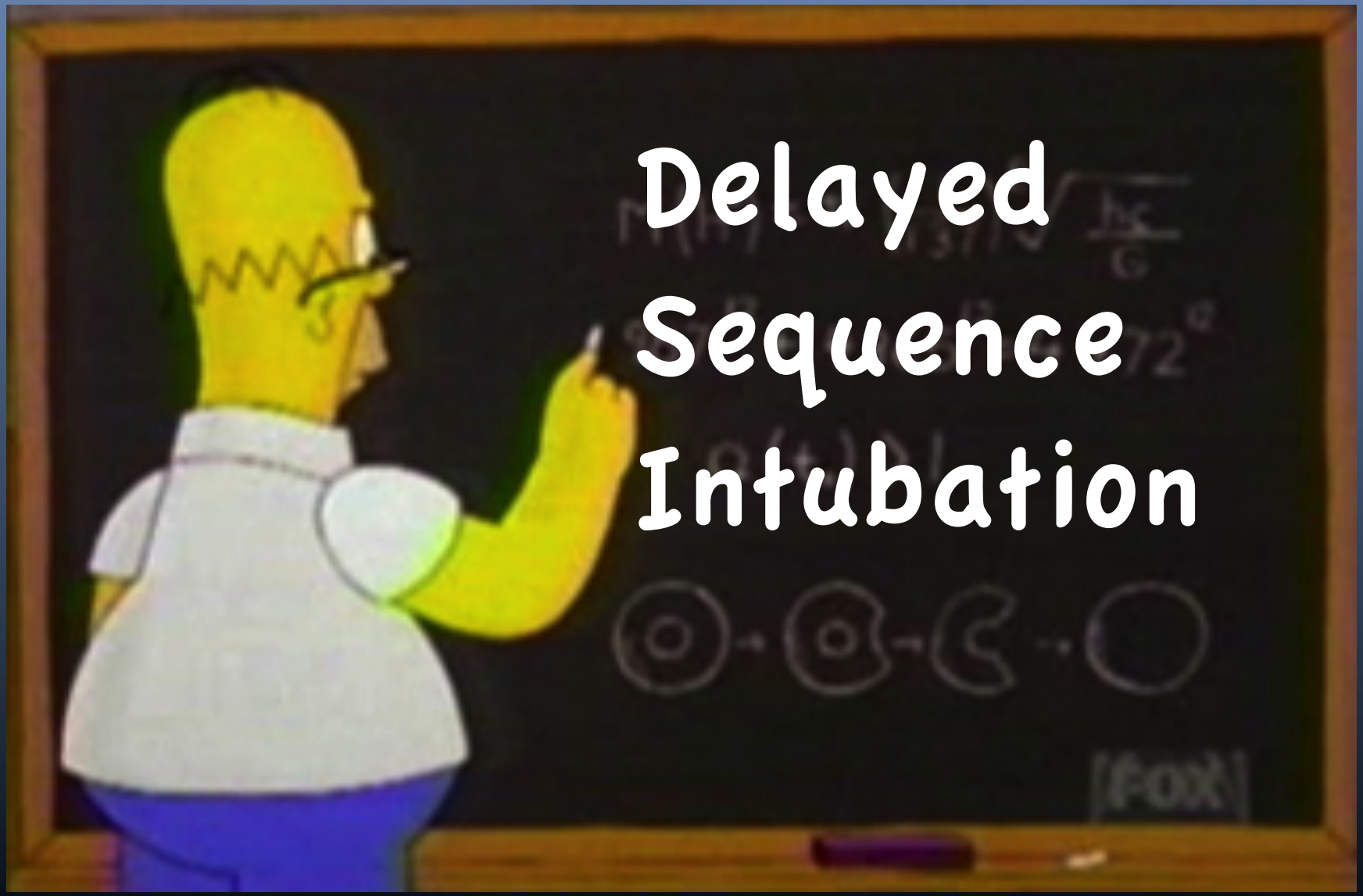

007

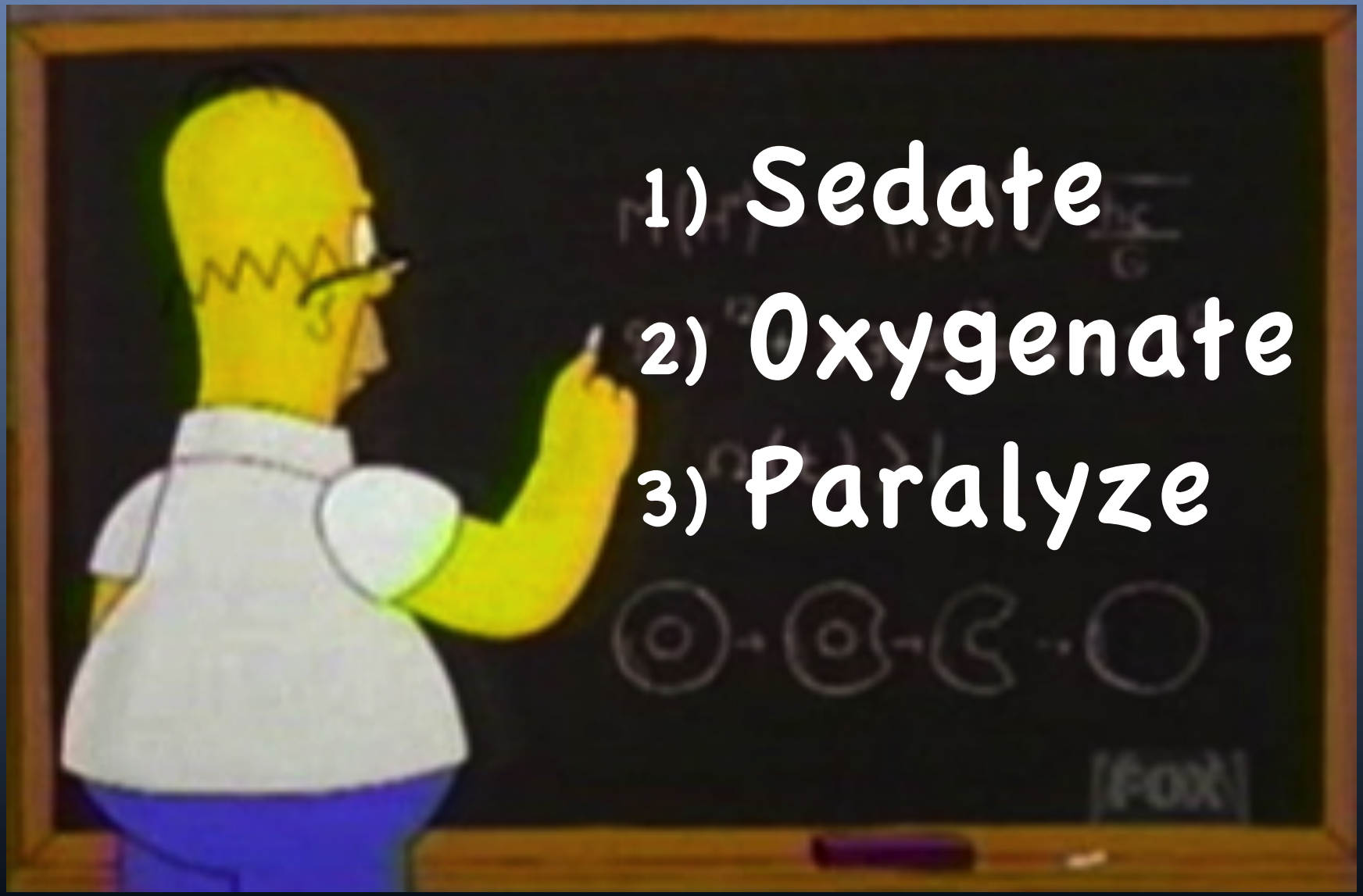
There's got to be a better way!


RAPID
SEQUENCE
INTUBATION
& RAPID SEQUENCE AIRWAY
An Airway911 Guide
RSI
Darren Braude, MD, EMT-P


Multi-Dose Vial
NDC 0703-2394-01
10 mg/mL
Rocuronium
Bromide Injection
For IV Use Only

DSI?


Delayed
Sequence
Intubation


1) Sedate
2) Oxygenate
3) Paralyze
FOX

Emergency Medicine Updates

return if worse

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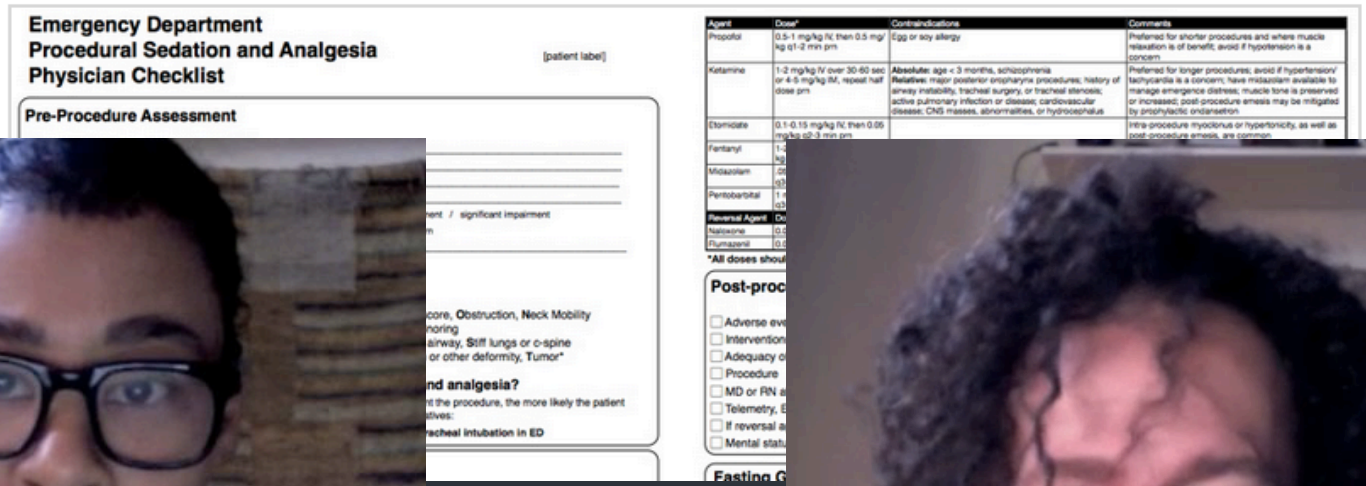
May 8th, 2011

ED Procedural Sedation and Analgesia Checklist

by reuben in PSA & analgesia

2 Comments



Emergency Department
Procedural Sedation and Analgesia
Physician Checklist

[patient label]

Pre-Procedure Assessment

Agent	Dose*	Contraindications	Comments
Propofol	0.5-1 mg/kg IV, then 0.5 mg/kg q1-2 min prn	Egg or soy allergy	Preferred for shorter procedures and where muscle relaxation is of benefit; avoid if hypotension is a concern
Ketamine	1-2 mg/kg IV over 30-60 sec or 4-5 mg/kg IM, repeat half dose prn	**Absolute:** age < 3 months, schizophrenia **Relative:** major posterior oropharynx procedures; history of airway instability, tracheal surgery, or tracheal stenosis; active pulmonary infection or disease; cardiovascular disease; CNS masses, abnormalities, or hydrocephalus	Preferred for longer procedures; avoid if hypertension/tachycardia is a concern; have midazolam available to manage emergence distress; muscle tone is preserved or increased; post-procedure emesis may be mitigated by prophylactic ondansetron
Etomidate	0.1-0.15 mg/kg IV, then 0.05 mg/kg q2-3 min prn		Intra-procedure myoclonus or hypertonicity, as well as post-procedure emesis, are common
Fentanyl	1-2 mcg/kg		
Midazolam	.05 mg/kg		
Pentobarbital	1-2 mg/kg		

Reversal Agent	Dose
Naloxone	0.4 mg
Flumazenil	0.2 mg

*All doses should

Post-proc

- Adverse eve
- Intervention
- Adequacy o
- Procedure
- MD or RN a
- Telemetry, E
- If reversal a
- Mental statu

Fasting G

significant impairment

core, Obstruction, Neck Mobility
horing
airway, Stiff lungs or c-spine
or other deformity, Tumor*

nd analgesia?
t the procedure, the more likely the patient
atives:
racheal intubation in ED

delirious
can’t preoxygenate

delirious

can't preoxygenate

procedural sedation

for

preoxygenation

ketamine
ketofol
dexmedetomidine

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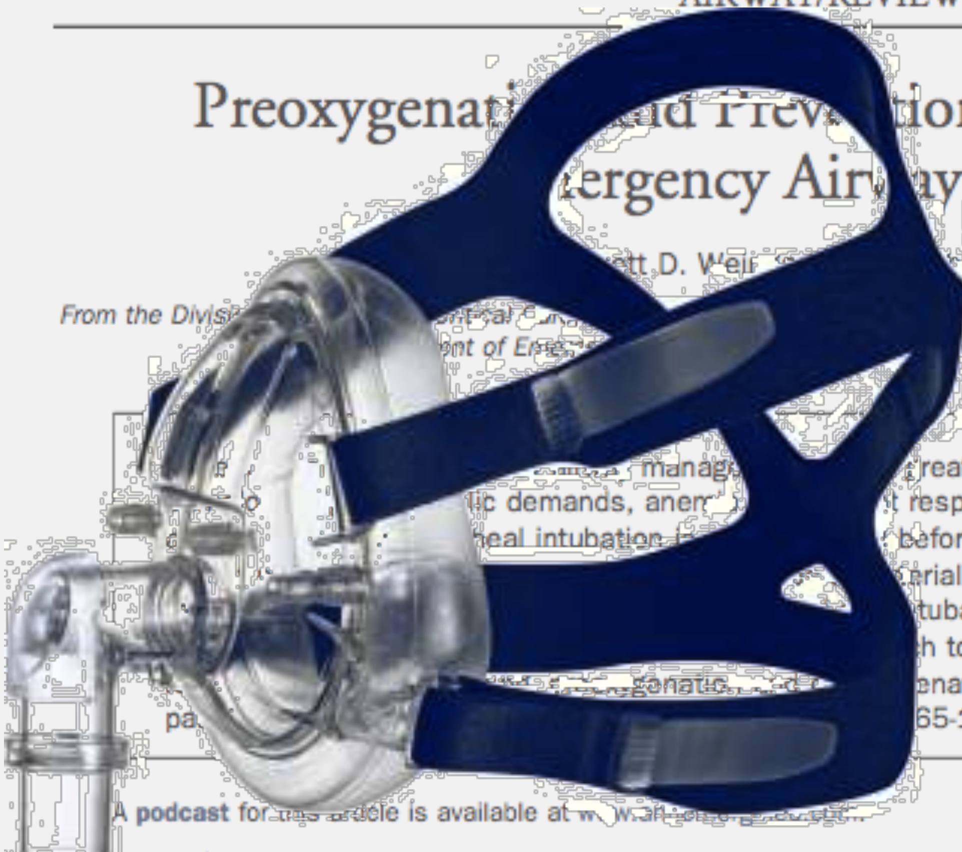

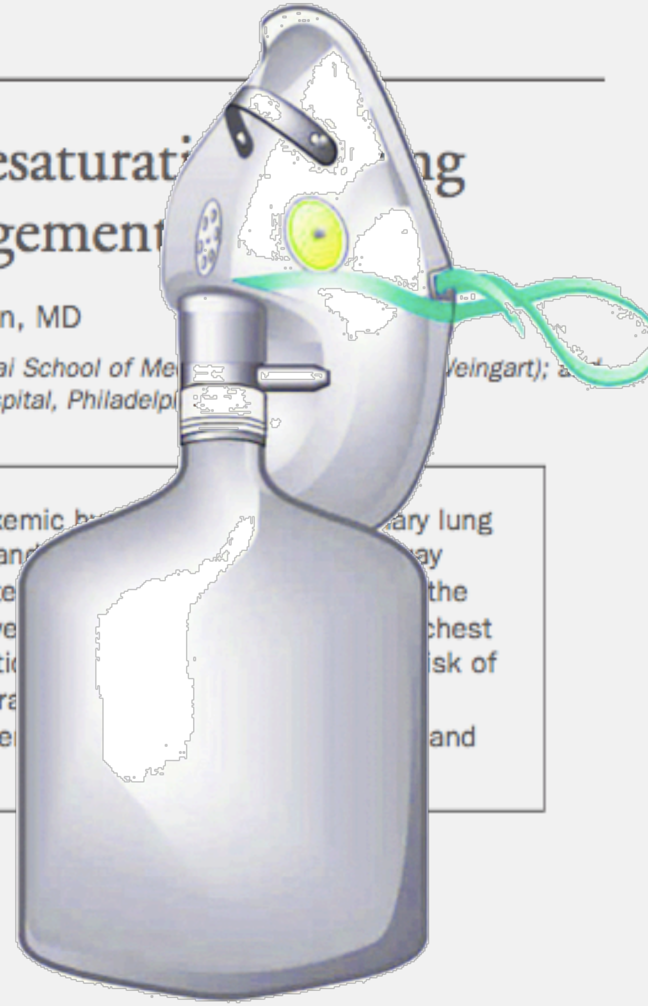

Preoxygenati... ...tion of Desaturati... ...ng ...ergency Air...ay Management

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From the Divis... ...ine, Mount Sinai School of Me... ...Veingart); a...
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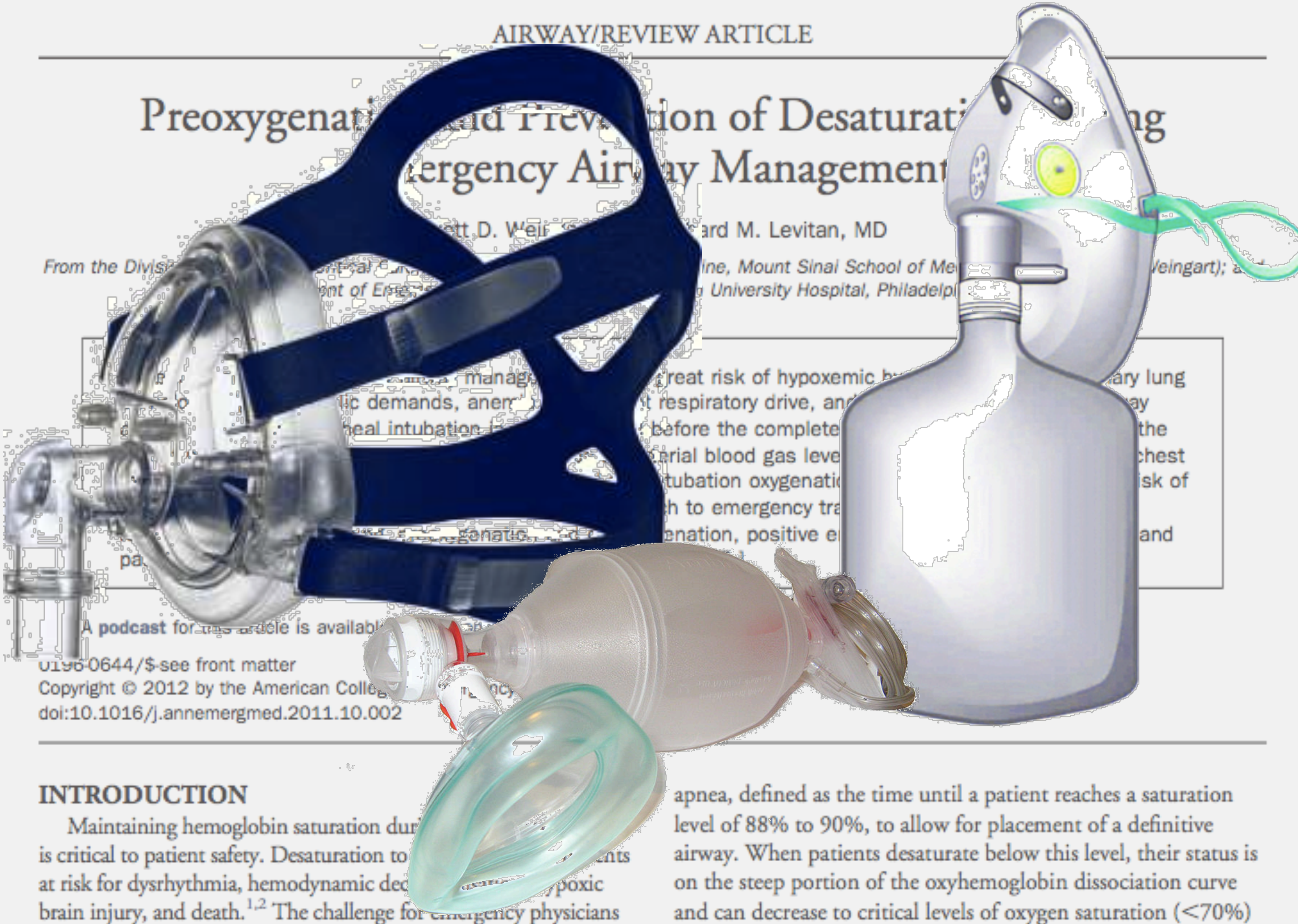

AIRWAY/REVIEW ARTICLE

Preoxygenati... ion of Desaturati... ng
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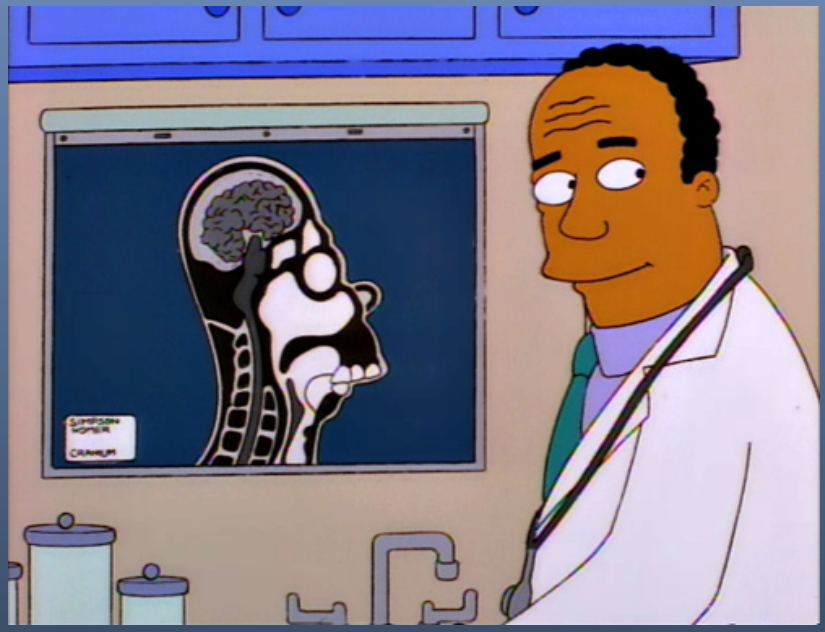
NYC
CONDOM
NYC
CONDOM

what?



case series

retrospective

known DSI

MSSM EHC OSH

chart audits

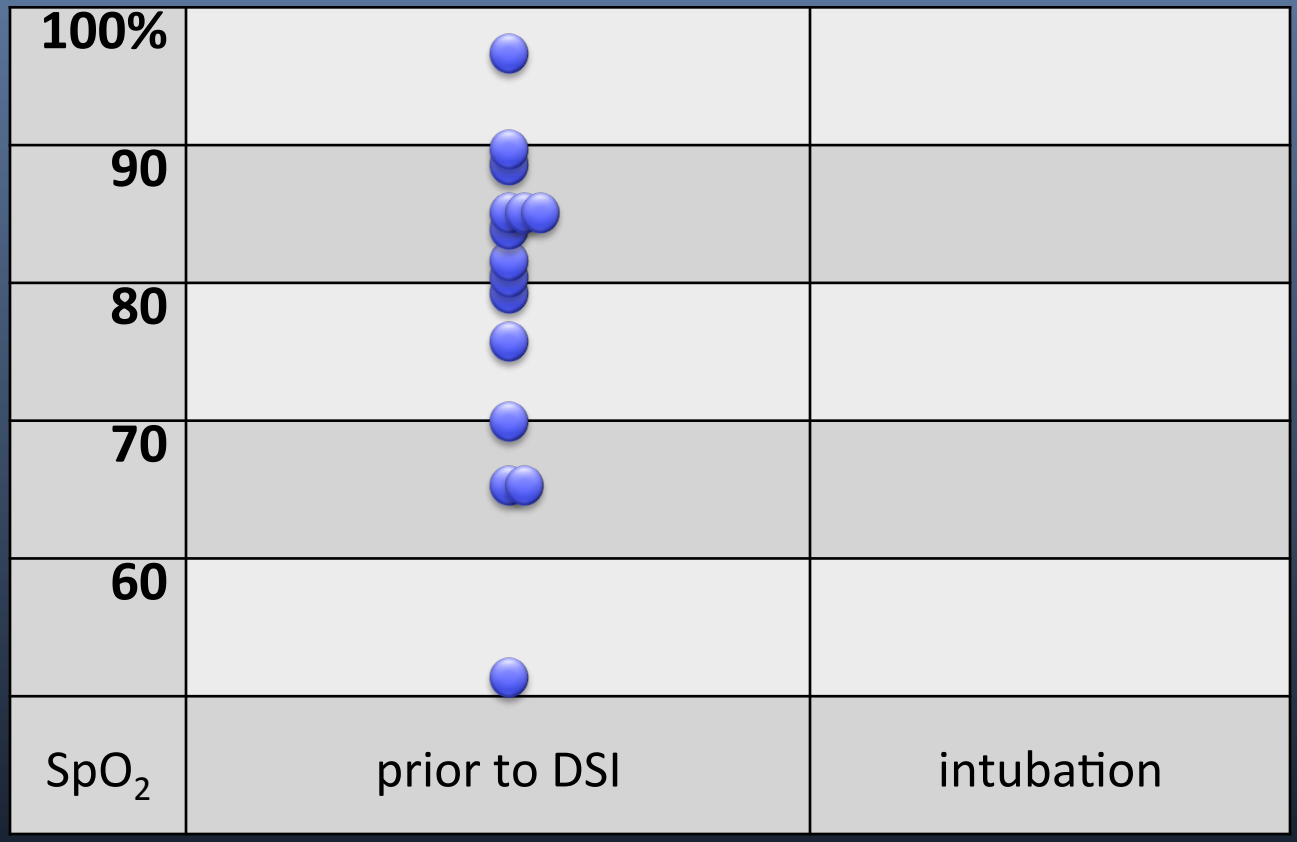
19	Total
7	EHC
1	MSSM
11	OSH

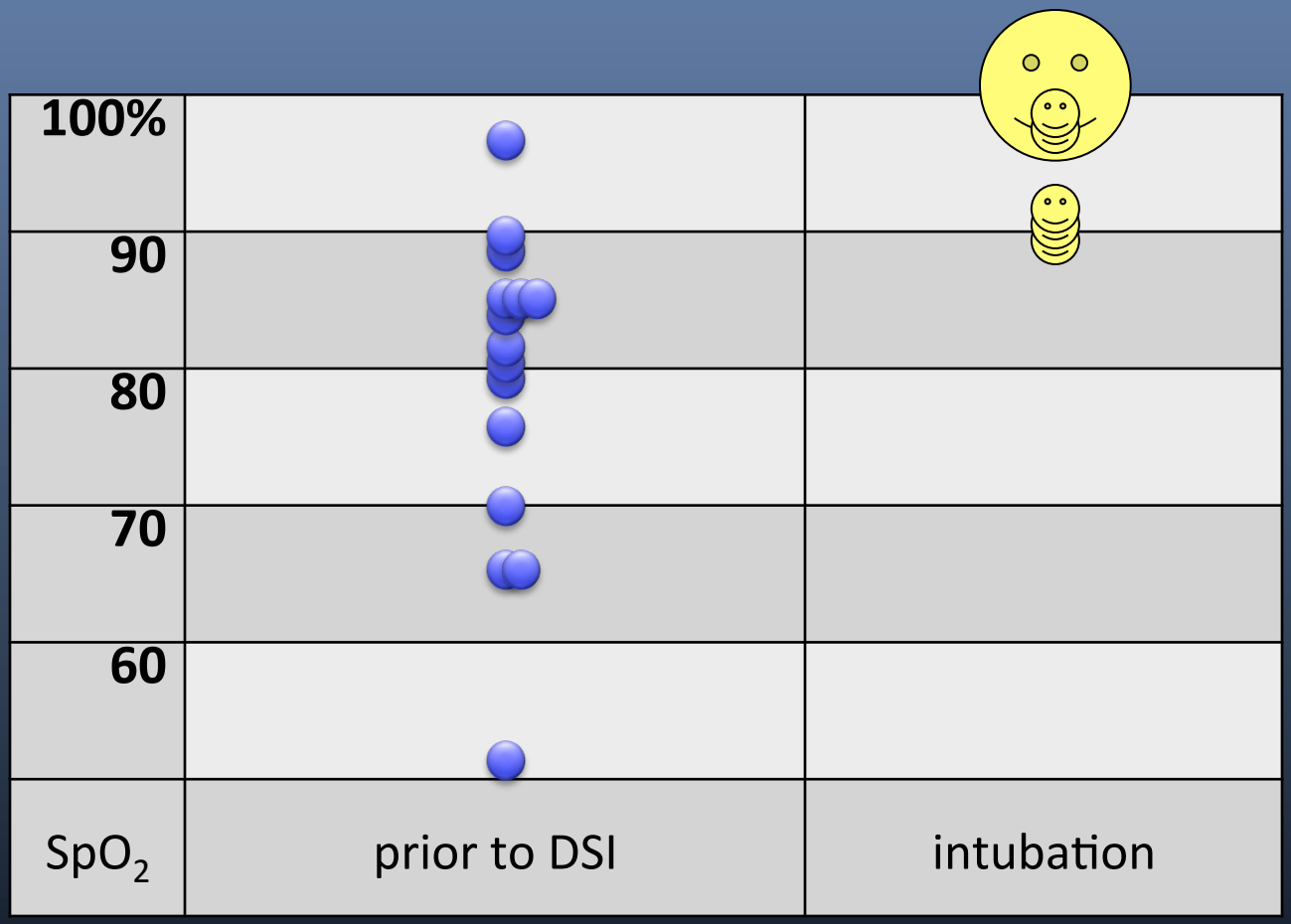
	PMH
4	COPD
3	asthma
2	CHF
2	CAD
2	dwarf
1	kidney
1	liver

	acute
8	pneumonia
4	COPD
3	asthma
3	APE
1	anaphylaxis
1	UGIB
1	stroke

	indication
15	hypoxia
3	respiratory distress
1	NGT for UGIB

how?


100%
90
80
70
60
SpO2
prior to DSI
intubation



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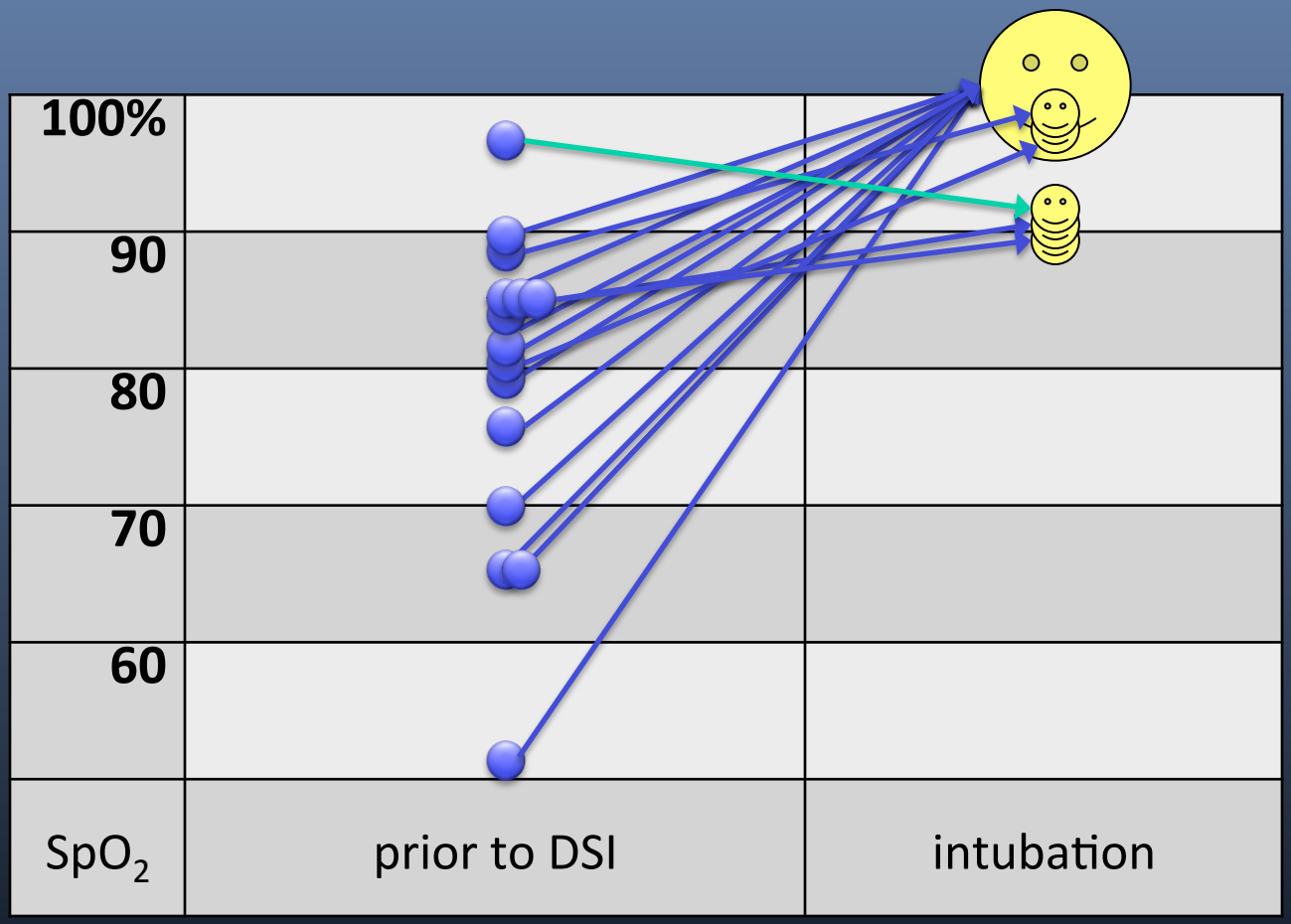
100%
90
80
70
60
SpO2
prior to DSI
intubation

ultimate outcomes	
5	DC home
1	SNF
2	died in ICU

ultimate outcomes	
2	avoided tube
0	vomited

Scott Weingart
Joe Scofi
Kelly Barsan

Thank you

Scott Weingart EHC

Xun Xhong NUMC

Ted Melnick Yale

Minh Le Cong Cairns

Anton Helman Toronto

Rob Bryant Salt Lake City

Ian Ferguson Sydney

Reuben Strayer MSSM

Thank you

THE WORLD
1897
The British Possessions are coloured Red.
ARCTIC OCEAN
ARCTIC OCEAN
Beaufort Sea
Baffin Bay
GREENLAND
Spitzbergen
Greenland Sea
Iceland
Arctic Circle
Bering Sea
Hudson Bay
CANADA
NORTH AMERICA
San Francisco
Tropic of Cancer
Bermudas
Bahama Is.
West Indies
PACIFIC
PACIFIC OCEAN
OCEAN
Galapagos Is.
Marquesas Is.
SOUTH AMERICA
Brazil
Falkland Is.
ATLANTIC OCEAN
The Sahara
AFRICA
Ascension I.
St Helena
INDIAN OCEAN
Madagascar
Tropic of Capricorn
Philippine Islands
AUSTRALIA
Perth
Kerguelen I.
ANTARCTIC OCEAN
Antarctic Circle
Graham Land
Wilkes Land

audience questions

air hunger

methodology
small case series
no comparison group
self report / bias
few outcomes reported
no long term follow up
low prevalence of bad outcomes

@MDaware