Складні дихальні шляхи в акушерстві: особливості і нові рекомендації

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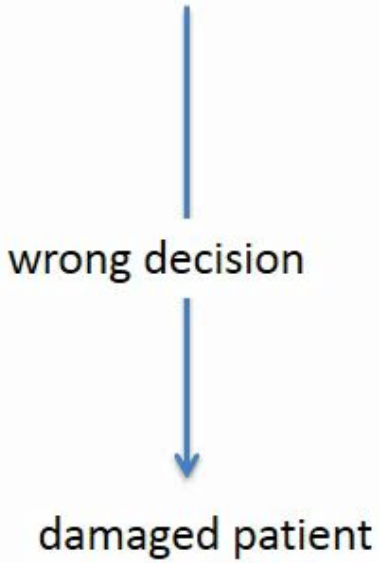
Київ 04.11.2016

No conflicts of interest

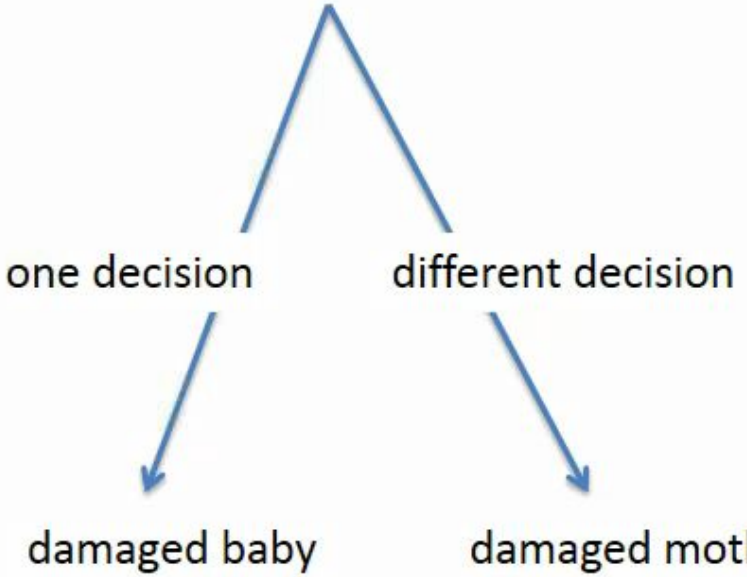
План доповіді

1. Чи є проблемою заінтубувати вагітну в сучасному світі?
2. Деякі особливості вагітності
3. Нові рекомендації складної інтубації в акушерстві
4. DA trolley, SAD, FON-surgery…

Non-obstetric anaesthesia



Obstetric anaesthesia



or both.....

Невдала інтубація в акушерстві

1/300 Obs

G.Lyons. Anaesthesia 1985

1/283 Obs vs 1/2230 Sur

G.L.T.Samsoon. Anaesthesia 1987

1/224 Obs

A.C.Quinn. BJA 2013

“Інцидентність невдалої інтубації не знизилась за останні 20 років, не дивлячись на успіхи в розвитку різних технік”.

Failed tracheal intubation during obstetric general anaesthesia: a literature review

S.M. Kinsella,[a] A.L. Winton,[a] M.C. Mushambi,[b] K. Ramaswamy,[c] H. Swales,[d] A.C. Quinn,[e] M. Popat[f]

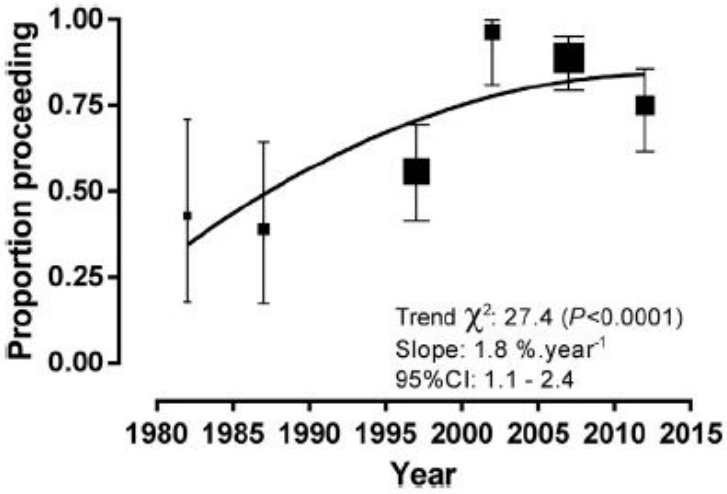


Fig. 3 Graph of proportion of cases in which general anaesthesia was continued after failed tracheal intubation at caesarean section; reports pooled into 5-year epochs. Error bars=95% confidence interval

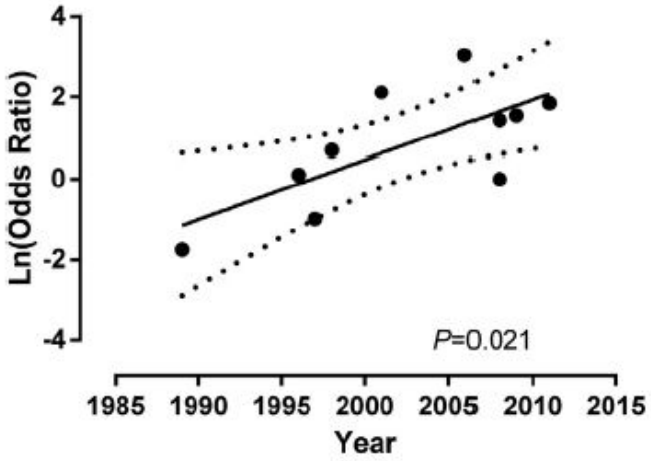


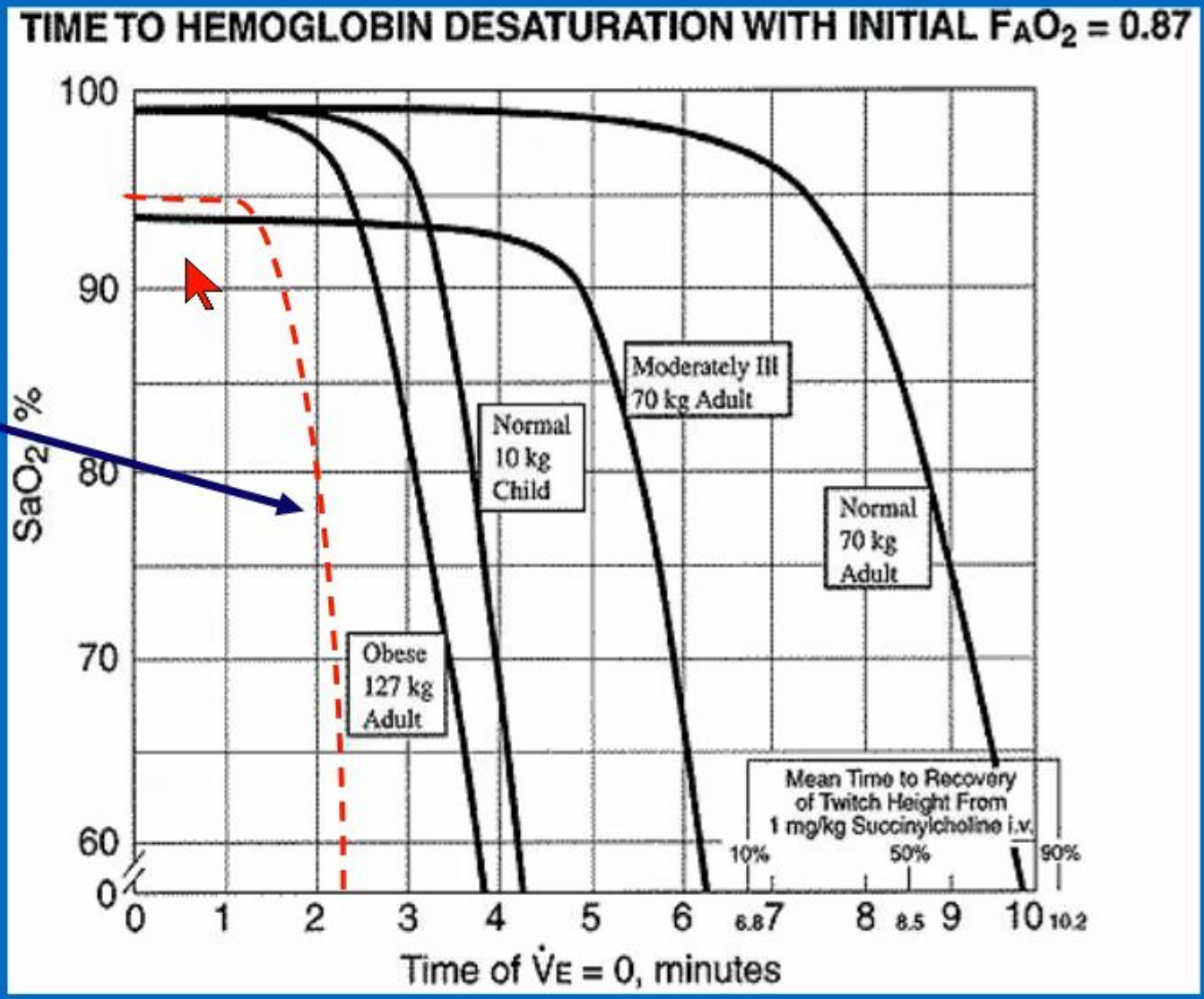
Fig. 4 Ratio of 'proportion of general anaesthesia continued after failed tracheal intubation at emergency caesarean section'/'proportion of general anaesthesia continued after failed tracheal intubation at elective caesarean', plotted by year of publication. Dotted lines=95% confidence interval

International Journal of Obstetric Anesthesia (2015) 24, 356–374

Деякі особливості – час апное

pregnant woman at term

+ low pseudocholinesterases



Obesity in pregnancy

Ashwani Gupta MD FRCA
Peter Faber MD PhD FRCA

BJA, CEACCP, 2011

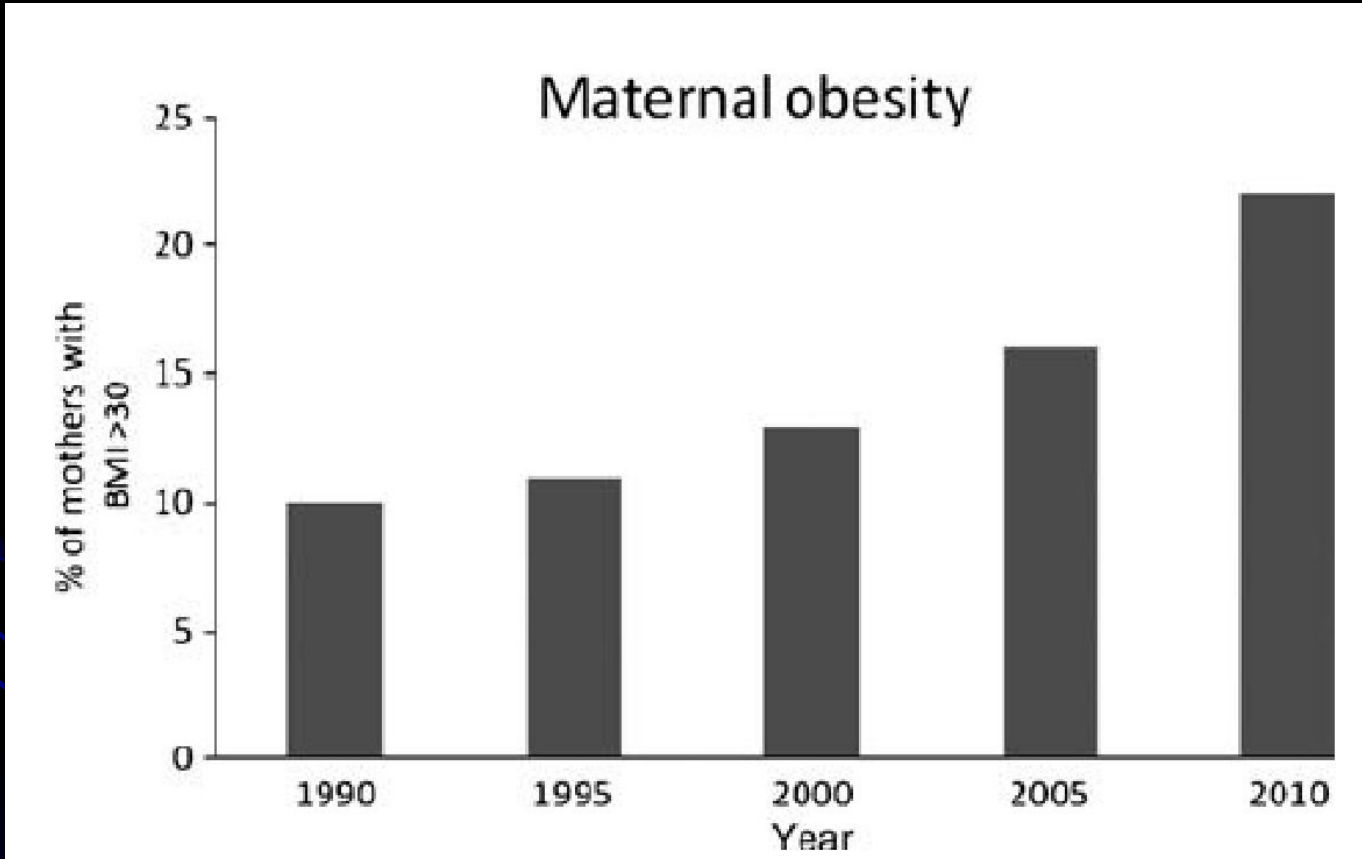


Fig 1 Trends in maternal obesity within 16 weeks of gestation. Data for 2010 are predicted.

Mallampati class changes during pregnancy, labour, and after delivery: can these be predicted?

M. Boutonnet[1], V. Faitot[1], A. Katz[1], L. Salomon[2] and H. Keita[1]*

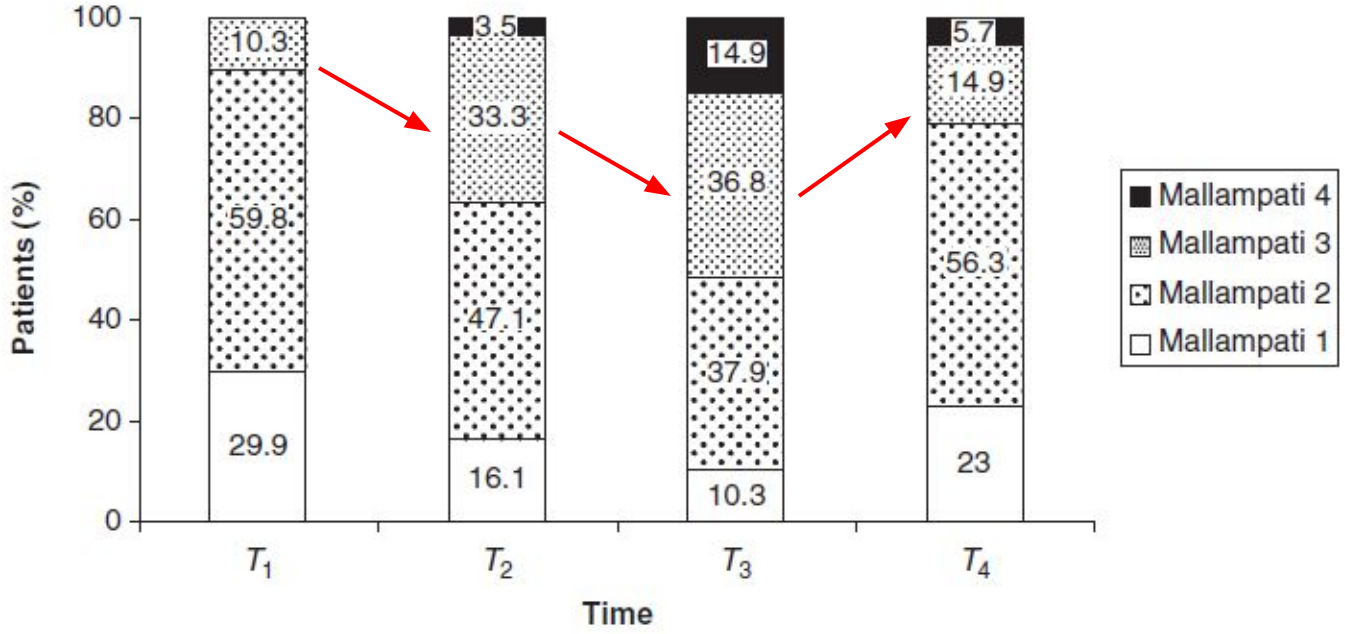
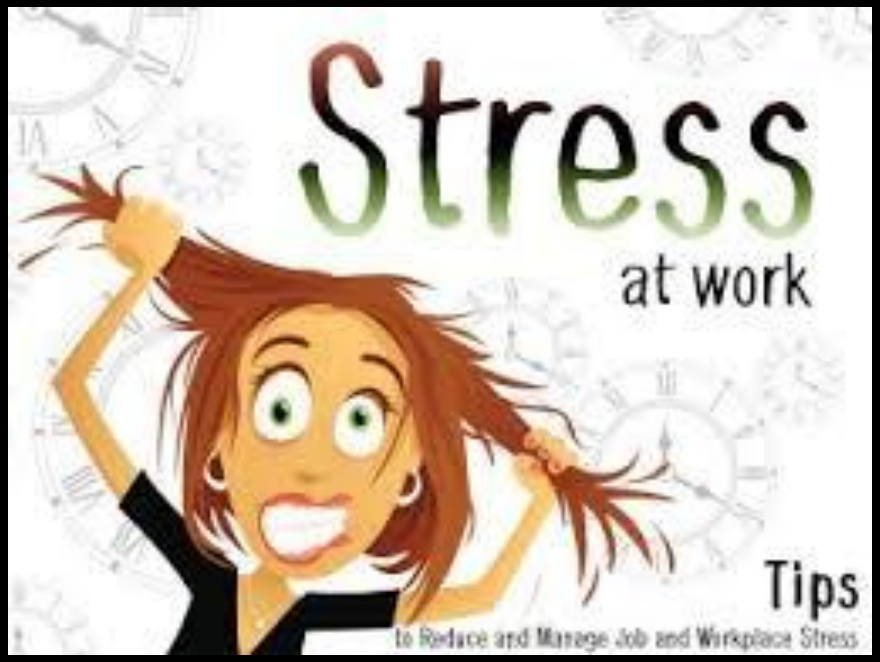


Fig 1 The Mallampati classes at different time points. T_1, 8 months of pregnancy; T_2, during labour; T_3, 20 min after delivery; T_4, 48 h after delivery. The percentages of patients with Mallampati class 3 or 4 changed significantly: T_1 *vs* T_2, P=0.0000; T_2 *vs* T_3, P=0.0005; T_3 *vs* T_4, P=0.0000; T_4 *vs* T_1, P=0.0062.

Гіпертрофія грудей, цервіко-фаціальна інфільтрація, набряк мукози

BJA (2010) 104, 67–70



Стрес: ургентний Кесаревий розтин

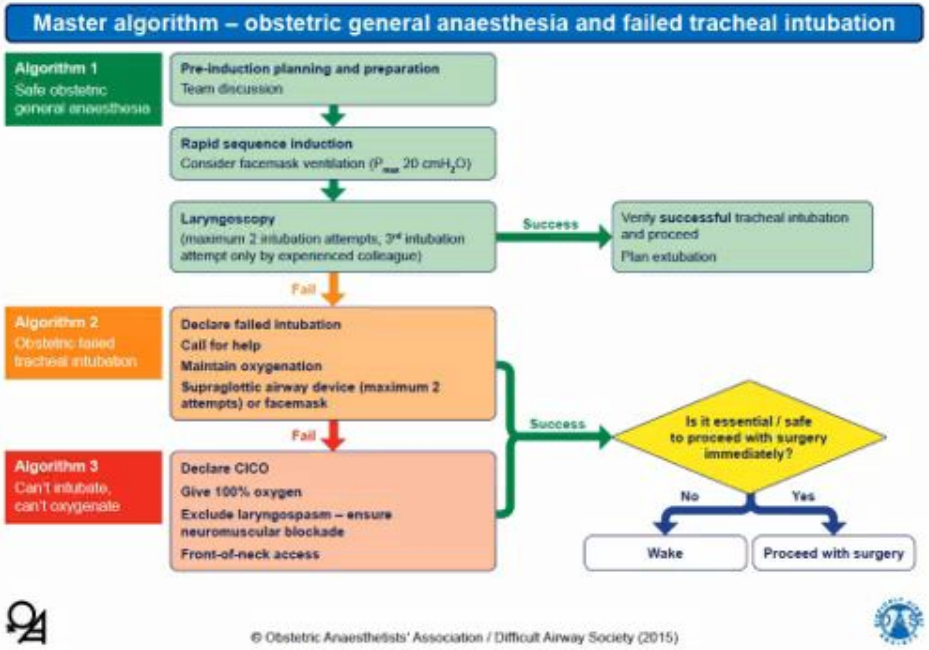
Втрата навичок загальної анестезії

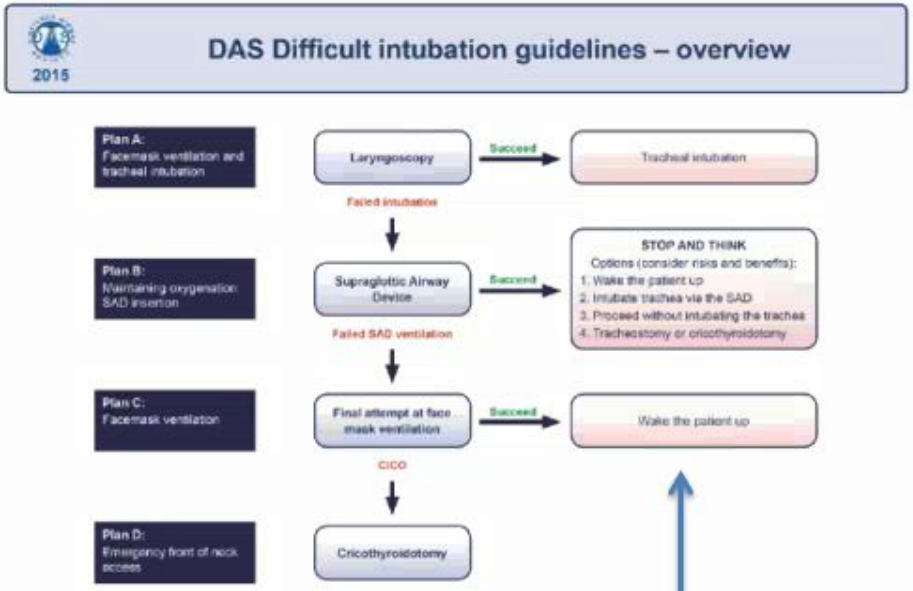
Obstetric Anaesthetists' Association and Difficult Airway Society guidelines for the management of difficult and failed tracheal intubation in obstetrics*

M. C. Mushambi,[1] S. M. Kinsella,[2] M. Popat,[3] H. Swales,[4] K. K. Ramaswamy,[5] A. L. Winton[6] and A. C. Quinn[7,8]

1 Consultant/Chairman of Guidelines Group, Department of Anaesthesia, Leicester Royal Infirmary, Leicester, UK
2 Consultant, 6 Specialist Registrar, Department of Anaesthesia, St Michael's Hospital, Bristol, UK
3 Professor, Nuffield Department of Anaesthesia, Oxford University Hospital NHS Trust, Oxford, UK
4 Consultant, Department of Anaesthesia, University Hospitals Southampton Foundation Trust, Southampton, UK
5 Consultant, Department of Anaesthesia, Northampton General Hospital, Northampton, UK
7 Consultant, Department of Anaesthesia, James Cook University Hospital, Middlesborough, UK
8 Honorary Associate Clinical Professor, Leeds University, Leeds, UK

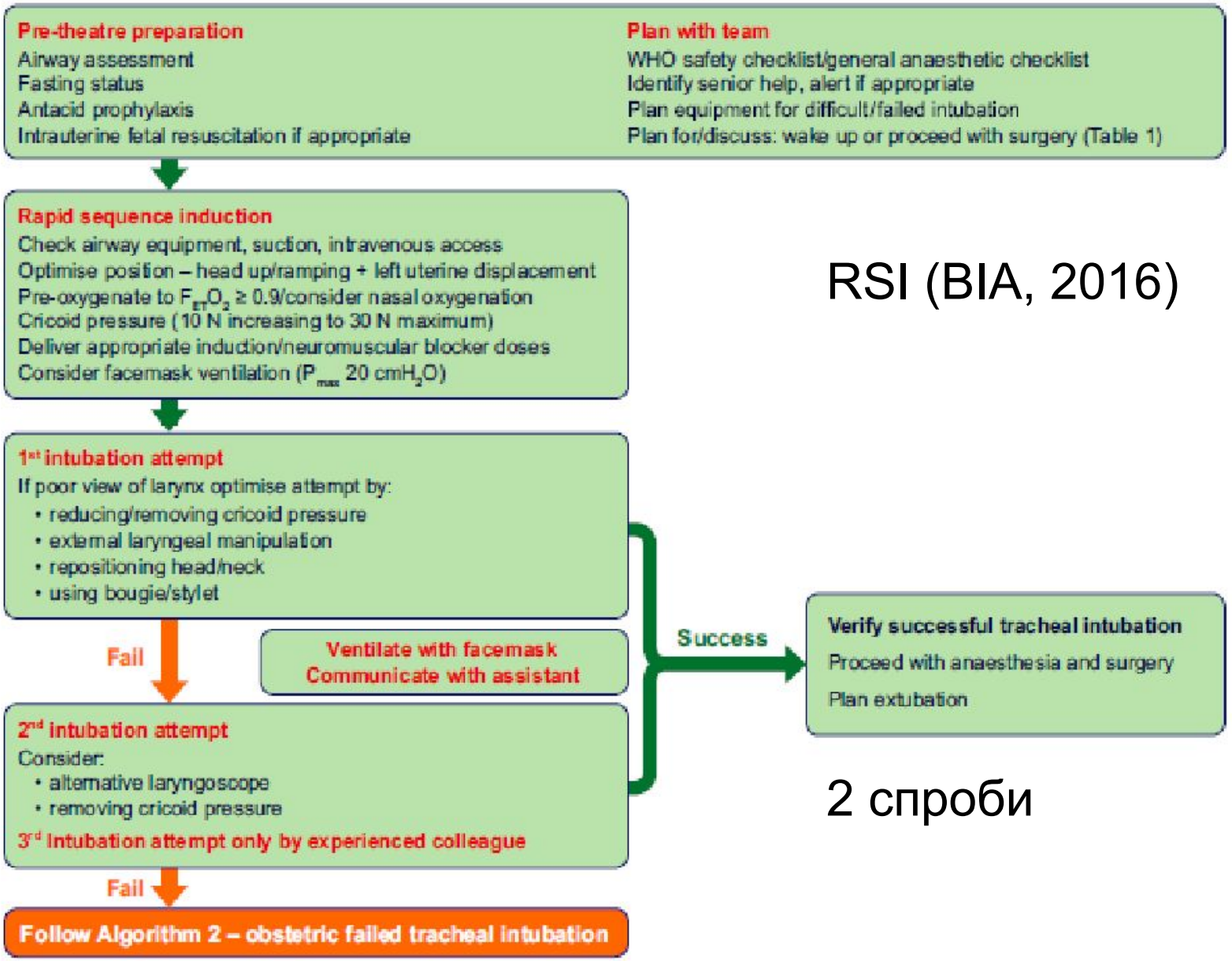
A&A 2015





Wake the patient up

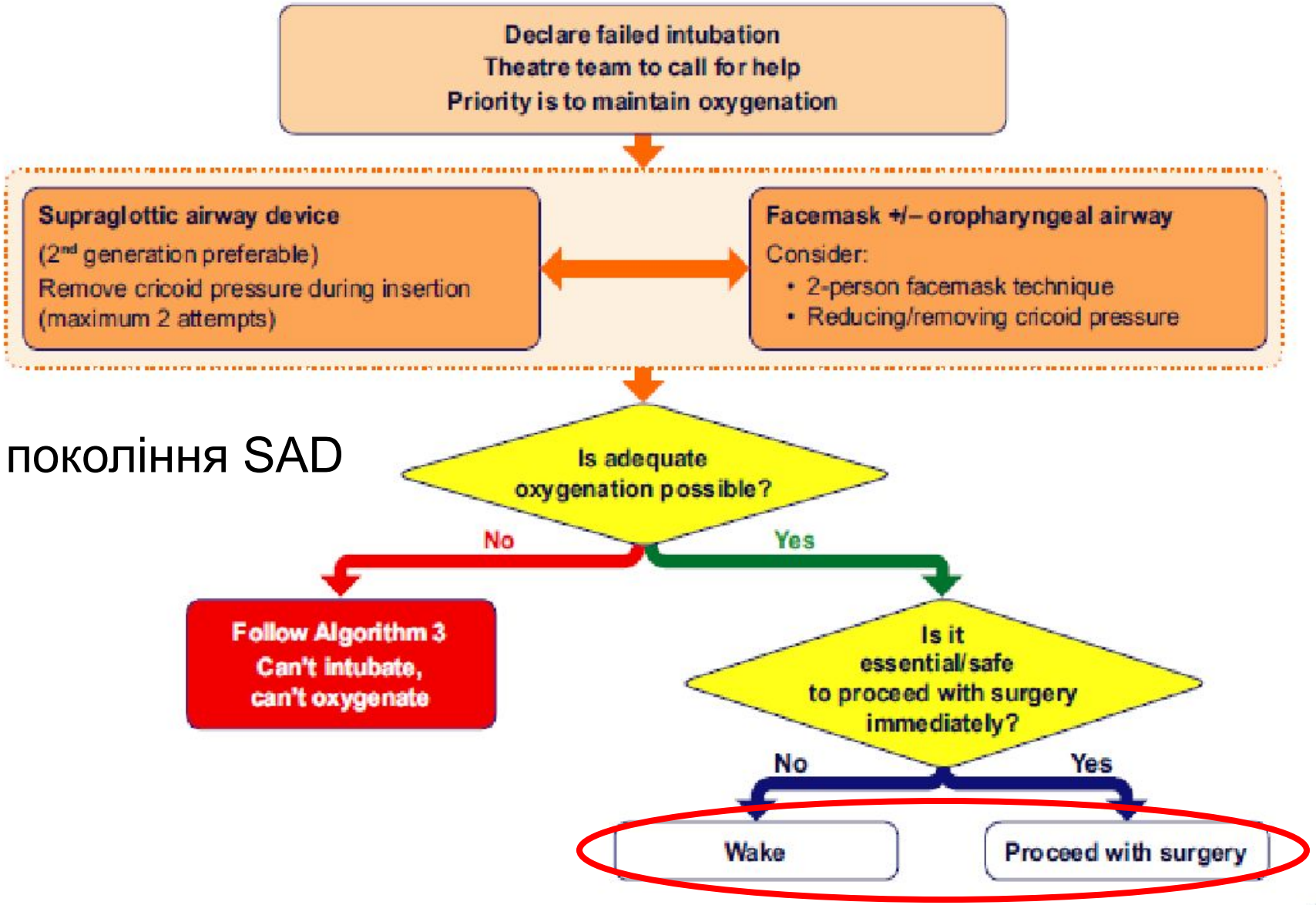
Algorithm 1 – safe obstetric general anaesthesia



RSI (BIA, 2016)

2 спроби

Algorithm 2 – obstetric failed tracheal intubation



2 покоління SAD

Table 1 – proceed with surgery?

	Factors to consider	WAKE			PROCEED
Before induction	Maternal condition	• No compromise	• Mild acute compromise	• Haemorrhage responsive to resuscitation	• Hypovolaemia requiring corrective surgery • Critical cardiac or respiratory compromise, cardiac arrest
	Fetal condition	• No compromise	• Compromise corrected with intrauterine resuscitation, pH < 7.2 but > 7.15	• Continuing fetal heart rate abnormality despite intrauterine resuscitation, pH < 7.15	• Sustained bradycardia • Fetal haemorrhage • Suspected uterine rupture
	Anaesthetist	• Novice	• Junior trainee	• Senior trainee	• Consultant/specialist
	Obesity	• Supermorbid	• Morbid	• Obese	• Normal
	Surgical factors	• Complex surgery or major haemorrhage anticipated	• Multiple uterine scars • Some surgical difficulties expected	• Single uterine scar	• No risk factors
	Aspiration risk	• Recent food	• No recent food • In labour • Opioids given • Antacids not given	• No recent food • In labour • Opioids not given • Antacids given	• Fasted • Not in labour • Antacids given
	Alternative anaesthesia • regional • securing airway awake	• No anticipated difficulty	• Predicted difficulty	• Relatively contraindicated	• Absolutely contraindicated or has failed • Surgery started

Перед Індукцією

Головне

1. Думай про пробудження / продовження
2. Чи може вона відкрити свого рота (LMA)
3. Ожиріння – думай про FON місце (УЗД)
4. Оптимізація положення для ларингоскопії

Головне

Невдала перша спроба:

- корекція / послаблення крикоїдного тиску
- відеоларингоскоп / інші “скопи”

Table 1 – proceed with surgery?

	Factors to consider	WAKE			PROCEED
Before induction	Maternal condition	• No compromise	• Mild acute compromise	• Haemorrhage responsive to resuscitation	• Hypovolaemia requiring corrective surgery • Critical cardiac or respiratory compromise, cardiac arrest
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	Surgical factors	• Complex surgery or major haemorrhage anticipated	• Multiple uterine scars • Some surgical difficulties expected	• Single uterine scar	• No risk factors
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	Alternative anaesthesia • regional • securing airway awake	• No anticipated difficulty	• Predicted difficulty	• Relatively contraindicated	• Absolutely contraindicated or has failed • Surgery started
After failed intubation	Airway device/ ventilation	• Difficult facemask ventilation • Front-of-neck	• Adequate facemask ventilation	• First generation supraglottic airway device	• Second generation supraglottic airway device
	Airway hazards	• Laryngeal oedema • Stridor	• Bleeding • Trauma	• Secretions	• None evident

Після невдалої інтубації


Failed intubation
SAD
F-o-N A A
?oxygenate
? wake up
Urgency
Patient problems
Airway after failed intubation

Table 2 – management after failed tracheal intubation

Wake

- Maintain oxygenation
- Maintain cricoid pressure if not impeding ventilation
- Either maintain head-up position or turn left lateral recumbent
- If rocuronium used, reverse with sugammadex
- Assess neuromuscular blockade and manage awareness if paralysis is prolonged
- Anticipate laryngospasm/can't intubate, can't oxygenate

After waking

- Review urgency of surgery with obstetric team
- Intrauterine fetal resuscitation as appropriate
- For repeat anaesthesia, manage with two anaesthetists
- Anaesthetic options:
  - Regional anaesthesia preferably inserted in lateral position
  - Secure airway awake before repeat general anaesthesia

Proceed with surgery

- Maintain anaesthesia
- Maintain ventilation - consider merits of:
  - controlled or spontaneous ventilation
  - paralysis with rocuronium if sugammadex available
- Anticipate laryngospasm/can't intubate, can't oxygenate
- Minimise aspiration risk:
  - maintain cricoid pressure until delivery (if not impeding ventilation)
  - after delivery maintain vigilance and reapply cricoid pressure if signs of regurgitation
  - empty stomach with gastric drain tube if using second-generation supraglottic airway device
  - minimise fundal pressure
  - administer H_2 receptor blocker i.v. if not already given
- Senior obstetrician to operate
- Inform neonatal team about failed intubation
- Consider total intravenous anaesthesia

LMA

Після невдалої інтубації:

26: 7 пробудження / 19 продовження

19: 18 LMA 2-го покоління / 1 невдача

H.Swales. Int J Obst Anesth 2014

Оцінка продуктивності:

cLMA – 11 з 22 балів

pLMA / sLMA / i-jel – 17-19 з 22 балів

T. M. Cook & F. E. Kelly. BJA 2015

British Journal of Anaesthesia 115 (4): 497–9 (2015)
Advance Access publication 20 May 2015 · doi:10.1093/bja/aev156

Time to abandon the 'vintage' laryngeal mask airway and adopt second-generation supraglottic airway devices as first choice

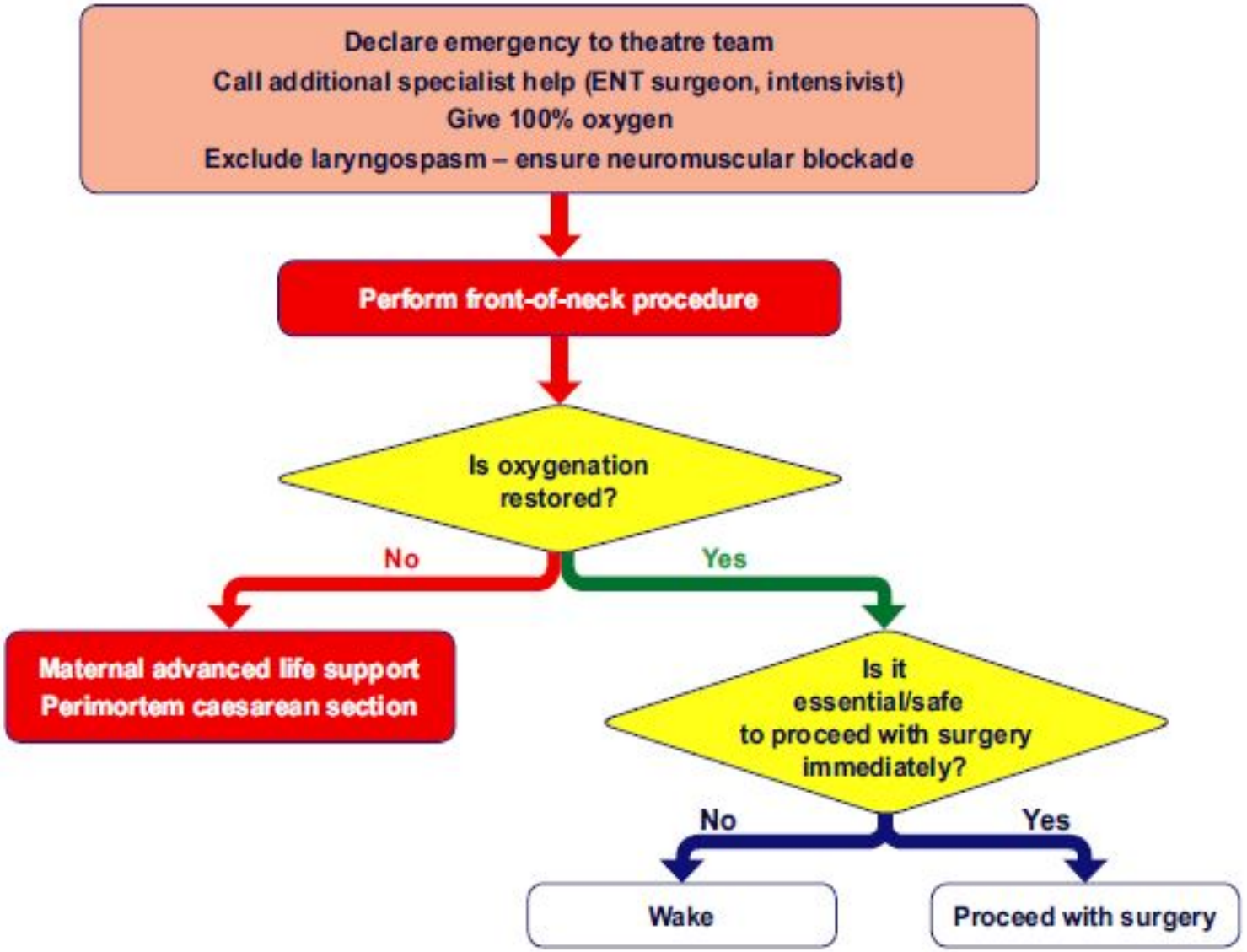
T. M. Cook* and F. E. Kelly

Anaesthesia and Intensive Care Medicine, Royal United Hospital, Combe Park, Bath BA1 3NG, UK

Table 1 Choice of airway for routine use during elective anaesthesia. Aspects of device performance are given a maximal score according to importance in the clinical circumstance. Each device is then scored for each aspect of performance. The sum of these scores gives an indication of the most and least suitable device. BVM, bag–mask ventilation; cLMA, classic laryngeal mask airway (LMA); ILMA, intubating LMA; LTS II, laryngeal tube suction mark II; PLMA, ProSeal LMA; SLMA, Supreme LMA. *Second-generation device

	Overall insertion success	Speed of insertion	Quality of ventilation	Airway seal	Aspiration protection	Avoiding airway trauma	Avoiding sore throat	Sum
Maximal score	4	3	4	3	2	3	3	22
BVM	2	3	1	0	0	3	2	11
cLMA	3	3	2	1	1	2	2	14
ILMA	4	3	2	2	1	2	1	15
PLMA*	3	3	3	3	2	2	2	18
i-gel*	3	3	3	2	2	3	3	19
SLMA*	3	3	3	2	2	2	2	17
LTS II*	2	3	2	3	2	2	2	16

Algorithm 3 – can't intubate, can't oxygenate



Percutaneous emergency airway access; prevention, preparation, technique and training

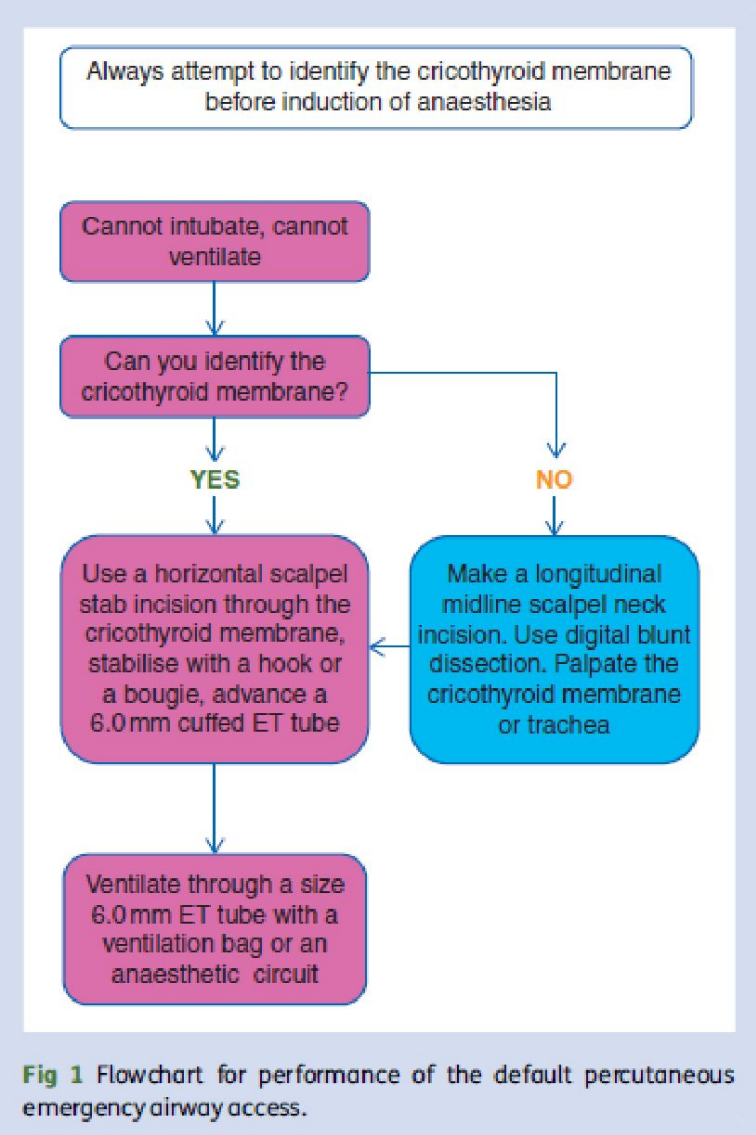


Fig 1 Flowchart for performance of the default percutaneous emergency airway access.

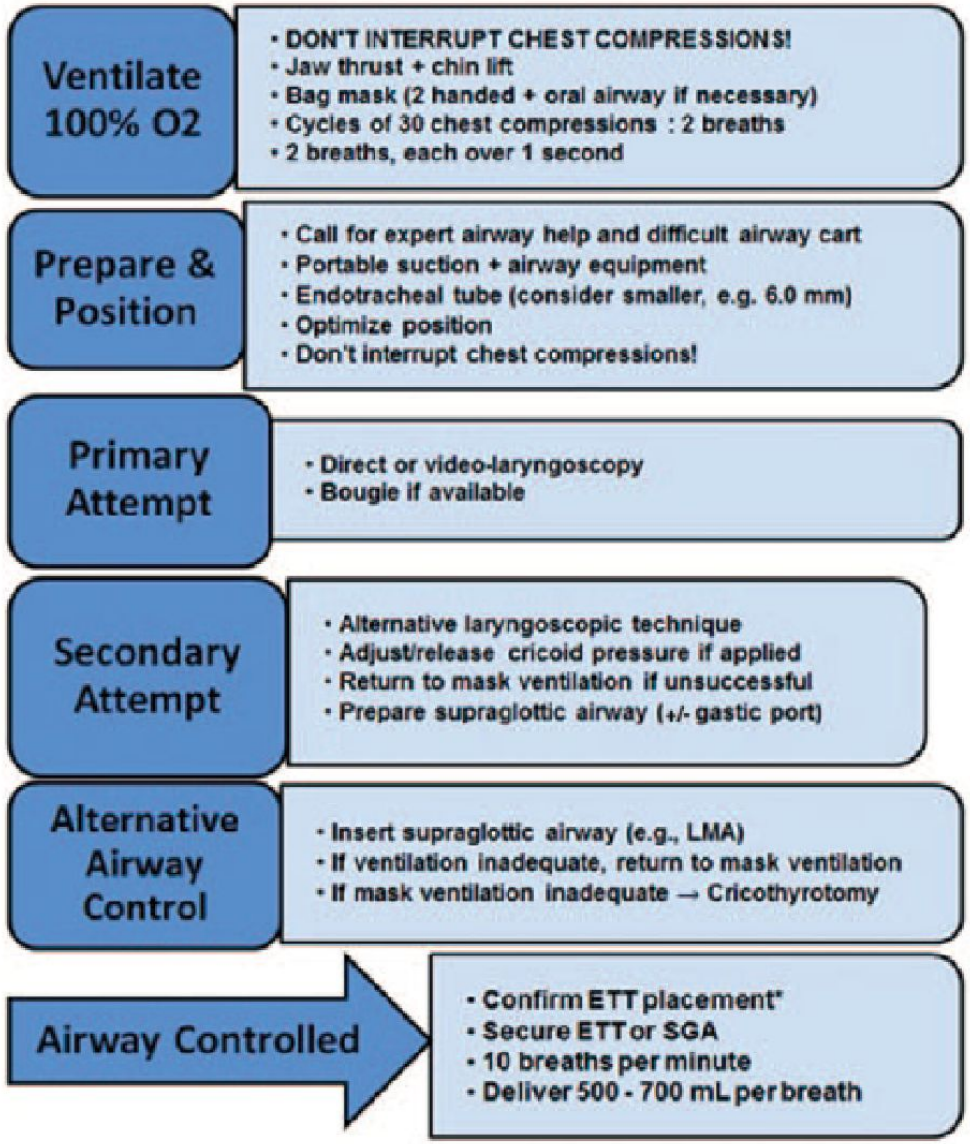
Хірургічна техніка

За Сельдінгером:

Melker Kit
Fvora Kit

Kristensen et al. BJA (2015) 114, 357–61

The Society for Obstetric Anesthesia and Perinatology Consensus Statement on the Management of Cardiac Arrest in Pregnancy



O2

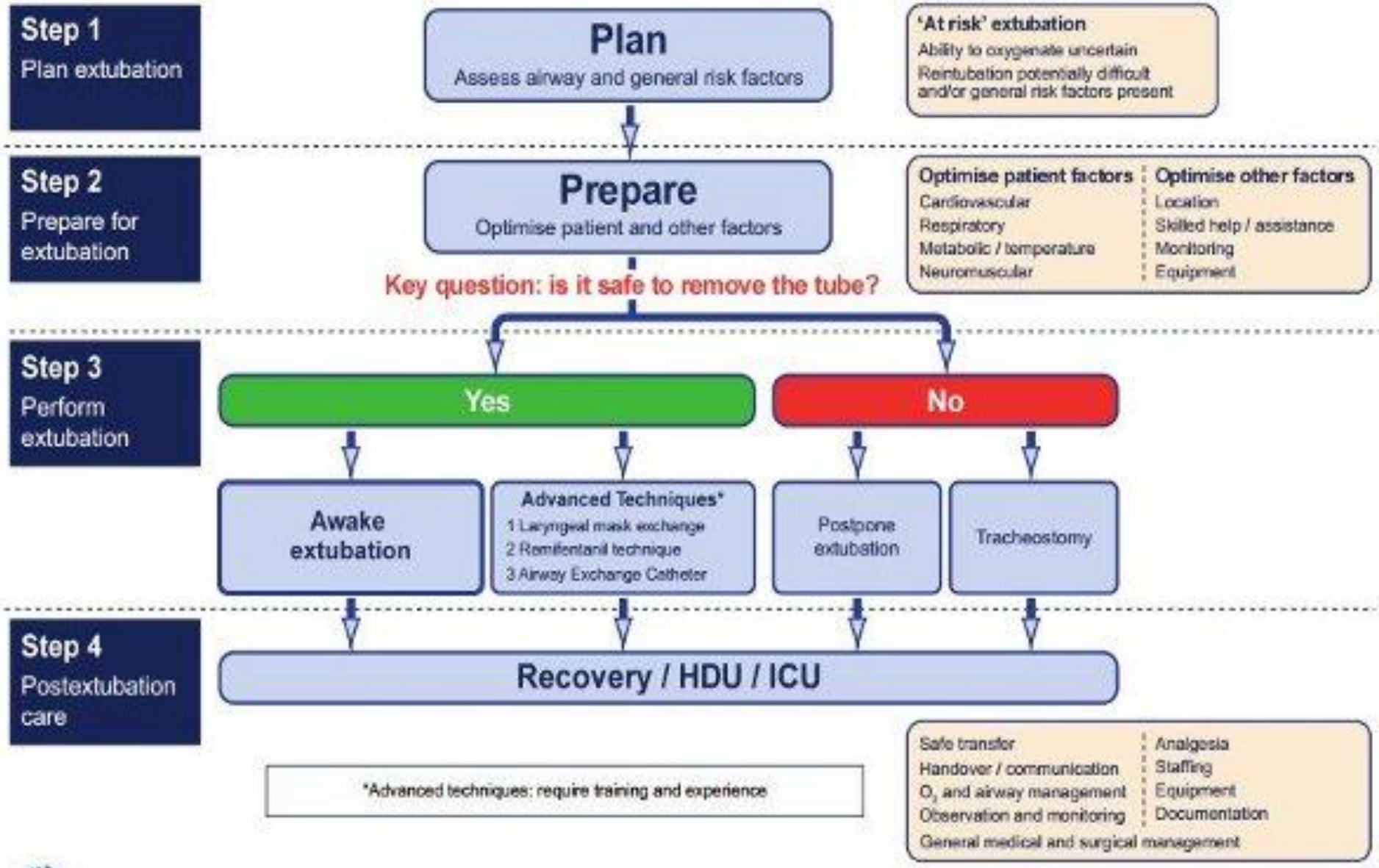
1 спроба – ларингоскопія

2 спроба – LMA

3 спроба – FON

S.Lipman et al. A&A 2014

DAS Extubation Guidelines: 'At risk' algorithm



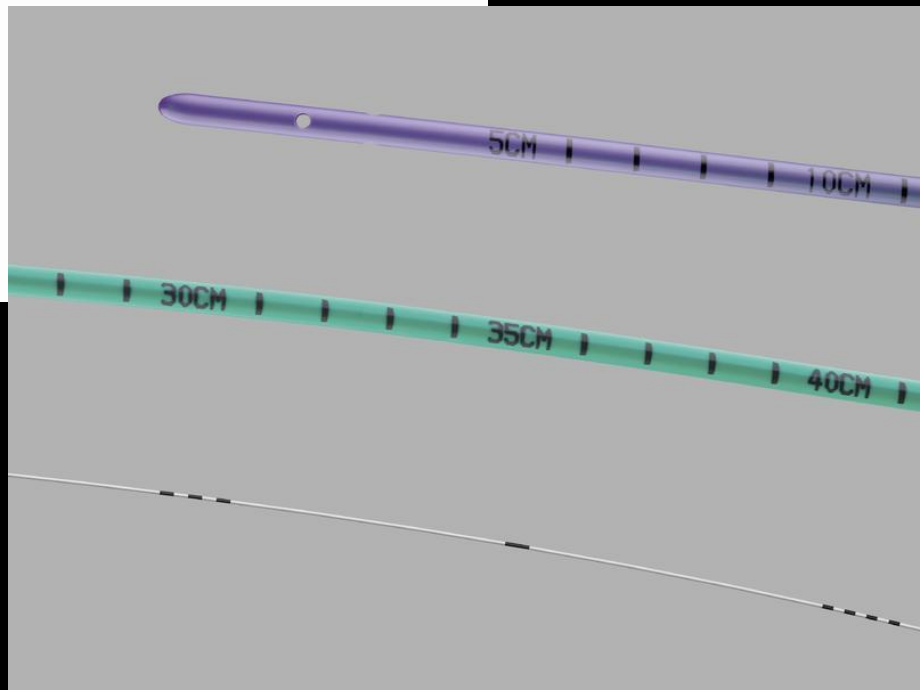
Difficult Airway Society Extubation Algorithm 2011

0959-289X/$ - see front matter
http://dx.doi.org/10.1016/j.ijoa.2014.03.010

Safe extubation of a parturient using an airway exchange technique

A.D. Spong, D.J.A. Vaughan
Department of Anaesthesia, Northwick Park Hospital, Harrow, Middlesex, UK

Fig. 1 Patient with airway exchange catheter in situ following removal of the tracheal tube



Провідники для екстубації

Наявність обладнання і тренінг

Дякую за увагу

vorotyntsev_s@ukr.net