A Multifaceted Approach to Reducing Obstetric Failed Intubations; A Completed Audit Cycle

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The Sheffield Obstetric Difficult Airway Course Structure

S.O.D.A

Lectures
- Review of evidence and guidelines NAP4/5, MBRRACE
- Summary of local case series
- Human factors relating to obstetric anaesthesia
- Introduction to HAPPE checklist (see opposite)

Workshops
1. Plan A – Initial intubation strategy
   - Video laryngoscopes
   - Oxford HELP pillow, demonstration by it's designer
2. Plan C – Oxygenation and ventilation
   - Supra-glottic airway devices
   - Plan B – Secondary intubation strategy (MOH/ critical care requirement)
3. Plan D –Can't intubate, can't ventilate
   - Techniques and pitfalls
   - Narrow bore and surgical cricothyroidotomy
   - Jet ventilation
4. Decision to wake v continue
   - Airway obstruction, bronchospasm and laryngospasm

Simulation
- Difficult intubation
- Can't intubate, can ventilate
- Can't intubate, can't ventilate
- Arrival of second anaesthetist to difficult situation

Review of new OFIs

Course feedback and modification

Obstetric Failed Intubation (OFI) rate

Previous: 1:119

(>national average 1:224[1])

Current: 1:375

Case Reviews

Creation of GA induction Checklist[2]

Identification of recurrent problems

Sheffield Obstetric Difficult Airway (SODA) Approach: The future…

- Apply for CPD points and open out course regionally and ultimately nationally
- Disseminate HAPPE induction checklist regionally

Updated SODA trolley and FI drill

Funding for Oxford Pillow and 'Noelle'

Course Design

Oxford HELP pillow

Obstetric high fidelity mannequin

Education through trainee induction, MDT simulation and airway course

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The (modified) Jessop Wing Obstetric Emergency GA Induction Checklist
Are you HAPPE to continue?

H istory and H elp – Relevant medical and obstetric history? GA still necessary? CTG reviewed? Experienced help required? Available?

A irway Assessment – Difficult airway risk factors present? If multiple risk factors consider getting help and/or reconsider regional anaesthesia. Prepare for difficulty if risk factors present and GA required

P ositioning and cricoid – Ramped/ Correct position +/- Oxford Pillow? Check hair/accessories? Cricoid Pressure (BURP manoeuvre) Remember to adjust or release cricoid pressure if difficulty encountered at any stage

P re oxygenation – Check oxygen on at 10 L / min. Good seal & consistent $EtCO_2$ trace. Aim for $Et0_2$ >85%. Consider assisted ventilation during induction

E quipment and drugs – Rescue plan for failure or difficulty? Suction ready? Maximum 2 intubation attempts (3rd by experience colleague) Chosen alternative laryngoscope/SAD ready to hand? Bougie, smaller ETT size ready? Induction drugs dose adequate +/- opiate? (Check weight) Spare induction agent available? Suxamethonium 1.5mg/kg minimum (allow time to work) Wake patient or continue surgery if airway difficulty?

References:

1. Quinn, A. C., Milne, D., Columb, M., Gorton, H. & Knight, M. Failed tracheal intubation in obstetric anaesthesia: 2 yr national case–control study in the UK. *British Journal of Anaesthesia* (2012). doi:10.1093/bja/aes320
2. Thomas A, Parsons K, Meer C, Woolnough M, Roberts F. Obstetric failed intubation case series: avoiding the chaos of an emergency caesarean section under general anaesthesia: are you "H.A.P.P.E."? International Journal of Obstetrics (2014); Volume 23, issue S1 (May), P18

Summary

- Our obstetric failed intubation (FI) rate was found to be higher than the national average
- Cases of FI were reviewed after ethical approval and a checklist developed to highlight the recurring problems found
- Current equipment was reviewed and new equipment purchased
- Our difficult airways course (SODA) was developed for education and dissemination of our learning points
- We have successfully reduced our FI rate to below the national average (now 1:375)