TOTAL SPINAL DURING C-SECTION

MODULE: OBSTETRIC

TARGET: ANAESTHETIC CORE TRAINEES & ALL ANAESTHETISTS & OBSTETRIC TEAMS

BACKGROUND:

Total/High spinal block is an uncommon but significant complication of neuraxial anaesthesia. The obstetric population is at particular risk due to increased intraabdominal pressure, increasing BMI, early supine positioning following intrathecal injection, prior epidural volume loading, and inadvertent top-ups of intra- or sub-durally placed' epidural' catheters for LSCS.

All anaesthetists must be able to manage the respiratory, cardiovascular and neurological effects ofan inadvertently high spinal block.

RELEVANT AREAS OF THE ANAESTHETIC CURRICULUM

IG_BS_07	• Demonstrates effective pre-oxygenation, including correct use of the mask, head position and clear explanation to the patient
IG_BS_08	In respect of intravenous induction: • Makes necessary explanations to the patient • Demonstrates satisfactory practice in preparing drugs for the induction of anaesthesia • Demonstrates proper technique in injecting drugs at induction of anaesthesia • Manages the cardiovascular and respiratory changes associated with induction of general anaesthesia
IG_BS_10	In respect of airway management: • Demonstrates optimal patient position for airway management • Manages airway with mask and oral/nasopharyngeal airways • Demonstrates correct head positioning, direct laryngoscopy and successful nasal/oral intubation techniques and confirms correct tracheal tube placement • Demonstrates proper use of bougies • Correctly conducts RSI sequence Correctly demonstrates the technique of cricoid pressure (Participant 2)
OB_BS_01	Undertakes satisfactory preoperative assessment of the pregnant patient
OB_BS_02	Demonstrates the ability to clearly explain and prepare an obstetric patient for surgery
OB_BS_03	Demonstrates the use of techniques to avoid aorto-caval compression
OB_BS_07	Demonstrates the ability to provide general anaesthesia for caesarean section [S]
RA_BK_09	Recalls/discusses the complications of spinal and epidural analgesia and their management including, but not exclusively, accidental total spinal blockade and accidental dural tap and post-dural puncture headache
RA_BS_04	Demonstrates how to undertake a comprehensive and structured pre-operative assessment of patients requiring a subarchnoid blockade, perform the block and manage side effects/complications correctly
CI_IS_01	Demonstrates leadership in resuscitation room/simulation when practicing response protocols with other healthcare professionals
CI_IS_02	Demonstrates appropriate use of team resources when practicing response protocols with other healthcare professionals
OB_IS_05	Demonstrates the ability to manage complications of regional block including failure to achieve an adequate block
OB_IS_09	Demonstrates the ability to provide intra uterine resuscitation for the “at risk” baby
OB_HS_06	Demonstrates skill in managing emergencies including pre-eclampsia, eclampsia, major haemorrhage
OB_HS_10	Demonstrates effective communication with patients and relatives/partners, including when things have not gone well

INFORMATION FOR FACULTY

LEARNING OBJECTIVES:

- Recognition of the symptoms and signs of a high or total spinal block.
- Managing the consequences of a high spinal while safely facilitating delivery.
- Verbal reassurance and sufficient anaesthesia are required as there is a high likelihood of awareness.

SCENE INFORMATION:

- Location: Theatre (Maternity)
- Expected Duration of Scenario: 20 minutes
- Expected Duration of Debriefing: 30 minutes

EQUIPMENT & CONSUMABLES

- Pregnant simulation model and neonatal model
- Wedge
- Checked Anaesthetic Machine
- Airway Trolley and intubation equipment
- IV fluids and giving sets
- Self inflating bag-valve-mask
- CTG Monitor
- Theatre drapes

PERSONS REQUIRED

- Anaesthetic Junior Trainee
- Anaesthetic Assistant
- Anaesthetic Senior Trainee (Optional)
- Obstetrician (Optional)
- Midwife (Optional)

PARTICIPANT BRIEFING: (TO BE READ ALOUD TO PARTICIPANT)

This lady has been brought into theatre for an category II emergency section. She is usually fit and well and has had a normal pregnancy. She has had a poor CTG trace for about an hour, with some slow-to-recover bradycardias which have precipitated the decision to perform the section.

She has just had a spinal anaesthetic in the left lateral position. 2.5ml 0.5% heavy bupivacaine with 15mcg fentanyl has been injected.

FACULTY BRIEFING:

The patient is undergoing an emergency (Category II) Caesarean section for foetal distress based on CTG finding. There has been time for regional anaesthesia.

Scenario commences immediately after the spinal anaesthetic block has been sited, and the patient has been placed onto her back (wedged) ALTERNATIVELY the anaesthetist who has performed the spinal block has been called away to an emergency and hands over the patient's care to the participant.

If spinal block level is checked more than once, it reveals a rapidly rising block up to cervical level.

'VOICE OF MANIKIN' BRIEFING:

Your name is Sally Phillips. You are 32 years old and having your first baby.

No medical problems. No surgical history. No regular medications. No allergies.

Uneventful pregnancy. Some heartburn in the last few weeks.

As spinal block develops (over about 3-5 minutes):

Initially complaining of mild difficulty breathing – find hard to take deep breaths or cough.
Tingling in hands and arms, developing into numbness and weakness.
Start to feel a bit panicky.
Increasing difficulty breathing, inability to complete sentences in one breath.
Increasingly drowsy, eventual loss of consciousness.

VOICE OF THE TELEPHONE HELP BRIEFING:

Help will arrive as soon as possible but the starred consultant is helping out in emergency theatres.

If a recommendation is asked for from a senior, advise to treat haemodynamic effects with atropine and vasopressors, if conscious level falls then patient will require general anaesthesia.

OTHER IN-SCENARIO PERSONNEL BRIEFING:

MIDWIFE

Monitor CTG and reassure mother.

ANAESTHETIC RECORD SHEET

PATIENT DETAILS / ADDRESSOGRAPH
Hospital No.

SURNAME: Sally Phillips
(Block Letters)
FORENAMES:

Address: 33 years old
Ward/Hosp.

DOB: Sex: M / F

Royal Berkshire NHS
NHS Foundation Trust

Procedure(s) proposed:
Category II Caesarean Section

CEPOD CLASS: ELECTIVE / SCHEDULED / URGENT / EMERGENCY

Anaesthetist's preoperative assessment by

Name: **Grade:** ☐Cons ☐AS ☐SG ☐Trainee _____

Date: **Time:** **Signature**

Anaes / Surg history:

No previous Gas

Medical history:

Normal pregnancy to date
Non-reassuring CTG for last hour, 2 significant bradys that have been slow to recover.
No medical problems.
Frequent heart burn in the last few weeks

V˙ __ ˙ __

O/E

Airway Assessment
Mouth Opening:
MP Score: 1 2 3 4
Jaw:
Neck: MP2. Good neck and jaw ROM

TEETH

8 7 6 5 4 3 2 1	1 2 3 4 5 6 7 8
8 7 6 5 4 3 2 1	1 2 3 4 5 6 7 8

X = missing L = loose B = bridge
C = caps / crowns D = damaged

ASA
BP:
HR:
Temp:
Weight:
Height:
BMI:
Smoke:
Alcohol:
Apfel Score

NBM since
Solids: Fasted overnight
Clear Fluids:

Pregnancy :
Lactation:

Relevant Medication:
No regular meds
Gaviscon OTC

ALLERGIES
No Allergies

Investigations

☐ Haematology FBC Hb 10.8 Plt 180 Sickle:	☐ Biochemistry U & E NAD Blood Sugar:	☐ Coag. INR 1.0	☐ ECG	Other:
		☐ Gp. & Save	☐ X - Ray	
		☐ X - Match		

CONSENT: ☐ GA ☐ Sedation ☐ Epidural ☐ Spinal ☐ Regional ☐ Suppository
☐ PCA ☐ EPCA ☐ Other

Notes / Discussion / Technique proposed:

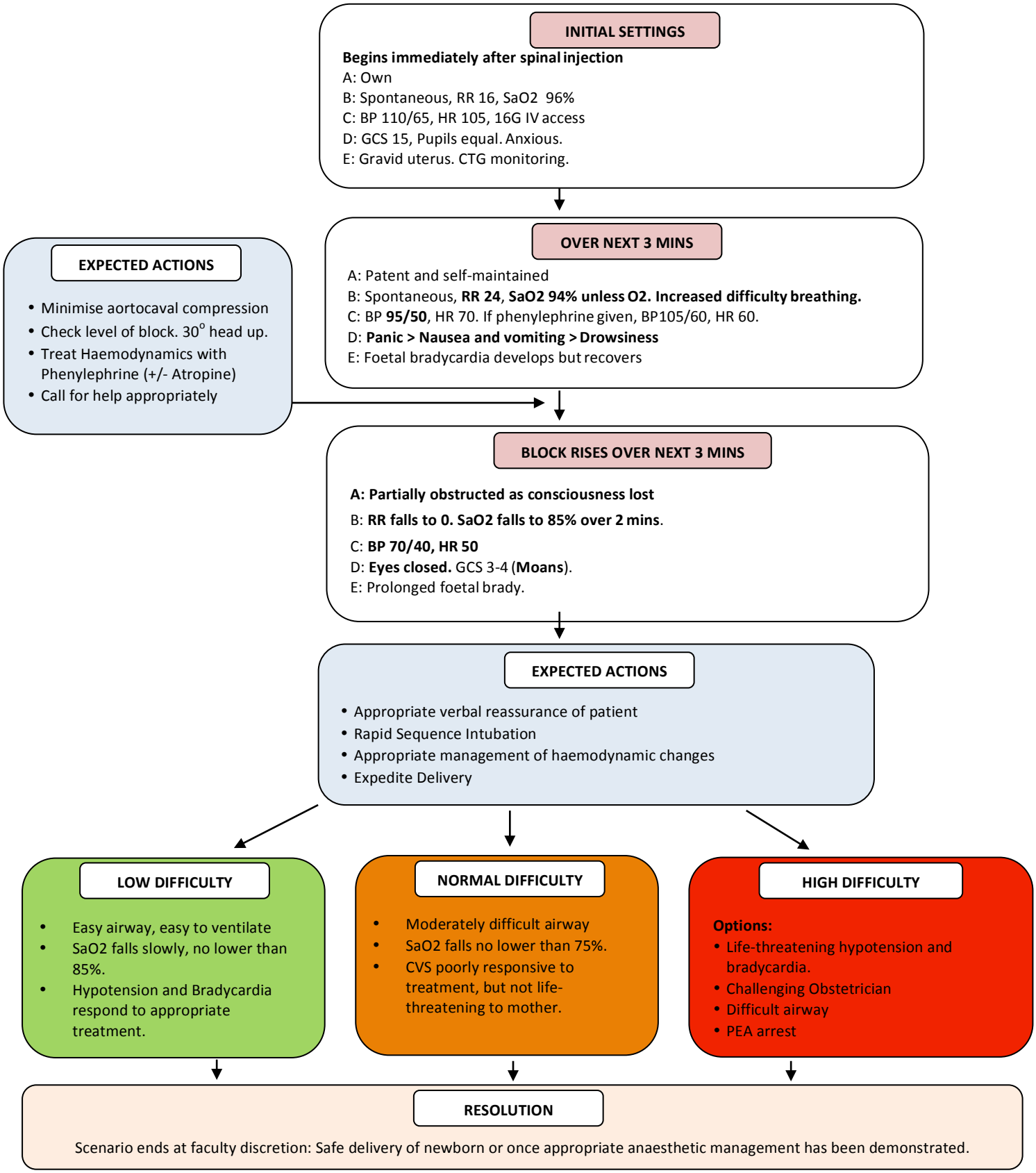
☐ Anaesthetic Information leaflet received by patient

For attention of ward staff: (further investigations, fasting, continue/omit current medication, etc.)

All orders / information regarding medication & fluids must be entered on patient's drug prescription & administration record

SPG2299

CONDUCT OF SCENARIO



DEBRIEFING

POINTS FOR FURTHER DISCUSSION:

Technical:

- Recognition of rising Spinal anaesthetic block (Signs and Symptoms)
- Management of unexpected loss of consciousness during C-Section

Non-technical:

- Based on established non-technical skills frameworks e.g. ANTS, NOTECHS etc
- Appropriate communication with patient during unexpected adverse events.

DEBRIEFING RESOURCES

1) Complete Spinal Block following Spinal Anaesthesia. Anaesthesia Tutorial of the Week 180.(24th May 2010) Newman B
http://www.frca.co.uk/Documents/180%20Complete%20spinal%20block%20after%20spinal%20anaesthe sia.pdf

2) Obstetric emergencies and the anaesthetist. BJA CEPD Reviews (2002) 2 (6):174-177 Thomas C, Madej T.
http://ceaccp.oxfordjournals.org/content/2/6/174.full.pdf+html?sid=e1abed37-1d82-4e46-944b-563687070587

3) Case Report – Total Spinal Anaesthesia. Update in Anaesthesia (2002) 14 (14) Dijkema L, Haisma H.
http://www.nda.ox.ac.uk/wfsa/html/u14/u1414_01.htm

4) Loss of consciousness following anaesthesia for Caesarean Section. BJA (2000) 85 (3): 474-476 Chan Y, Gopinathan R, Rajendram R
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INFORMATION FOR PARTICIPANTS

KEY POINTS:

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PARTICIPANT REFLECTION:

What have you learnt from this experience? (Please try to list 3 things)

How will your practice now change?

What other actions will you now take to meet any identified learning needs?

PARTICIPANT FEEDBACK

Date of training session:.....

Profession and grade:.....

What role(s) did you play in the scenario? (Please tick)

Primary/Initial Participant	
Secondary Participant (e.g. 'Call for Help' responder)	
Other health care professional (e.g. nurse/ODP)	
Other role (please specify):	
Observer	

	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree
I found this scenario useful					
I understand more about the scenario subject					
I have more confidence to deal with this scenario					
The material covered was relevant to me					

Please write down one thing you have learned today, and that you will use in your clinical practice.

How could this scenario be improved for future participants?
(This is especially important if you have ticked anything in the disagree/strongly disagree box)

FACULTY DEBRIEF – TO BE COMPLETED BY FACULTY TEAM

What went particularly well during this scenario?

What did not go well, or as well as planned?

Why didn't it go well?

How could the scenario be improved for future participants?