

Distractions During Critical Phases of Anaesthesia in the Obstetric Theatre

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Introduction

Accidents in aviation have been attributed to distractions in flight crews at critical times. This led to the sterile cockpit rule and pilots refraining from all non-essential conversations and activity during critical phases of flight.¹ Take off and landing can be considered analogous to the critical phases of anaesthesia and have been looked at in the general theatre setting. We decided to look at distractions during critical phases in the obstetric theatre environment .

Aim

We aimed to qualify and quantify distractions in obstetric theatre during caesarean section under regional anaesthesia and to canvass patients' views of the obstetric theatre environment relating to their birthing experience.

Method

Approval was obtained from the West of Scotland Research Ethics Service. Permission was sought from the duty anaesthetic consultant to obtain data during caesarean section. Data was collected at the time of establishing regional anaesthesia (phase 1), time of testing of the block (phase 2) and following delivery of the head (phase 3). We recorded the nature and frequency of potential distractions, including background noise levels, sudden loud noises, staff present, entrances / exits to and from theatre and conversations unrelated to the task in hand.

Results

We collected data for 30 patients during the 3 phases identified above. Results are shown below

	Phase 1	Phase 2	Phase 3	p Value
Mean Sound Level (dB)	62.5 (3.9)	63.9 (4.1)	66.8 (5.0)	<0.001
Rate of events >70 dB/min	0.05 (0-0.2) [0-0.4]	0.13 (0.1-0.3) [0-1.0]	0.6 (0.3-0.8) [0-1.4]	<0.001
Rate of conversations / min	3.4 (2.7-3.9) [1.4-5.4]	4 (3.6-4.5) [1.4-7.8]	4.3 (3.6-5.0) [2.8-5.8]	0.006
Music playing	16 (53%)	14 (46%)	15 (50%)	0.9
No. Staff	6.5 (6-8) [3-10]	8 (7-9) [4-13]	10 (9-11) [8-17]	<0.001
Rate of entrances / minute	0.6 (0.3-0.8) [0-1.8]	0.5 (0.4-0.7) [0-1.2]	0.2 (0-0.4) [0-1.6]	<0.001

Table 1: Auditory and physical distractions in 3 phases of anaesthesia. The reported values are mean (SD), median (IQR) [range], or proportion

Phase 3 had the greatest incidence of all types of auditory distraction, except music playing. It had the highest ambient noise level, the highest variation in sound level, the highest rate of incidental noisy events ($p<0.001$), and the highest number of non-clinical conversations ($p=0.006$). The causes of incidental noisy events included the baby crying, bins slamming, instruments being dropped and non-clinical conversations. No patients felt that the noise levels interfered with their ability to communicate with the anaesthetist. 25 stated that overall, the noise levels did not affect their overall experience, with 4 stating that the noise affected them in either a 'good' or 'very good' way.

Conclusion

We observed clinically higher decibel levels compared with a previous similar study in the general theatre setting (sound levels during induction, maintenance and emergence were 46.4, 52.0 and 58.3dB respectively).² There were also a significant number of events >70dB and other distracting events which could potentially affect patient safety. It may be that the sterile cockpit rule has a role in obstetric theatres.

References

1. Sumwalt RL. Aviation Safety Reporting System Directline Issue 4 1993. The Sterile Cockpit.
2. Broom MA et al. Critical Phase Distractions in Anaesthesia and the Sterile Cockpit Concept. *Anaesthesia* 2011 66 175-179