Ignorance is a pain in the neck...

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...How to reduce musculoskeletal pain in anaesthetists

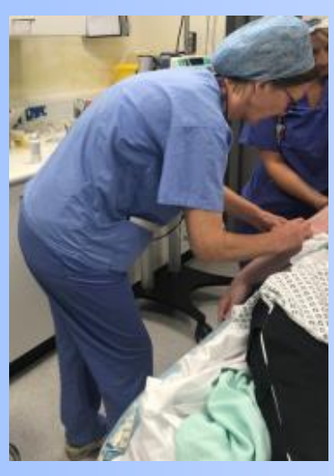
- 34% of anaesthetists have an upper limb disorder (1)
- Risk factors include length of anaesthesia career independent of age → suggests occupational component
- Cumulative strain on the neck, shoulder and lower back are a hazard of anaesthetic practice
- We aimed to identify and study postures causing increased loading on these structures
- A physiotherapist observed and analysed postures and practice of anaesthetists in situ

Potentially harmful postures

Over extension of the shoulder was seen when reaching to squeeze the bag for ventilation due to the trolley being positioned too far forward of the anaesthetic machine

Sitting on backless stools in theatre can result in sustained end-range lumbar flexion, adding extra load to the passive structures.

If the trolley is too low during airway management, it causes spinal stooping. Levering rather than lifting the laryngoscope necessitates a peering posture which produces cervical shear forces



Stooping during spinal anaesthesia or vascular access was observed, due to the trolley height being too low, which increases forces on lumbar soft tissues

The monitor was often observed to be positioned behind the trolley, necessitating end-range of cervical rotation to view it

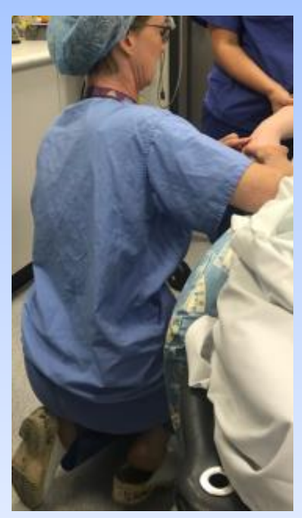
Suggested modifications

Use extension tubing to allow close positioning of bag and mask to avoid over-extension of the shoulder

Ergonomic theatre chairs - with back support - prevent the spine hanging in an end range flexion posture

Adjust bed to optimum height for mask ventilation (patient's forehead at level of umbilicus) and intubation (patient's forehead at level of xiphisternum) to minimize the need to stoop the spine

Adjust the bed to optimum height for insertion of spinal needle or vascular access, or sit on a stool or kneel to aim for a horizontal forearm without stooping



Align the head of the trolley in line with the edge of the monitor

- Trainees exhibited poor postures more often than consultants; perhaps consultants were informed by their own discomfort already developed through occupational exposure.
- It is less fatiguing for the body to be in a better alignment, and it results in improved task performance and therefore improved patient care.

We plan to train anaesthetists to consider the ergonomics of their practice both in situ and using simulation; we have delivered teaching to trainees and anaesthetic departments, and purchased new chairs. We want to reduce ignorance of posture during anaesthetic practice, include trolley height and monitor position in our pre-induction checklists and measure the effect of our interventions with a survey.

1. Upper limb disorders in anaesthetists. Anaesthesia 2019, 74, 285-291