Despite 30 yr of using thoracic epidural analgesia, this still remains an inexact science. Large surveys still show high failure rates, and this seems unlikely to change. It has to work in the real world of limited resources, variable operator skill, and stretched services. I cannot see the anaesthetic community having much appetite for another large study to prove that thoracic epidurals are safe. We are going to have to use less than optimal data and a degree of common sense to decide how best to move forward. The use of thoracic epidurals outside of a critical care environment should be performed with caution, if at all. If epidurals are not working, they need to be rapidly improved, resited, or removed. Many epidurals are left in situ despite less than optimal analgesia. Considering that the epidural may significantly increase the patient’s cardiovascular risk, persisting with a suboptimal epidural would seem very unwise.

Declaration of interest

None declared.

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doi:10.1093/bja/aeu067

No more colloid trials!

Editor—I wish to challenge the simplistic presumption that the demonstrated ineffectiveness of biophysical colloid therapy is due to damaged glycoalyx or capillary leakage. Colloid therapy is ineffective because the colloid osmotic pressure (COP) of plasma restricts but does not reverse Jv, the transendothelial fluid flux from capillary to interstitium. Reabsorption of filtered fluid at the venous end of a non-fenestrated capillary is essentially insignificant for clinical considerations. Moreover, Jv is largely unaffected by the COP of the interstitium, so that leaked starch or gelatin molecules should not compromise the retarding effect. One of the earliest surgical trials of colloid against crystalloid in the Swan–Ganz catheter era demonstrated that there is no necessity to maintain COP by using protein-containing solutions during acute haemodynamic resuscitation: ‘When titrated to physiological end points, even large volumes of balanced salt solutions are tolerated well.’ The homeostasis of extracellular fluid distribution between the circulation and the interstitium depends on the neurohumoral regulation of capillary pressure and the effective surface area for filtration. As I have previously argued in this journal, recent physiology discoveries explain why there is no good reason to prefer a resuscitation solution containing starch or gelatin while capillary pressure is lower than the J point. In my view, it is now time to investigate truly pharmacological approaches to optimizing crystalloid resuscitation and to consign biophysical therapy with plasma substitutes to historic footnotes.

Declaration of interest

None declared.

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doi:10.1093/bja/aeu068

Point-of-view high-definition video assessment: the future of technical skills training

Editor—In regione caecaorum rex est luscus (In the land of the blind the one-eyed man is king)

We read Friedman and colleagues’ recent article with interest, and agree that the introduction of video analysis is an important addition to the educational process. We have evaluated the complete process of central neuraxial block using the technique described below. Our initial set-up also involved a camera and tripod, but this was found to be rather intrusive, by both patients and trainee anaesthetists, particularly in the already busy obstetric theatre.

It is well recognized that junior doctor training has undergone significant changes over recent years, with the limited working hours imposed by the European working time directive. There has been a shift towards service provision, and training...
opportunities have become increasingly limited. Supervision from senior doctors has also become less frequent, and the increased proportion of on-call work can result in missed training opportunities.2

A number of initiatives, such as ‘Better Training, Better Care’ launched by Medical Education England, have been developed to address these changes and ensure that education and training remain fit for purpose. One possible way of overcoming the impact of reduced working hours on training is to ensure that as much time as possible spent in work, is useful training time.3 The lack of continual consultant presence necessitates novel methods of assessment and feedback, to allow out-of-hours work to provide more training opportunities.4

Current assessment in anaesthesia is based on a combination of examinations, simulation, and workplace-based assessments (WPBAs). WPBAs can be time-consuming to arrange and perform, and assessors do not all approach them in the same way. Trainees are able to select specific assessors, and are also under no obligation to include WPBAs that are deemed unsatisfactory, enabling bias.5

Video assessment of consultations is well established in general practice, and has been shown to be both valid and reliable.6 We believe that video assessment could be used to complement current training in anaesthesia. We have trialled the use of high definition video sport glasses to record trainee anaesthetists performing central neuraxial block, with written consent obtained from patients, and verbal consent from trainees.

The glasses are modified to best suit the recording of close up anaesthetic procedures, with rotation of the camera sensor to portrait wide-angle, and the lenses removed to make them less intrusive to the operator (Fig. 1).

In addition to the operator’s point-of-view camera, the procedure can also be filmed by an observer wearing a second pair of glasses. The observer can be anyone in theatre, although we have found the assisting operating department assistant to be most useful. Simultaneous playback of both videos enables more detailed feedback (Fig. 2). Further video manipulation allows the multiple camera angles to be stored and reviewed as one file (Fig. 3).

The glasses are worn only for the duration of the procedure, and the video obtained subsequently analysed by a consultant anaesthetist, with feedback given to the trainee. Trainees have been universally positive in their attitude towards this method of assessment, with the general opinion that it is fairer, more accurate, and more useful, than current assessment tools. The glasses provide a non-intrusive way of recording procedures, and enable trainees to perform as they usually would.
Regular use allows trainees to develop a portfolio of procedures, ensuring they can demonstrate consistent levels of performance, and therefore competence, without the need for consultant presence. It also overcomes the sometimes artificial nature of pre-planned WPPAs.

Also providing evidence of competence, and training for the individual operator, videos can be subsequently used as teaching tools for other trainees to demonstrate particular expertise or common pitfalls.

The use of recordable video sport glasses could easily be disseminated to all practical procedures in anaesthesia, and indeed to all medical and surgical specialties, where demonstration of adequate technical skills is required. Round-the-clock availability of the glasses is enabling trainees to use any performance of practical procedures as a training opportunity, overcoming the barrier posed by increased out-of-hours work.

The purpose of assessment in medical practice is two-fold: to provide evidence of developing competence, and to determine fitness for professional practice. The quality of an assessment tool is dictated by its reliability, validity, educational benefit, and cost. We firmly believe that this method of assessment fulfils all of these criteria. Our experience so far suggests it is reliable, valid, and certainly of more educational benefit than current assessment tools. The high definition video produced by these glasses represents excellent value, with negligible running costs. We conclude that this more than justifies the initial, relatively low cost of purchasing the glasses.

In conclusion, changes to medical training are both inevitable and necessary. We believe that video analysis of practical procedures using recordable video sport glasses would be the most valid, reliable, non-intrusive, and educationally beneficial way of improving assessment, and therefore training.

**Declaration of interest**

None declared.

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doi:10.1093/bja/aeu070

**Regional anaesthesia**

Editor—After the publication of the study comparing general anaesthesia (GA) with regional anaesthesia (RA) for total knee arthroplasty,1 we felt the need to make some additional points regarding the methodology of the study.

We read with interest the decision to administer i.v. opiate to the GA group only, while not offering the same to the RA group. We are very pleased that this was noted in your editorial as a potential factor influencing the pattern of data observed.2 Given the importance of opiate usage in conventional RA practiced in the UK and elsewhere, we would go further and say that this decision by the study designers amounts to bias. The more favourable feedback from patients after operation in the opiate/GA group is highly predictable and it brings into question how this aspect of the study was sanctioned by an ethics committee.

Secondly, with reference to the national joint registry in this country, the decision to exclude patients with high BMIs seems an unfortunate one. The average BMI for men and women undergoing total knee replacement (TKR) in England, Wales, and NI, is over 30.3

In addition, a case–control study conducted in Sweden (in one of the two hospitals involved in the above study)4 concludes a positive association between high BMI and TKR. It is therefore hard to accept their sample population as a realistic reflection of the general population undergoing such surgery. Comorbidity-related issues such as BMI are central to influencing decisions surrounding anaesthetic technique. We feel it is unfortunate that this article has been accompanied by an editorial and may give the unwarranted conclusion that RA is a poor choice for primary knee arthroplasty. We suspect that this manuscript was too late to have included reference to the recent large observational study5 suggesting advantages of RA over GA for hip and knee arthroplasty.

**Declaration of interest**

None declared.

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