

Defence Anaesthesia – Look Back, Look Forward

This supplement to the Journal of the Royal Army Medical Corps examining the Challenges in Defence Anaesthesia is the latest collection of articles that examine developments in the specialty of military anaesthesia in all its facets; previously the journal has Focused On... Pain Management (March 2009) and Intensive Care (June 2009). It is coincidentally being published close to the 20-year anniversary of the 1990-1991 Gulf War. Looking back to this conflict allows us to examine how much has changed in UK Military Anaesthesia in the intervening two decades.

32 Field Hospital was one of four UK military hospitals deployed to the Arabian Gulf in 1991. It was located in the desert in Northern Saudi Arabia and housed 200 beds, eight operating tables, eight resuscitation bays and a treatment department. The resuscitation teams comprised three people (a doctor, nurse and medic) with responsibility for two resuscitation bays each. Anaesthesia duties were to be shared with Dental officers and the McVicar operating tables were arranged in zig-zag fashion in the open tented area with the two head ends close together. This meant that, if required, one anaesthetist could look after two patients at once. Anaesthesia was given with the triservice kit using halothane and trilene. The 'Cold War' template of the hospital meant that critical care as such did not exist. The long tented corridors of the hospital were dark and in January 1991 the complex was very cold at night. Fortunately the anticipated casualty load did not arrive – and those patients who came through the hospital were given the best care the staff could offer with the materials and equipment to hand. I am grateful to the mentors who gave a good grounding in the resuscitation and anaesthesia of the ballistic casualty.

The Camp Bastion hospital in Afghanistan, 20 years later, is a very different place. The workload is intense. The equipment within the hospital is first class. CT scanners and digital X Ray have revolutionised our ability to image the severely injured and plan their care. Joint training on the MOST course and HOSPEX

mean that the deployed teams have a shared understanding of military damage control resuscitation concepts- and the role of anaesthesia within this. Our strong links with the Combat Casualty Care programme at DSTL Porton Down has meant that quality research is used to underpin our protocols- or where this is impractical give us a sound theoretical basis for what we want to achieve. The current state of development of the deployed hospital including intensive care and regional analgesia systems would not have been imagined by our teams in 1991.

Getting to this point has not been straightforward. As a cadre we owe a great debt to a series of Defence Consultant Advisors and single service consultant advisers, supported by key members of the clinical cadres, who have pushed at the boundaries of deployed anaesthesia and worked with the Surgeon General's Department and PJHQ to get new equipment and materials into service.

The collection of articles in this supplement gives a flavour of the level of care that these efforts have facilitated.

Not all deployed operations are, or will be, like Bastion. Everyone who has been on short notice entry operations will know the compromises that have to be made when working within a strict air cargo constraint. Defence Anaesthesia can be very proud of all the contributions made to the care of our combat casualties- but it is important as a cadre that we continually learn from our experiences, research emerging questions and contribute to ongoing operational training so the best of our practice can be adapted to whatever environments and situations we need to face in the future.

This collection of articles is a very welcome contribution to this process and I am very grateful to the editor and the journal for supporting us.

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Defence Professor of Anaesthesia

The Future for Military Anaesthesia After Operations in Afghanistan

Introduction

The provision of military anaesthesia has evolved dramatically during the last few years and more specifically during Op HERRICK. The input from Defence Anaesthesia into casualty care is greater now than at any previous time. Anaesthesia as a whole provides medical capability throughout the casualty pathway almost from point of wounding through all echelons of care including Aero Medical evacuation both tactically and strategically to Role 4 and beyond with input at the Defence Medical Rehabilitation Centre at Headley Court and the Regional Rehabilitation Units.

The foundation of deployed medical capability is rooted in three factors. Having the appropriately *trained* individual, *equipped* in the correct manner and *commanded* effectively to deliver the right care at the right time in the right place. The

pace of change that has occurred during HERRICK has been frenetic. This has been in response to the demands placed upon us by the casualty load and complexity of injury. The fact that Defence Anaesthesia has been up to the challenge is in no small part due to the professionalism and leadership of every single deployed anaesthetist as well as the guidance and tenacity of various members of the cadre. As is inevitable at this time with the ramifications of the Strategic Defence and Security Review (SDSR) still to be fully absorbed, we must look to the future. What threats and challenges are likely to confront us in the future and how are we best to meet these challenges?

There are many lessons to learn from HERRICK, however we should not just try and duplicate the model that is so successful in Afghanistan in the next conflict. The pace of change that has occurred in Afghanistan was required to meet the challenges that

occurred in that particular theatre of operations and has produced an amalgamation of medical capabilities, a hybrid - a highly evolved military medical system that functions extremely well. However, removed from that environment with its established support mechanisms it will potentially fail like any other organism that has evolved in isolation. It becomes our responsibility to examine what lessons can be learnt from HERRICK that are transferable to future deployments.

Command and Control & the Medical Plan.

The first lesson must be that the severely injured soldier is a time sensitive casualty. Rapid medical intervention carried out at the appropriate time saves life. This is reflected in the principle of simultaneous initiation of treatment with casualty evacuation to the next level of care.

The next conflict may not be as asymmetric as Afghanistan; ground forces may not have the ability to switch priority from aggressive patrolling to casualty extraction. During contingency operations the number of airframes will be severely limited and the area of operations will likely be smaller in geographical area. The use of other casualty extraction vehicles other than airframes is potentially more likely. All these factors are likely to delay casualty extraction to primary surgery or definitive care. How we as health care providers mitigate for this will be important if we intend to minimise mortality and morbidity. The concept of intelligent tasking will become more important to rationalise limited resources and requires flexible thinking and efficient decision making.

Equipment

The Role 3 facility at Camp Bastion operates above its designated deployed capability; the through put of casualties reflects the work load of a military Role 3 hospital with twice if not three times the 50 established beds. This is achievable because in certain areas the hospital is equipped and manned as if it was established for 100 beds. It has eight resuscitation bays, four operating tables and 10 intensive care beds which is soon to be expanded to 12. The Operational Establishment Table (OET) also reflects this uplift in capability. The other important force multiplier is the exceptional Aero Medical evacuation system that is working at full capacity nearly every day to keep the hospital functioning. The reason that the hospital in Bastion has been able to evolve in this way is that it is a fixed establishment with medical equipment and life support systems for the hospital such as power and environmental control being employed that would be impractical in all but the most enduring operation in the future.

It is not only medical planners that need to be aware of this paradox. The expectation of those forces that rely on our care needs to be tempered. The next operational area by definition

will be an entry operation of some nature. The logistical support including the air bridge will therefore be much more fragile and as a result the medical infrastructure will likely be different. This will impact on the way we deliver care and potentially the morbidity and mortality of the forces that we support.

The Trained Individual

Of the three factors or foundations that produce operational medical capability on operations outlined earlier (equipment, Command and Control and the trained individual), I believe the most important is the appropriately trained individual. The most constant mitigating factor against the unpredictability of the future will be the clinician, be that the CMT, Nursing Officer, General Practitioner or Secondary Health Care consultant. HERRICK has shown us that one way to increase capability, and thus success, is to increase the number of deployed consultants on the OET. When placed in multidisciplinary teams working together to produce horizontal resuscitation great results can be achieved. However these individuals must be trained for the environment that they are deployed to. Pre-deployment training has become the main priority in the training arena. This emphasis must continue but change to encompass the generic entry operation. Old lessons need to be revisited. The deployed clinician of tomorrow should not only be trained to survive but to function in the austere environment. The next war will not be HERRICK and the next hospital will not be Bastion. The one known factor is that the team should aim to deliver consultant delivered care, and be trained to work in more austere environments. Instead of using the term Field Surgical Team (FST) to describe a deployed capability the phrase Damage Control Resuscitation team (DCR) would be more appropriate. Such a phrase captures the multidisciplinary approach to the severely injured casualty including the specialities of Emergency and Intensive Care Medicine.

Whatever challenges await, Defence Anaesthesia will play a significant part and this will mean more anaesthetists being held at high readiness not only as part of the deployed surgical team but covering the other capabilities of Pre-Hospital care, Intensive Care and Aero Medical evacuation at both tactical and strategic level.

The appropriately trained individual is the greatest assets the DMS has and the training ethos of the future should be those that deploy together need to train together and this represents the true lesson from HERRICK that can be used in the future.

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