Commentary on Operation Corporate – The Sir Galahad Bombings Woolwich Burns Unit Experience

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The Falklands Conflict produced some iconic images of burn injury in modern warfare; the skin hanging off the burnt sailors getting off helicopters, the rescue attempts around the blazing Sir Galahad, the smiling burnt faces of the casualties on SS UGANDA lying on the floor in their makeshift ward with their hands in plastic bags, the scarred Simon Weston. This paper should be part of the iconography of medical planners as it is a clear condensation of the issues around several key aspects of military burn injury.

Much of the information presented in this paper confirms what was already known. Ships engaged in war fighting are a significant potential source of mass burn casualties, most casualties will have small burns, some will have other non-burn injuries, burn casualties (even small burns) place a huge strain on logistic support, burn casualties can do well in extended evacuation chains if moved early and initial management is good. These headline messages are still valid. That said, some things would have been done differently today.

There has been a shift in what is considered "best practice" in burn care. Early excision (certainly within 48 hrs) of a burn wound is now seen as a life saving measure in large burns. As in 1982, it is still considered impractical to perform such surgery forward of Role 4. Only four burns greater than 20% entered the evacuation chain after this incident and more recent conflicts have also yielded very small numbers of large burns. It is, therefore, difficult to test statistically whether our doctrine of not excising large burns prior to evacuation is an unacceptable compromise of care. Repeated anecdotal evidence from UK forces and observation of the larger US figures has so far produced no evidence to suggest we may be getting it wrong.

Aspects of the initial management highlighted in this paper would be criticised now but we should not view matters outside of the context of what was seen as best practice then. Most of burn care has evolved through personal anecdote and prejudice rather than being evidence based. There would have been no "National standard" for a burn fluid resuscitation regime. The exposure method of burn management would be deemed negligent by many Burn Surgeons today. Here we must put ourselves in the shoes of those who, adapting the knowledge of best practice at the time, produced pragmatic solutions to a resource limited environment. Adaptive thinking produces concepts such as "The Uganda Rule". Does this 'making it up as you go along' lead to outcomes that are any worse than rigid pre-planned protocols? The patients who are seen during the learning phase of adaptive thinking may well be in receipt of sub-optimal treatment. Again, though, we cannot answer the question "did they get it right?". A simple glance at the reported end-points does not inform the debate about whether outcomes improved or worsened by what was done or not done.

The liberal use of steroids for inhalation injury in the Falklands Conflict is a clear example on non-scientific medicine; there being then, as now, no evidence of benefit. The mechanism of injury on the Sir Galahad should have produced casualties with inhalation injury. The fact that none of the casualties required intubation nor had long term respiratory sequelae was, particularly within Naval circles, the evidence used to advocate prophylactic steroids as an essential intervention for several years. I cannot help but feel that one or two of the casualties would today have been intubated and ventilated. One of the casualties with 48% burns arrived in the Burn Unit a month after injury and this would now be regarded at unacceptable. We should be asking ourselves the awkward question that, did these casualties do so well because of the omission of early aggressive treatment? For example, it is now well recognised that the pulmonary insult of ventilation in inhalation injury is in itself harmful.

The complexity of the evacuation chain from point of wounding to definitive care is clearly highlighted. Without more detail it is difficult to know, in retrospect, if any part of that chain could have been improved on. In particular, the delayed arrival of the most severely burnt casualty because of septicaemia is not expanded on. Where in the chain was he held? Leading up to 1982, it was considered inconceivable that the UK would embark on such a mission. There is nothing today that should allow our strategists to be allowed to think that a similarly complex scenario could not again be a reality. We must have in our system the ability to evacuate severely injured casualties from all environments.

The four larger burns from this incident would in itself generate a very heavy workload in any modern Burn Unit. Added to this was the greater number of smaller but functionally significant burns. Surgery to heal and reconstruct hand burns is demanding and time consuming. The on-going rehabilitation and scar management even more so. This total workload would today, I am certain, have such an effect on any single unit that the patients would be distributed to a number of burn services. This would have been an excellent cohort to follow up and report on the long term outcomes of hand function as they would represent about a decades worth of experience for the average UK Burn Surgeon.

Personal protective equipment (PPE) issues are still with us. The wearing of body armour to protect against chest penetration is almost universal. Anti-primary blast wave technology is available but, for conventional explosives, of uncertain value. Anti-burn PPE has been around for decades but is not popular with dismounted infantry. The time of maximum danger for burns is when such troops use ships, aircraft and armoured vehicles for mobility. Finding appropriate anti-burn protection for the infantry is an area of on-going research.

This paper adds to our collective anecdote about military burn injury. Its descriptive style makes it difficult to extract useful data for analysis and it would certainly have been inappropriate to base any doctrinal change in clinical practice on what it presents. It does provide a good overview of the scale of the problem and gives an insight into the pragmatic approaches adopted. It is a "must read" for medical planners.