Military general surgical training opportunities on operations in Afghanistan

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ABSTRACT

INTRODUCTION In the UK, general surgical specialist trainees have limited exposure to general surgical trauma. Previous work has shown that trainees are involved in only two blunt and one penetrating trauma laparotomies per annum. During their training, nearly half of trainees will not be involved in the surgical management of liver injury, 20% will not undertake a trauma splenectomy and only a quarter will see a trauma thoracotomy. Military general surgical trainees require training in, and exposure to, the surgical management of trauma and specifically military wounding patterns that is not available in the UK. The objective of this study was to determine whether operative workload in the sole British surgical unit in Helmand Province, Afghanistan (Operation HERRICK) would provide a training opportunity for military general surgical trainees.

PATIENTS AND METHODS A retrospective theatre log-book review of all surgical cases performed at the Role 2 (Enhanced) treatment facility at Camp Bastion, Helmand Province on Operation HERRICK between October 2006 and October 2007, inclusive. Operative cases were analysed for general surgical trauma, laparotomy, thoracotomy, vascular trauma and specific organ injury management where available.

RESULTS A total of 968 operative cases were performed during the study period. General surgical procedures included 51 laparotomies, 17 thoracotomies and 11 vascular repairs. There were a further 70 debridements of general surgical wounds. Specific organ management included five cases of liver packing for trauma, five trauma splenectomies and four nephrectomies.

CONCLUSIONS A training opportunity currently exists on Operation HERRICK for military general surgical specialist trainees. If the tempo of the last 12 months is maintained, a 2-month deployment would essentially provide trainees with the equivalent trauma surgery experience to the whole of their surgical training in the UK NHS. Trainees would gain experience in military trauma as well as specific organ injury management.

KEYWORDS

War injuries – Surgical training – Military surgery

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The General Surgical Syllabus of the Intercollegiate Surgical Curriculum (ISCP, August 2007) sets out the knowledge, clinical and technical skills expected of general surgical trainees in the management of emergency trauma at each of the three key stages of training – initial, intermediate and final.¹ The syllabus includes the technical skill of trauma laparotomy at the initial stage, the management of penetrating and blunt abdominal and thoracic trauma at intermediate stage and the performance of thoracotomy, trauma laparotomy and the surgical management of specific organ injury at the final stage.

In 2002, a postal questionnaire was undertaken of the experience, training and recent exposure to trauma of all

general surgical consultant and specialist registrars in the UK.² This demonstrated that UK general surgeons have limited experience in the management of severe trauma and that general surgical specialist registrars (SpRs) have limited exposure to general surgical trauma during their training. There is a paucity of technical hands-on experience with SpRs being involved with a median of only two blunt and one penetrating trauma laparotomies per annum and the majority will not see, or be involved in, an emergency thoracotomy throughout the 5 years of their training. These figures sit in direct contrast to the requirements for training in emergency trauma set out in the ISCP General Surgical Syllabus.

Military general surgical trainees are a unique cohort of surgical trainees that require significant training in, and exposure to, the surgical management of trauma that is in excess to their NHS peers in order to prepare adequately for deployment as a military consultant. The current tempo of operations, especially in Afghanistan, is such that it leaves no room for experiential training of consultants and requires that deployed consultants are adequately trained and experienced in trauma surgery and specifically military wounding patterns. Neither the volume of trauma surgery, to satisfy the training requirements of military surgical trainees, nor exposure to high-energy transfer torso wounding patterns is routinely available in the UK.

Since 2006, UK military forces have been deployed in Helmand province, southern Afghanistan in a bid to aid security and to promote the reconstruction process (Operation HERRICK). This is supported by a military surgical team, which consists of one consultant general surgeon and one consultant orthopaedic surgeon. The medical treatment facility is a 50-bedded unit that offers a life- and limb-saving capability to the British and coalition troops deployed to Helmand Province. In addition, it treats, when need arises, local Afghan security forces and local Afghan civilians. The objective of this study was to determine whether operative workload in the sole British surgical unit in Helmand Province, Afghanistan (Operation HERRICK) would provide a training opportunity for military general surgical trainees.

Patients and Methods

A retrospective theatre log-book review was undertaken of all surgical cases performed at the Role 2 (Enhanced) medical treatment facility at Camp Bastion on Operation HERRICK between October 2006 and October 2007, inclusive. Cases were apportioned to orthopaedics, general surgery, vascular surgery or neurosurgery. Appropriate operative cases categorised as general or vascular surgical trauma were analyzed for procedure – laparotomy, thoracotomy, vascular repair and specific organ injury management where information was

available. Operative intervention for head injury was excluded from further analysis as a deployed neurosurgeon was in theatre during the study period.

Results

A total of 1262 procedures were performed during the study period (Fig. 1). There were 485 emergency procedures with 28% being performed out-of-hours (1800 h to 0759 h). There were 199 trauma general surgical and vascular cases including 51 trauma laparotomies, 17 thoracotomies and 11 vascular repairs (Table 1). There were a median of 15 general/vascular surgical cases per month (range, 6–24) with no significant difference in the number of these cases per month. Data on specific organ management were limited (Table 2) but included five cases of liver packing for trauma, five trauma splenectomies and four nephrectomies. The 11 vascular repairs were conducted on both upper and lower extremities as summarised in Table 3.

Discussion

There is a training imperative for military general surgeons in the management of severe trauma and the abdominal,

Table 1 Classification of general surgery procedures

Procedure	Frequency (n)
Laparotomy	51
Thoracotomy	17
Thoracotomy	17
Vascular repairs	11
Torso debridement	70
Non-battle injury, emergencies	50
Total	199

Table 2 Visceral injuries at laparotomy

Visceral injury	Frequency (n)
Pancreas	2
Spleen	5
Kidney	4
Liver	5
Bladder	3
Small bowel	11
Large bowel	16
Total	48

Table 3 Location of vascular repairs

Vessel injured	Frequency (n)
Carotid	1
Brachial	1
External iliac	2
Femoral	5
Popliteal	2
Total	11

thoracic and vascular operative skill sets that are required to intervene effectively. ISCP has set out a generic standard for all general surgery trainees in the management of emergency trauma that is directed at producing, on receipt of their Certificate of Completion of Training, a surgical consultant who is 'trauma-safe' on-call. For military trainees, the bar is necessarily set higher with a broader range of skills required and an operative requirement for greater experience and expertise. The training and experience requirement is in direct contrast to the limited opportunities that currently exist within the NHS,² and is compounded by current training programmes and subspecialisation within general surgery. In many UK institutions, general surgeons are not involved in the initial trauma team or resuscitation of the casualty.⁵ The limitation of trauma exposure in the UK is evident from previous studies which demonstrated that nearly half of trainees will not be involved in the surgical management of liver injury, 20% will not undertake a trauma splenectomy and only a quarter will

see a trauma thoracotomy during the whole of their surgical training.

These data from contemporary experience on Operation HERRICK support the development of a training post for military general surgical trainees under the direct one-to-one supervision of a consultant general surgeon. This training opportunity is as relevant for reservists as regular surgical trainees. Whilst the operative tempo of the last 12 months is maintained, a 2-month deployment would essentially provide trainees with the equivalent trauma surgery experience to the whole of their higher surgical training within the NHS. Trainees would gain experience in the resuscitation and management of severely injured casualties as well as generic surgical skills in the management of military wounds and military high-energy transfer penetrating trauma. In addition, the trainee would become versed in specific organ injury management, thoracic trauma and vascular trauma. There is a greater opportunity for one-to-one education and, as a consequence, there is the opportunity for education in the other core competencies within ISCP including professionalism that exceeds that available within the NHS.

References

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