Audit

Orthopaedic surgeons in Yorkshire – are we ATLS positive?

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Introduction: In 1993, the Major Trauma Working Group of Yorkshire proposed that hospitals should be accredited as Trauma Reception Hospitals with a policy for the response to the arrival of a trauma patient. These requirements include specific criteria for orthopaedics.

Methods: To evaluate if these criteria are being fulfilled, we carried out an audit comparing the response in the hospitals within the Yorkshire deanery to the arrival of major trauma. All consultant and middle-grade orthopaedic surgeons on call for trauma were contacted and questioned as to their ATLS provider status and involvement in the 'trauma call'.

Results: 16 hospitals were included of which 13 have a 'trauma team'. 191 surgeons (96% response) were included. 175 have completed an ATLS course. Of these, 72 (41%) had out-of-date qualifications. Only 9 (13%) were waiting to revalidate. Variation was seen in the frequency of accident and emergency department attendance by different grades of surgeon for major trauma.

Discussion: All hospitals have a response for major trauma although variations occur. The vast majority of orthopaedic surgeons in Yorkshire have been adequately trained in ATLS management (more so than any study has previously shown), particularly the middle grades, who are usually first to attend. The level of revalidation is low and reasons for this are discussed with recommendations for revalidation in the future.

Key words: ATLS – Audit – Orthopaedic Surgeons

Major trauma is the leading cause of death and disability in the first four decades of life. The cost to society in monetary terms and suffering is staggering, and the need for improved methods of caring for injured patients is as great now as it has ever been. A new approach to the provision of care for individuals suffering major, life-threatening injury first appeared in 1978, with the prototype Advanced Trauma Life Support (ATLS) course. This course, based on the assumption that appropriate and timely care could significantly improve trauma outcomes, was rapidly adopted by the American College of Surgeons (ACS) and incorporated into its educational programme.

The ATLS course provides a systematic approach to trauma care that is measurable, reproducible and comprehensive.¹ It supports the education, evaluation and quality assurance of doctors treating trauma victims.

In 1988, a review by The Royal College of Surgeons of England of 1000 deaths from major trauma concluded that death could have been avoided in about one-third of cases had patients been taken to an adequately equipped hospital with appropriately trained staff. Later in the same year, the ATLS programme was implemented in the UK by The Royal College of Surgeons of England in an effort to ensure that major trauma victims receive the necessary standard of care.

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In 1993, the Major Trauma Working Group of Yorkshire proposed several developments in the prevention and treatment of major trauma. The most far reaching of these proposals was that hospitals should be accredited as major trauma reception hospitals. The requirements for accreditation include specific criteria for each department. The relevant criteria for orthopaedics are as follows:

1. There is an agreed written and up-to-date policy for the response to the arrival of a major trauma patient.
2. The orthopaedic department must have an accredited ATLS provider in the hospital, and available to the A&E department at all times.
3. An ATLS-accredited consultant orthopaedic surgeon must be available via a 24-hour on-call system and able to respond to the arrival of a major trauma patient within 30 min.

Ten years following these proposals, this study was undertaken to assess whether the guidelines have been successfully put into practice by orthopaedic surgeons in the Yorkshire region.

Patients and Methods

Every hospital within the Yorkshire Deanery receiving major trauma was identified. The policy for the response to the arrival of a major trauma patient was obtained from their accident and emergency departments to determine whether a trauma team was available or if an alternative system was in place. All consultant and middle-grade orthopaedic surgeons providing an on-call service for trauma at these hospitals were identified and contacted by telephone, in person, or by post. Data were collected by means of a questionnaire. The middle grades were subdivided into specialist registrars and non-training career grades which included associate specialists, staff grades and Trust doctors. If any permanent member of staff was on leave and replaced by a locum then the locum was included in their place as they were providing the trauma service at that time.

Results

In all, 16 hospitals were included in the study. Of these, 81% (13/16) have a designated trauma team who are mobilised to respond to the arrival of major trauma. Following the arrival of major trauma to the remaining 3 hospitals, the senior doctor in the accident and emergency department manages the case and independently requests the assistance of the relevant specialities. Of these 16 hospitals, 7 (44%) run their own ATLS courses. A total of 200 orthopaedic surgeons were identified for the study, of

Figure 1 Number of respondents to the questionnaire. Cons, consultant; SpR, specialist registrar; NTCG, non-training career grade.

whom 91 were consultants, 53 were specialist registrars and 56 were non-training career grade surgeons. The overall response rate was 95.5% (191/200) with 93.4% (85/91) of consultants, 98.1% (52/53) of specialist registrars, and 96.4% (54/56) of non-training career grades responding to the questionnaire (Fig. 1). Of the 191 respondents, 175 (91.6%) had successfully completed an ATLS provider course. This group consisted of 83.5% (71/85) of consultants, 100% (52/52) of specialist registrars and 96.3% (52/54) of non-training career grades. In the group of ATLS providers, 41.1% (72/175) of the respondents had ATLS qualifications which were out-of-date, being more than 4 years old. Those who were out-of-date included 53.5% (38/71) of consultants, 38.5% (20/52) of specialist registrars and 26.9% (14/52) of career middle grades (Fig. 2). Despite the large numbers of respondents who were out-of-date, only 12.5% (9/72) were on a waiting list to revalidate their ATLS qualification which included 2.6% (1/38) consultants, 30% (6/20) specialist registrars and 14.3% (2/14) of non-training middle grades. 88.5% (169) of orthopaedic surgeons, (80% of consultants and 95.3% of middle grades) had attended the accident and emergency department in the previous year to deal with major trauma. Of the orthopaedic surgeons, 129 (67.5%) had attended major trauma more than 5 times in the last year and 33.5% had attended more than 11 times. Figure 3 details the frequency of trauma call attendance in the different grades in this study within the last year.

Discussion

Although not all the hospitals identified in this study have designated trauma teams available, all have a policy for the arrival of a major trauma patient. The trauma team concept exists to optimise the approach to the immediate management of the severely injured patient and to

Figure 2 Level of ATLS validation of surgeons responding. Cons, consultant; SpR, specialist registrar; NTCG, non-training career grade.

maximise existing resources. The establishment of such teams is generally regarded as the 'gold standard' in mobilising personnel to the seriously injured patient.² Driscoll and Vincent showed that trauma teams in which staff carry out allocated tasks simultaneously have the quickest resuscitation times.³ An increase in the availability of such teams is now being seen across the country. Our figure of 81% of hospitals with a trauma team compares very favourably with a national survey in 1997 of trauma teams in the UK where only 61% had either a trauma team or another adequate system for getting specialists rapidly to the injured patient.⁴

ATLS training has been shown to improve the effectiveness of the management of trauma cases by medical staff particularly in those patients with serious but survivable injuries.⁵ In 1995, a study by Esposito *et al.*⁶ of 1300 surgeons revealed that only one-third of surgeons reported having completed an ATLS course. It is, therefore, encouraging to note that over 90% of the surgeons in this study are ATLS certified, including 100% of the specialist registrars. This is important as the middle-grade orthopaedic surgeon will most often be the first to attend a trauma call. In the Yorkshire region, ATLS certification is mandatory for trainee orthopaedic surgeons, explaining the 100% ATLS provider status of specialist registrars in our study. Campbell *et al.*⁷ have shown that very few regard ATLS primarily as a career advantage but most trainees believe that it provides genuine practical benefit for patients.

Our study shows that significant proportions (41.1%) of respondents have not re-certified their ATLS qualification within the required 4-year period. Only 12% of these have registered for revalidation. This low proportion of surgeons awaiting revalidation may be due to several factors such as the limited availability of study leave and funding, particularly when other areas of training also need to be addressed. Many respondents felt

Figure 3 Number of trauma calls attended in the last year by orthopaedic surgeons. Cons, consultant; SpR, specialist registrar; NTCG, non-training career grade.

that they had no need to revalidate as they regularly attended trauma calls and, therefore, were continually keeping their skills up-to-date. The attrition of cognitive and trauma management skills after the ATLS course has previously been studied and a decline in both is seen fairly rapidly with a maximum attrition of cognitive skills occurring within 2 years of ATLS completion. However, the major principles of adherence to priorities and maintenance of an organised approach to trauma care are preserved for at least 6 years after ATLS.⁸ It may be reasonable to suggest that revalidation be undertaken every 6 years rather than 4 years which will relieve some of the above concerns.

Conclusions

This study has investigated the proposals put forward by the Major Trauma Working Party Group of Yorkshire for several aspects of trauma care. The authors have shown that the trauma centres in this region have a well-

established protocol for the response to the arrival of a major trauma. As a speciality, the orthopaedic surgeons of Yorkshire do indeed fulfil the criteria laid down and have a very high proportion of ATLS providers, significantly more so than in any previous study published. However, problems regarding revalidation have been identified and the authors suggest an extended revalidation period of 6 years may be more practical. It would be re-assuring to identify similar standards throughout the UK, particularly in these times of audit, revalidation and evidence-based practice.

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