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Orthopaedic Trauma Education: Visions for the Future Through the OTA

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Abtract: As the trauma center system continues to expand, not only will the requirement for more and better trained trauma surgeons increase, but the means of educating them will need to become more standardized. The general surgeons recognized this many years ago, but orthopaedic trauma has lagged in its efforts to present a coordinated academic and clinical program to residents and fellows. The Orthopaedic Trauma Association has made a move to develop curriculum guidelines that may be used by training programs in an effort to improve the educational standards of this subspecialty. The recruitment and retention of young orthopaedic trauma surgeons remains an issue.

Trauma remains as the leading cause of death of young adults in the United States. It is estimated that over 125,000 trauma-related deaths occur annually. Injury consumes up to 40% of the nation's health care costs [3]. Over the last 30 years (after the experiences of Korea and Vietnam) trauma systems and centers have taken over a larger proportion of care of the badly injured patient with the recognition that trauma is a disease perhaps best treated by physicians specially trained to manage its unique problems [4,22,30,31]. Concomitant with this, a more systematic approach to the education and training of the general surgical traumatologist has been mandated [5,12,13,19], and yet the recruitment and retention of these physicians remains problematic. Issues such as poor reimbursement, legal liability and HIV risks, lack of role models and mentors, bad working hours, disruptions to elective schedules, and the perception of the trauma patient as being generally unsavory have all had a negative effect on the desire for young, qualified surgeons to consider a career in trauma [8,11,14,15,19,28].

During this time frame what has been the status of training for the orthopaedic traumatologist? Has it been keeping pace with the issues as recognized by the general surgeons?

Dr. Michael Chapman has written about the challenges which we currently face with respect to educating the young orthopaedic surgeon in trauma care [9]. He points out the uniqueness of the wide variety of surgical skills and educational background required of the orthopaedic traumatologist. Making prioritization decisions and operating in all body areas at odd hours on patients who frequently have multi-systems injuries demands more than just stamina [16,17]. The intellectual and technical components that mature with experience can only be effectively transferred to the younger surgeon through a formal didactic program encompassing a multidisciplinary curriculum and "shoulder to shoulder" surgical supervision. The pressure to continue moving in the latter direction will increase as the Health Care Financing Administration's (HCFA) regulations with respect to billing and the requirement for the teaching physician's presence "...during all critical and key portions of the procedure..." are weighed against diminishing reimbursements [18].

Other obstacles to the educational process for orthopaedic traumatologists include collateral problems caused by the increased penetration of administratively managed medicine. The continuity of follow-up drops as patients are transferred away from the index treating hospital by their managed care providers. Residents and fellows miss the opportunity to participate in post-operative care and procedures as well as in the management of complications. Equally important is the loss of the database for clinical research that occurs because of the lower percentage of patients returning to the original treating program for care [9].

To stabilize and improve the overall experience for the younger orthopaedic surgeon in training vis-a-vis trauma care either at the resident or fellowship level, it would seem essential that some type of standardization of the educational process take place. Who is to take on the leadership role? Currently, there is no body that has specific control or governance over orthopaedic trauma education and training. The American College of Surgeons Committee on Trauma has only six orthopaedic surgeons among its seventy-six active and senior members. The American Academy of Orthopaedic Surgeons (AAOS) seems to be de-emphasizing its role in subspecialty education as various subspecialty groups increase in strength and number.

The Orthopaedic Trauma Association (OTA) is a scientific body established in 1985 for the purpose of improving the care provided to the patient who has sustained muscoskeletal injury by any mechanism. Although the OTA does not have any ability to accredit or sanction orthopaedic post-graduate educational programs, its executive board believes that it is uniquely positioned to take on the task of standardization of orthopaedic trauma training. This project was assigned to the standing Committee on Fellowships and Career Choices by the executive board at its annual meeting in 1996 [24].

Current initiatives include the development of a list of recommended textbook readings for residents based on the post-graduate year of education. In addition, an extensive bibliography of "classic articles" and recommended readings (indexed by anatomic regions) has also been compiled [23]. This is to be published on a CD ROM database and it is the committee's intention to allow this to be updated on a yearly basis, with articles being added based on merit review and suggestions by the editorial board of the *Journal of Orthopaedic Trauma*.

A subcommittee is also currently involved in developing a more standardized resident curriculum for orthopaedic trauma training [25]. In its current form it constitutes 72 topics to be covered over a 2-year period and is made up of a compilation or integration of multiple sources including AO courses, fracture symposia, orthopaedic trauma textbooks, and OKU reviews. It also borrows from trauma curricula already in place at various teaching centers. The intent is to coordinate this with the bibliography as well as with bio-skills and anatomy laboratories with an emphasis on surgical approaches as well as pertinent regional anatomy. This curriculum will also allow for integration of training in orthopaedic trauma regional radiology.

Consideration was also given to developing a curriculum that would be feasible for orthopaedic trauma fellowships. It was determined that this probably would not be workable in that any given fellowship program is highly institutionally specific, with its emphasis driven to a large degree by the specific areas of interest of each program's director and its faculty. This was looked at by the American Association for Surgery of Trauma and the American College of Surgeons Committee on Trauma when they evaluated the same issues for general surgical trauma during the 1980s and early 1990s. They recognized that the object of a fellowship was to provide additional advanced training and education in general surgical trauma built on a knowledge base that should already have been established during the resident training period. As such, it was deemed more appropriate to develop "guidelines" for trauma fellowships rather than a full curriculum. The resulting document was published in *The Journal of Trauma* in 1992 [4]. Significantly, the Residency Review Committee for surgery declined to consider trauma fellowships as being under its purview.

Using this document as a template, the OTA Committee on Fellowships and Career Choices is in the process of developing a parallel document that would address guidelines for fellowships in orthopaedic trauma [26]. It is hoped that these guidelines will help those institutions with established programs better focus on the educational process and assist with self assessment. For those institutions that are considering establishing such a program, these guidelines would provide the benchmark for a well-rounded educational experience. Further, it may serve as a resource document to establish points of inquiry for residents in their consideration of a program as a place to receive their trauma training. The document in its current form comments not only on duration and scope of training but also on the program objectives, staff organization, and provides a general curriculum over the training period. In addition, to act as an advocate for the fellows, basic guidelines for clinical and educational facilities and resources are proposed as well as a mutual evaluation process for both trainers and trainees.

Finally, the OTA has taken on the task of becoming a "clearinghouse" for information on orthopaedic trauma fellowships. Although the OTA does not have the ability to accredit or sanction orthopaedic post-graduate institutional programs, it is clear that everyone would benefit from the centralization of information. Before 1995, information about orthopaedic trauma fellowships could be found in the Academy's post-graduate fellowship booklet [3]. Unfortunately, this was an incomplete listing only 19 of 29 available programs in 1995. The Committee on Fellowships and Career Choices sent questionnaires to all orthopaedic programs in both the United States and Canada and was able to develop demographics and a reference directory listing information on all the programs that was previously not

available. By cross referencing all names of fellowship applicants, a reasonable estimate of the total pool of residents seeking to find orthopaedic trauma fellowship positions was determined. In 1996 the United States had 29 programs with 50 positions available. There were only 46 applicants for those 50 positions. In the 1997--1998 academic year there were five American programs that remained unfilled [27].

Interestingly, there are only three programs that are currently "accredited" by the Accrediting Council for Graduate Medical Education (ACGME) [1]. There are probably two primary reasons for this limited number of accreditations. The first has to do with the current interpretation of the HCFA guidelines on billing by fellows for services rendered to federally funded patients. Basically stated, hospitals with ACGME teaching programs may not render bills on behalf of fellows. Obviously, this could present a negative economic effect on those programs that routinely bill for fellow-provided services when they operate in the absence of the true teaching physician. In fact, one program recently dropped its ACGME accreditation because of this [10]. The second reason is that the accreditation process itself is quite lengthy and thought by those who have looked into it as being overly burdensome. It is not clear that ACGME accreditation actually provides any direct benefits to a program.

As orthopaedic trauma surgery matures as a subspecialty, it is the fundamental hope of educators in this field that some consensus as to the standardization of the training process will be reached. The OTA may continue to take the lead, but success will only be achieved through the cooperative effort of the AAOS, the American College of Surgeons and the Residency Review Committee for Orthopaedics. Hopefully, the guidelines that evolve will improve the level of guidance available not only to the resident trainee who is interested in pursuing a career in orthopaedic trauma, but also to the orthopaedic traumatologist in fellowship training or just starting out in practice. The recruitment and retention of young orthopaedists for a career in trauma remains as a large issue still in the early stages of examination by the OTA [6,7,29], but one whose importance cannot be overlooked. The perception that trauma is merely a common thread among all orthopaedic subspecialties rather than a legitimately dedicated area for both clinical and academic pursuit has adversely impacted on its ability to gain the recognition and the support required for proper nurturing [16,17,20,21].

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