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KEY LECTURE

Our Headache Fellowship: a 10-year history

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Abstract There has been a clear trend in American medical education after World War II toward training specialization and subspecialization. After some early specialization efforts by the American Board of Psychiatry and Neurology, further efforts were undertaken by the United Council for Neurologic Subspecialties (UCNS), leading to the introduction of the neurologic subspecialty of Headache Medicine in March, 2005. The training program at our center at the Brigham and Women's Hospital Department of Neurology, Harvard Medical School, in Boston, Massachusetts, was accredited in 2008 and has graduated 14 trainees since its inception. Our experience is reviewed.

Keywords Neurologic subspecialty · Headache Medicine · Graduate medical education · Fellowship · Curriculum · United Council for Neurologic Subspecialties

Introduction

There has long been a perception that developing knowledge and treatment advances in headache care were not filtering down to the many patients who could benefit from them. There were too many patients and too few adequately trained physicians. Studies [1, 2] suggested that as many as 50% of individuals meeting criteria for migraine in the US population had never even entered the healthcare system for headache care.

Coupled with a clear need for improved access and quality of care was the trend in American medical education after World War II toward training specialization and subspecialization. After some early specialization efforts by the American Board of Psychiatry and Neurology, progress in neurologic subspecialization slowed. This in part led to the development of The United Council for Neurologic Subspecialties, formed to stimulate the development of neurologic subspecialities with the goal of improving patient care and preserving and enhancing individual subspecialty practices [3].

The neurologic subspecialty of Headache Medicine was added by UCNS in March, 2005. Academic centers with headache faculty, including ours at the Brigham and Women's Hospital Department of Neurology, Harvard Medical School, in Boston, Massachusetts, soon began to apply for accreditation. Today, some 10 years later, there are approximately 32 accredited Headache Medicine training programs in the US. This is the story of our center.

The Headache Medicine Fellowship

Training programs in headache existed in the US and elsewhere long before the neurologic subspecialty of Headache Medicine was inaugurated. Physicians would serve essentially as apprentices in centers dedicated to the management of headache. In 1998, in response to an increase in interest in the development of neurologic subspecialties, and in part driven by an explosion of neuroscience research, the American Academy of Neurology (AAN) appointed a commission on subspecialty certification. This led to the formation of the separate nonprofit

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organization, the UCNS [4], to help oversee the process of both the accreditation of subspecialty training programs and of the certification of trainees who, through examination, have demonstrated competence in their subspecialty area. UCNS provides no funding to fellowships [5].

The original idea for a formal headache fellowship was advanced by the American Headache Society beginning in 2003. This proposal was endorsed as well by the American Academy of Neurology, the American Neurological Association and other organizations that would ultimately come together to form UCNS, which was given the mandate to develop mechanisms for accreditation and credentialing of subspecialty training programs [3].

The John R. Graham Headache Medicine Fellowship

I arrived at the Faulkner Hospital, a well-respected academic community hospital, in 1999 just before the hospital merged with the much larger Brigham and Women's Hospital several miles down the road. Faulkner had had a long history of excellence in headache care and education during the tenure of John Graham and later that of Egligius Spierings. Interest in headache was at a low ebb when I arrived, however, and my efforts therefore were concentrated in general neurology.

As the merger progressed, I became part of the Brigham Neurology Department in 2004 and my focus of interest changed as I was charged with reinvigorating headache care at Faulkner. The effort was directly encouraged by the department chair, Martin Samuels, with great foresight and a level of support for headache that was uncommon among neurology department chairs at the time. The headache clinic, renamed for John Graham, would now be under the Department of Neurology.

To reinvigorate the clinic, the first step was to bring on board a known headache expert. Elizabeth Loder was not only well known throughout the headache world, she had previously trained in headache medicine at Faulkner and was the perfect choice. One little-known wrinkle was that Dr. Loder, like Dr. Graham, was an internist, not a neurologist. Another wrinkle was that she has never actually worked for us fulltime. When we first approached her with the idea of working at the center, she was in the process of negotiating a position as an editor for the *British Medical Journal*, a job that very much interested her. After some reflection, her decision was to accept both jobs on a part time basis and, during her time at the center, she has always worked two jobs. Over the years her expertise in editing, writing and scientific research has been a great benefit to our department and our trainees.

Adding fellowship training was a natural extension of our mission. Planning for this took place as soon as the subspecialty of Headache Medicine was announced in 2005. Our program was one of the first accredited in 2008. Our first certification-eligible graduate was in 2009.

The initial application process

The application process stipulates that all fellowships must have an ACGME-accredited sponsoring institution which takes overall responsibility for the quality of the training. The primary institution or site, generally a dedicated headache clinic, is expected to provide both adequate facilities and resources, and adequate faculty and personnel, in order to provide a quality longitudinal training experience for the fellow.

Training is for a minimum of 12 continuous months. To apply, candidates must be licensed in the United States or Canada and must have graduated from an ACGME or Royal College of Physicians and Surgeons of Canada (RCPSC)—accredited residency training program in neurology or other specialty. By intention, application is not restricted only to neurology residency graduates. Training programs are expected to provide fellows the opportunity to evaluate, under supervision, a minimum of 200 patients per year. The program's academic structure is based on the *Headache Medicine Core Curriculum* [6].

Compliance with all the stated requirements is documented in a lengthy on-line application which, together with payment of the application fee begins the process of accreditation.

Fellowship funding

An early and ongoing issue has been funding of the training program. UCNS provides neither funding nor guidelines on funding, leaving programs to fend for themselves. Various options have been employed. One, the use of grants, gifts or awards, is not guaranteed year after year and does not promote continuity or allow planning. The only option that appeared available initially was to derive funds from ongoing patient care activity of the clinic, including that of the fellows. This has proved a durable funding source that has covered the costs of training at the center and has allowed us to participate within the department without concern for our financial survival. This plan though, in contrast to other training arrangements, requires the full licensing, accreditation and credentialing of fellows as staff physicians so that they may be enrolled in the insurance programs that cover our patients. While remaining under supervision, they become the attending physician for their patients and "own" the cases. Conceived by necessity, this financial arrangement produced an unexpected value. Exit interviews have uniformly suggested strong support among

the trainees for this system. Trainees note that the "real world" experience during training provides a strong foundation and confidence for their future clinical activities. One downside is the time, cost and effort required to obtain all the necessary approvals. Also, ethical concerns have been raised by some over this financial structure. Patients are fully aware of how the system works, however, and who they are scheduled to see; and no trainee has reported feeling coerced, used or unsupported.

More recently another concern has arisen. This current financial structure, for all practical purposes, restricts the fellowship to accepting only US-trained neurologists. This limits the pool of available applicants and restricts the enrichment of the program by limiting exposure to other disciplines. Whether a fully precepted model, where care of the trainee's patient is billed under a supervising provider, is as viable as the current system is being investigated.

Working with GME

UCNS recommends, where possible, that in structuring their fellowship, programs work with their local graduate medical education (GME) office. These offices coordinate and monitor the quality of graduate medical education activities at their individual institutions. However, not all institutions have a GME office and working with GME was not explicitly required, at least in the early days of the fellowship. As a result, our program was accredited by UCNS and began operation without reference to GME, a fact that came to light in rather stark fashion about 2 years into our operation when we were advised that we were not in compliance with our institution's GME requirements. This deficiency was remedied by yet another round of applications and review, this time by our GME office that ultimately led to their approval of our fellowship. We now operate in a fairly integrated fashion through GME to UCNS to keep everyone updated on the status of the program.

A word about administrative efforts. The administrative work required to start and maintain a program is not insubstantial. We have now been re-accredited twice, not including the initial UCNS application and the subsequent GME review. Both groups have a policy of periodic re-evaluation and UCNS has recently instituted an additional annual review that amounts to a mini-reaccreditation. We have just recently begun to receive some administrative assistance; however, for those contemplating this process, be prepared to devote hours of administrative time in addition to that required to actually run the program.

Applicant recruiting

After training one fellow per year for 2 years we applied for and were accredited to train two fellows per year. Initial interest in our fellowship seemed strong. Inquiries were received year round and the selection process for a given year was completed more than 1.5 years before the start date. We always knew who was scheduled to start training and had ample time to plan. All trainees to date have been neurologists. For some individuals, completion of their prior training coincided with their start date in the fellowship. Others adjusted their postgraduate activities in anticipation of their start date. Those with prior specialty training in stroke or behavioral neurology have been able to provide special insight from these disciplines.

Other programs reported difficulty with this 'open' application process and, in the past two application cycles, the subspecialty has moved to a match process administered through the National Resident Matching Program [7]. This, it was thought, would be more fair to the programs and more familiar and acceptable to candidates. It also shortened the admission process timeframe considerably. The review and interview process begins in late summer, concludes in the fall and results are announced in December for a start date the following July. The last two years have seen a significant reduction in the number of applicants, an experience that is atypical for other programs in the Match. At present the explanation is unclear.

The clinic day

The UCNS mandates that 80% of the fellowship consist of direct patient contact. Thus the outpatient clinic is at the core of the training experience. Clinic weeks are divided into 5 days, ten sessions; each session is 4 h. Each fellow is assigned eight sessions per week of direct patient care, most of that time spent in the Graham Center clinic. Each session has an assigned preceptor. Two sessions, or one day per week is devoted to research and teaching.

In addition to the core clinical experience, each fellow spends one session per week of direct patient care divided between a Boston Children's Hospital pediatric headache experience and at the Fish Center, a women's health center in the Brigham Health system.

Short observerships in orofacial pain medicine and in anesthesia/pain are also included in the clinical experience.

In addition to learning from clinic patients, conversations with preceptors, and case discussions at noon meeting, we present a series of didactic discussions. The curriculum topics are pre-specified and suggested readings

are available. Attending discussants rotate, so that each attending covers a topic every month to 6 weeks.

Ample opportunities exist for fellows to prepare, practice and deliver presentations to a variety of audiences, from a teaching conference to medical students to a grand rounds presentation in the neurology department. Presentations at regional and national meetings are also common. We stress preparation and practice.

Over the course of the fellowship, fellows are expected to complete a guided research project and publish the results. Of necessity these are short and expected to be completed within a 6-month time frame. The goal is to provide familiarity with study design, institutional review board approval, compiling statistical material and writing and submitting a final paper for publication.

All staff and fellows are typically in the Graham Center site on Tuesdays. Noon conference on Tuesdays is a meeting of the entire clinic, and evening headache activities tend to be on Tuesday nights. These include periodic Journal Club, Research Meeting and any outside headache meetings. Fellows are encouraged to participate in the activities of our regional society, the Headache Cooperative of New England, including both the fall meeting in Boston and winter meeting in March at Stowe, Vermont.

A periodic Visiting Scholar Program, administered by Paul Mathew, brings speakers in several times per year for an afternoon and evening of discussion, presentations, article review and socialization.

As of the end of this academic year, 2017, we will have graduated 14 Headache Medicine specialists. The overwhelming majority are practicing headache medicine today, most of them in academic positions and four run headache centers. One, Rebecca Burch, has remained on staff with us. It has been very rewarding to get to know and work with these colleagues. Each has left a mark on the program, helping over time to develop a rich history and tradition.

Graduation ceremonies, often held in Dr. Loder's garden in the late spring, draw faculty, spouses, children and others as we celebrate a year that seems to have passed too quickly.

The future of the Headache Medicine Fellowship—what have we learned?

Some reasons given in support of fellowship training are that it provides the trainee with personal satisfaction and professional recognition, shows commitment to maintenance of the best quality care, and sets trainees on the path of academic advancement [8]. Further, subspecialty training is generally supported by neurology graduates [5].

From our perspective the efforts to build and maintain a subspecialty training program have been more than repaid by the rewarding experience of being involved in the shaping of the early careers of young physicians and of the impact that these efforts are expected to have on the specialty of Headache Medicine and ultimately upon improvements in patient care.

General and program-specific challenges remain. Maintaining any subspecialty career track requires ongoing effort, financial support and growth [5]. The success of any particular subspecialty is not guaranteed. The initial enthusiastic interest in training and certification in some subspecialties may have slowed [8], and how various healthcare issues are decided in the future may in part determine whether some subspecialties survive long term. In Headache Medicine, continued growth of the applicant base is essential. Expanding recruiting efforts beyond the neurology training graduate could be helpful since the discipline of headache should appeal to a wide range of medical, surgical and dental training graduates. Also, reducing any barriers to access to headache fellowships occasioned by the admissions policies should be addressed. One example is setting application dates late in the year prior to training, creating uncertainty and potentially forcing applicants into other fellowships that match earlier. Such a policy may make the Headache Medicine Fellowship less competitive with other subspecialty programs.

Challenges within our program include, first, continued questions about the best methods to finance the training. A switch to an ACGME-based fellowship it is argued would open up the possibility of federal funding of fellows. In our institution, at least, this is not the case since we are already over budgeted on the number of residents/fellows we have compared with the calculated number upon which the federal support is based. Thus, such a switch would not change our financial situation. Next, attempts to reduce or avoid unnecessary administrative tasks and financial burdens on both the program and the applicants should be considered. Lastly, we experience the usual time and space limitations that seem a chronic and constant fact of academic life.

Though the manpower shortages and disparities that exist [9–11] in Headache Medicine cannot be resolved simply through an increase in fellowship training positions, it is nonetheless suspected that the 32 fellowship training programs in Headache Medicine provide incalculable impact beyond simply the number of graduates they produce.

Conclusions

We are proud of our fellowship training program. The extra efforts to develop and maintain the program are balanced by a sense of enrichment of all of us. We believe that the program and its graduates benefit the specialty of Headache Medicine and, as we honor the past contributions of John

Graham, we eagerly await the future contributions of our graduates.

Compliance with ethical standards

Conflict of interest I certify that there is no actual or potential conflict of interest in relation to this article.

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