Thyroid and Parathyroid Surgery Fellowship
Harvard Medical School
Massachusetts Eye and Ear Infirmary
Initiated February 2004

Introduction/Rationale

This is a one-year clinical fellowship at the Massachusetts Eye and Ear Infirmary to provide advanced knowledge and skills in endocrine surgery beyond the training available during residency. This training emphasizes scholarship, critical analysis of clinical problems, and the development of added skills required for this subspecialty, including the development of complex endocrine surgical skills, multi-disciplinary treatment planning, and experience in basic and clinical research methodologies. The fellowship is offered through the Harvard Medical School Department of Otology and Laryngology and resides within the Thyroid and Parathyroid Surgical Division at the Massachusetts Eye and Ear Infirmary. To our knowledge, this was the first formal institutional endocrine surgical otolaryngologic based training program which trains both otolaryngologists and general surgeons within the United States. We are strongly focused on training individuals who will then go on to an academic endocrine surgery career.

Massachusetts Eye and Ear Infirmary is a world class endocrine surgical center. Because of our unique multi-faceted environment, this fellowship has become a sought after premier endocrine surgical training venue within the United States. It is our intention, with a strong emphasis on research and teaching, to produce academic endocrine surgeons.

Strengths

The primary strength of Massachusetts Eye and Ear Infirmary as a venue for a Thyroid and Parathyroid Surgical Fellowship is the large endocrine surgical volume, as well as the close multi-disciplinary collaborative environment with medical endocrinology, pathology, and radiology, as well as the wealth of current and potential clinical research.

1. The fellow will be exposed to approximately 250 endocrine surgical cases performed at Massachusetts Eye and Ear Infirmary during the year of his/her fellowship. It is of note that the total case load for two of the fellowship attendings includes approximately 500
thyroidectomies, 150 parathyroidectomies, 50 neck dissections, and 30 associated airway cases per year.

2. The Massachusetts Eye and Ear Infirmary’s unique surgical environment involves exposure to both otolaryngologic as well as general surgical experience and techniques. This blending and otolaryngologic and general surgical philosophies and techniques have resulted in a tremendously unique environment with a unique surgical experience for the fellow.

3. The fellowship is structured so as to provide exposure to both full and part time staff with experience in endocrine surgery. The fellowship is also structured so that experience with both adult and pediatric endocrine surgical cases will be obtained.

4. The fellow is exposed to a variety of new and state-of-the-art techniques within endocrine surgery that have evolved at the Massachusetts Eye and Ear Infirmary, including recurrent laryngeal nerve monitoring and intraoperative PTH assay.

5. Exposure to a number of techniques associated with endocrine surgery, such as evaluation and treatment of vocal cord paralysis, associated airway assessment, and extensive lateral neck surgery of nodal disease for thyroid malignancies.

6. Close collaborative interaction with referring medical endocrinology pathology/cytology (William Faquin) as well as radiology (Hugh Curtin).

Program Overview

Overview

1. The fellowship proposed is a one-year clinical fellowship at Massachusetts Eye and Ear Infirmary sanctioned by the Department of Otology and Laryngology at the Harvard Medical School. A proposal is being considered by the American Head and Neck Society Training Council to have the fellowship, when established, approved by the American Head and Neck Society. The fellowship could eventually be expanded to include two fellows per year, one otolaryngology, and one general surgeon with one full time clinician and one full time research fellow.

2. Fellow candidates. The fellowship would be available to US otolaryngology and general surgical residents after completion of their ACGME accredited residency (or foreign trainee with equivalent level of training), with fulfillment of requirements to sit for appropriate certifying examinations, upon recommendation of the candidate’s residency training director.
3. Fellow selection. The director will solicit and review applications and invite candidates for interviews with the fellowship attending group. The fellowship will be advertised to surgical residency program directors and at national endocrine surgical meetings. The fellowship director will be curriculum advisor and counselor to the fellow. It is my personal commitment, with respect to time, energy and effort, and that of the fellowship attendings to provide the intellectual environment for acquiring the knowledge, skills, clinical judgment and attitude, which are essential to the practice of this subspecialty.

4. Fellowship attending staff. The fellowship attending staff includes Drs. Gregory Randolph (Director), David Lesnik, Randall Gaz, and Paul Konowitz, a group of dedicated and experienced endocrine surgeons. Exposure to this group allows a broad exposure for the fellow to a variety of styles, yet maintaining a central institutional grounding reflecting the full time senior attending surgical styles.

Fellowship Program Objectives

It is our intention that the Massachusetts Eye and Ear Infirmary becomes an international center of endocrine surgery and that to this end the fellowship generate academic endocrine surgeons destined to be leaders in the field. The training of fellows in thyroid and parathyroid surgery is accomplished by focused exposure to the clinical practices of our endocrine surgeons in OR and clinic, and through interactions with collaborating specialties.

The endocrine surgical fellowship objectives include:

1. To obtain a comprehensive, state-of-the-art knowledge of clinical management of the spectrum of diseases affecting the thyroid and parathyroid glands and related structures, including the underlying related endocrine physiologic relationships.
2. To develop a working fund of knowledge of thyroid, parathyroid, and neck base anatomy and embryology.
3. The ability to perform advanced and complex surgery of the thyroid and parathyroid glands.
4. Expertise in recurrent laryngeal nerve anatomy and technique and expertise in a variety of techniques of RLN monitoring.
5. Expertise in vocal cord laryngeal assessment and treatment of unilateral and bilateral vocal cord paralysis, including injection and thyroplasty techniques.
6. Expertise in preop assessment, including vocal cord mobility, imaging studies associated with airway assessment and interpretation of preoperative parathyroid localization testing
7. Application of intraoperative PTH and minimal assess techniques of parathyroid surgery
8. Detailed comprehension of pathology and biology of thyroid and parathyroid neoplasia
9. Skill in the assessment and surgical treatment of nodal disease in the central and lateral neck
10. Skill in assessing the airway as it relates to benign and malignant thyroid disease, including cervical and substernal goiter as well as malignant airway invasion. An emphasis will be placed on developing skills of preoperative airway assessment and on timing and nature of airway intervention, including tracheotomy and airway reconstructive procedures.
11. Principles and indications for adjuvant procedures, including $^{131}$I radioactive iodine treatment, external beam radiation treatment, and thyroid hormone suppressive therapy.
12. Expertise in the allied fields of pathology, cytology, and diagnostic radiology (CT scanning, sonogram, and nuclear medicine) as it relates to the thyroid and parathyroid glands.
13. Expertise in the multi-disciplinary management of patients, including collaborative consultative skills extending to medical endocrinology, radiology, and pathology and exposure to the clinical issues of these collaborative specialties through short, structured rotations.
14. Refining endocrine surgical office practice skills by working in the clinics of supervising endocrine surgeons. With such time we hope to engender supportive interactions with all patients, including the frequent endocrine surgical scenario of a young female patient with a recent diagnosis of thyroid malignancy.
15. Knowledge of the principles of early cancer detection and knowledge of carcinogenesis and application of genetic analysis as it relates to thyroid cancer and specifically medullary thyroid cancer ret oncogene analysis.
16. An exposure to conservative and minimal access endocrine surgical procedures
17. Understanding scientific clinical research methodologies, study design, biomathematics, clinical trials, inter-center cooperative trials, data analysis, preparation of scientific results and publication.
18. Organization of case review, literature analysis based conference for Mass. Eye and Ear residents, medical students, and medical endocrine fellows

19. Ability to manage an academic tertiary referral practice and ability to participate in continuing education and collaborative translational research

**Fellowship Program Details**

**A. Fellowship schedule**

We plan the following weekly schedule

1. Two full days in the operating room
2. One full day in clinic
3. One full research day
4. One full fellowship rotation day

In the OR, cases are supervised by attendings. The fellow will assist and provide for resident education. In the clinic, the fellow will be overseen by the attending. There will be no unsupervised clinical activity within endocrine surgery.

The research day is a manifestation of the fellowship’s strong emphasis on completion of a clinical or basic science project with one to two publications anticipated. There will be a weekly fellow research meeting with Dr. Randolph. A written plan for clinical research is expected by the second month of the fellowship.

The fellowship rotation day represents short structured rotations one day per week for periods of time during the year and will be provided in several allied areas of study to broaden the fellow’s endocrine surgical perspective and to make use of the substantial Mass. Eye and Ear Infirmary/Harvard/Boston regional medical and scientific strengths. The rotations will include time in the following units:

1. MEEI, Voice Lab – Dr. Glen Bunting, Ramon Franco
2. MEEI, Department of Radiology – Dr. Hugh Curtin, Mary Beth Cunane
3. MEEI Pathology-Cytology– Dr.s William Faquin, Peter Sadow
4. The Children’s Hospital Biostatistics – Dr. David Zurakowski
5. MEEI Sonogram guided FNA Unit – Dr. Mary Beth Cunane
6. MGH Endocrine Thyroid Associates – Dr. Gil Daniels, Dr. Doug Ross
These rotations will be started at the beginning of the year to familiarize the fellow with the variety of important collaborative relationships within the field of endocrine surgery.

B. Call/Vacation

There will be no in-house call. Beeper call will be during the day and in the evenings, Monday through Thursday only. An attending endocrine surgeon will be on call at all times. The fellow is allowed a two-week vacation to be coordinated with the Director.

C. Supervision

The fellow will meet once a week with Dr. Randolph, and using the textbook “Surgery of the Thyroid and Parathyroid Glands” as a syllabus as well as other materials, will provide a comprehensive review of endocrine surgery. These weekly fellow supervisory meetings will also provide a format for structured feedback on performance as well as career counseling. This meeting is in addition to the fellow research meeting, which is expected weekly with Dr. Randolph or the fellow’s research supervisor.

D. Program details

The Massachusetts Eye and Ear Infirmary Endocrine Surgical fellows is expected to participate in CPC’s, M&M, and in Grand Rounds and in a monthly Boston City Endocrine Surgical Resident/Fellow conference to be organized and held at Massachusetts Eye and Ear Infirmary on a quarterly basis. In addition, the fellow is expected to be involved in the Harvard/MEEI based course “Surgery of the thyroid and parathyroid glands” held each November. The fellow will also be encouraged to attend AAO-HNS, ACS, AHNS and AAES meetings. The fellow may also accompany Dr. Randolph on his semi-annual Russian Surgical Mission along with the MEEI resident, which in the past has been held in St Petersburg, Gomel and Kiev or other international surgical and lecturing trips.

E. Research

The fellow will be given one day per week for research. The fellow will be expected to submit a research plan within two months of the fellowship start. Weekly meetings with Dr. Randolph or the fellow’s research supervisor will be required to assure completion of the project. It is expected that approximately one to two papers will be presented and completed for publishing by the completion of the fellowship. A wide range of projects (clinical and basic science) are available at MEEI, Harvard, MGH, and MIT communities. All work must have
appropriate mentor supervision as approved by the Fellowship Director. At MEEI, upcoming research topics include

1. The initiation of an inter-center study through the newly emerging Endocrine Surgical Study Group of the AAO.
2. Ongoing intraoperative RLN electrophysiologic projects
3. Ongoing intraoperative PTH analysis projects
4. Formulation of SEER and MEEI databases
5. Analysis of existing MEEI/MGH FNA database

Environmental impact/Resident Impact
A variety of cases in which the fellow would be scrubbed would be unmanned by senior residents. In cases where the senior resident elected to scrub, the fellow’s role would be that of an observer. The fellowship includes significant amount of time in clinic and protected research time. The fellow will be exposed to clinics not currently covered by residents.

Fellow as Resident Teacher
One principal focus of the fellowship is the coordination of resident endocrine surgical educational activities. It is our plan to have the development of the MEEI fellowship coupled with the development of an endocrine surgical core curriculum for MEEI Otolaryngology residents. This resident teaching role is one of the most important expected roles of the fellow, helping to provide improved endocrine surgical education to MEEI otolaryngology residents and Harvard medical students. This would be achieved, not only through an informal case by case discussion with literature review, but also through the organization of a MEEI/Boston-wide endocrine surgical conference described above

Funding
Clinical work of the fellow within the Department may be possible, but no unsupervised care in the area specific to fellowship will be allowed. A stipend is provided.

Analysis of Experience
Note that the ACGME accreditation is now currently unavailable for this specialty and that there is no certificate of added qualification available.
A. Staff to fellow

The Director and other fellowship attendings will observe and assess the fellow and will document this assessment on fellow assessment forms at the end of year. The areas in which the fellow will be assessed include:

1. Acquired clinical body of knowledge
2. Skills in the physical exam and preop assessment
3. Technical surgical proficiency
4. Overall patient management/clinical judgment/decision making
5. Communication with patients and colleagues
6. Consultative skills
7. Professional attitude
8. Humanistic qualities
9. Teaching ability, presentation skills
10. Overall efficiency, organization, cost effectiveness
11. Research aptitude/scholarly potential

This information will be provided to fellows through timely structured feedback meetings with the fellowship director once a week and at an exit interview. Exit interviews will also be required with the research supervisor if this is not the fellowship director.

B. Fellow to staff

A case log will be recorded by the fellow and submitted to and reviewed with the fellowship director at the completion of the fellowship. The fellow will provide information on the fellowship through an analysis of the following areas documented on a fellowship analysis form:

1. Organization of fellowship
2. Quality of educational material presented
3. Value of clinical training
4. Value of surgical training
5. Mentoring
6. Balance between educational and service requirements
7. Evaluation of each endocrine surgical fellow attending in the following areas
   a. Value of clinical training
   b. Value of research training
c. Mentoring value

8. Issues relating to duration of clinical service

Respectfully submitted,

Gregory W. Randolph, M.D.

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