Emerging Subspecialties in Neurology: Neuroinfectious diseases

Infection as a cause of neurologic disease is a prominent feature in the history of medicine. The training of the practitioner called to care for these patients has changed throughout the years. To understand the history of infectious disease in neurologic practice, consider the relative infancy of the specialty of neurology in the United States. Neurology as an independent specialty board did not emerge from the cloak of neuropsychiatry and internal medicine until after World War II and the founding of the American Academy of Neurology (AAN). Neuropathology was an integral part of the curriculum, and neuroinfectious diseases were taught primarily from the pathologic perspective. In 1964, H. Merritt thought infectious disease was sufficiently important to be the subject of the first chapter in the third edition of his *Textbook of Neurology*. The increasing importance of infectious disease in neurology is evident from the more recent publication of dedicated textbooks on both pediatric and general neuroinfectious disorders.

Early practitioners in the field of neurology were first recognized for their work with neuroinfections. A major purpose of the Pasteur institute that opened in Paris in 1888 was to care for the multitude of patients with rabies. In the same year, the first neurologist at Johns Hopkins' was noted to be involved in the treatment of tabes dorsalis. The 20th century saw several infectious diseases of epidemic proportions with significant neurologic sequelae. In 1917, Constantin von Economo described encephalitis lethargica related to the influenza epidemic. Anterior poliomyelitis was widespread in the 1940s–1950s. Complications of these diseases that required long-term neurologic care included postencephalitic parkinsonism and postpolio syndrome. AIDS, the present-day epidemic, has complications such as HIV-associated dementia studied by neurologists since the 1980s.

Non-accredited subspecialty fellowship training is currently available in this field at several institutions. Representative programs were located by Internet search of university Web sites and are listed in the table. The amount of time devoted to research and clinical varies between centers, and some institutions focus only on AIDS or virology. Interested trainees may also acquire expertise in infectious diseases in a neurology program active in research or closely associated with an established infectious disease service. Subspecialists practicing neuroinfectious diseases also

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<tr>
<th>Institution</th>
<th>Program director(s)</th>
<th>Web site</th>
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<tbody>
<tr>
<td>Johns Hopkins Division of Neuroimmunology &amp; Infectious Diseases, Clinical Fellowship</td>
<td>Justin McArthur, MD</td>
<td><a href="http://www.neuro.jhmi.edu/nrID/jobs.htm">www.neuro.jhmi.edu/nrID/jobs.htm</a></td>
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<tr>
<td>Massachusetts General Hospital, Advanced General Neurology Fellowship</td>
<td>Gopal Venna, MD</td>
<td><a href="http://www.partners.org/research/gme/research_gme.mgh.html">http://www.partners.org/research/gme/research_gme.mgh.html</a></td>
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<tr>
<td>UCSF Department of Neurology, Neuro-AIDS Clinical Research Fellowship</td>
<td>Richard Price, MD; Cheryl Jay, MD; and Serena Spudich, MD</td>
<td>neurology.ucsf.edu-brain/research.htm</td>
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CAREER PROSPECTS IN NEUROINFECTIOUS DISEASES Since accredited fellowships are still in the developing stage, entry to this field may take many forms. A career in this subspecialty would necessarily be located in a university affiliated hospital or large neurology clinic, with opportunities for clinical or basic laboratory research. A position in an established practice is preferable to creating a niche in this area at a local facility. The latter may be plausible for an individual in the form of an intermittent specialty clinic in addition to general practice. A search of the AAN directory provides a list of approximately 90 members of the Section on Neuroinfectious Diseases as in other specialties, requires a close identification with a mentor in the field.

DISCUSSION The development of neuroinfectious diseases as a subspecialty is essential for the care of large numbers of patients already affected by today’s most important pathogens and to prepare for tomorrow’s. Collaboration with internal medicine– or pediatrics-based infectious diseases specialists is an important part of this practice. Despite the long history of infections affecting the nervous system, the prospect of a formal subspecialty fellowship and certification combining these 2 fields remains a work in progress. Neurologists have the unique understanding of this complex organ system and how certain infections may cause damage. As more neuropathogens emerge, medicine will need more neurologists with subspecialty training, experience, and interest in infectious disorders to develop new diagnostic, preventative, and therapeutic options for these patients.

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REFERENCES