

Neuropathology Training and Status in Canada

Can. J. Neurol. Sci. 2010; 37: 159

How best to attract and train Neuropathologists is currently the subject of much discussion in Canada, occasioned by potential changes to the training requirements and status of the profession by the Royal College. These changes could potentially restrict the entry of trainees into neuropathology to those who have completed the specialty of Anatomic Pathology (AP) or General Pathology (GP), and would downgrade the status of the discipline to a subspecialty.

The article by Del Bigio and Johnson is thus both timely and persuasive¹. In discussing the current state of neuropathology in Canada, they have pointed out not only the evolution and successes of the discipline but also its challenges, both present and future. In an excellent survey, they have highlighted the multiple routes to entry into the profession currently available. This diversity has been one of the real pathways to success of the profession. In fact, only 47% of all practising neuropathologists have entered the field through pathology, although all neuropathologists must do a minimum of one year of AP. Only with the rigorous and full training requirements currently in place, does a trainee get a full exposure to the clinical neuropathology, clinical neurosciences, and research environments necessary for a career in academic neuropathology, into which the majority of these trainees will enter and to which they will contribute. While a short subspecialty training period will probably prepare trainees for an Anatomical Pathology career in which some basic diagnostic neuropathology will be required, it will be inadequate as a preparation for the milieu in which most neuropathologists will practise. One has only to look at and compare the academic and research output of General Pathologists, who receive short periods of training in multiple subjects. The lengthening of training after four years of AP to include exposure to neuropathology diagnosis, clinical training and research, would be formidable. Similarly, most neurologists/neurosurgeons would be loath to re-enter a full career in AP training in order to do neuropathology. Furthermore, Del Bigio and Johnson¹ demonstrate soundly the relationship of training to future practise and conclude that complete certification in anatomical or general pathology is of variable relevance to the practise of neuropathology, depending on the setting. They also convincingly argue that the use of similar technical methods does not define a discipline more than the theoretical foundations. Interestingly, this same realization is becoming evident in medical schools and institutions, where the rigid definition of departments based on common technical methods is giving way to groupings based on subject relevance.

The paradox in this situation is that while the training and status of neuropathology has been re-examined in Canada, over the last one to two decades we have witnessed an explosion of discovery in the neurological sciences, greatly expanding our understanding of both common, and of hitherto mysterious neurological diseases. Highly sophisticated clinical observation married to a well grounded knowledge of basic neuroscience, has led to enormous strides in the understanding of the dementias and degenerative diseases, stroke, prion disease, the neurological

effects of HIV infection, multiple sclerosis and developmental disorders. In all of these instances, the neuropathological contributions have been critical, and Canadian neuropathologists practising in our academic centres have been at the forefront of these studies. A further paradox is the observation that for years the current training mechanism in Canada has been held up internationally as one of the gold standards (International Society of Neuropathology internal survey of neuropathology training mechanisms).

The discipline of pathology has always straddled the line between the clinical and the basic sciences. At its best, the study and practise of pathology can bring diagnostic and prognostic insight and wisdom to the physician directly treating patients, while helping that physician understand how the physiological defects are acting on the patient. At the other end of the spectrum, the pathologist brings to the basic scientist a unique bio-physiological perspective based on the study of how the body goes wrong. Indeed, much of experimental biomedicine involves creating pathological states to recapitulate this - how fortunate is the pathologist who has the opportunity to see these experiments occurring naturally.

Although this applies to any study of pathology, it is arguably most obvious in the study of disease of the nervous system. The complexity of the brain, anatomically and clinically, demands a dedicated and sophisticated understanding of the clinical symptoms and course. This in turn requires an immersion in the field well beyond the mechanistic acts of peering down the microscope. Indeed, some of the giants of the field in neuropathology have been neurologists, who have specialized in neuropathology in order to better diagnose their patients and to extend knowledge in the field.

Ideally, the fully trained academic neuropathologist is one skilled at diagnosis and clinico-pathological correlation, who also undertakes investigative and research work in the basic and/or clinical neurosciences. Such a person provides vital support to clinicians and basic scientists, and in turn, relies on them for support for his or her own studies.

One of the strengths of the current system is that it provides a diversity of approaches to the discipline, each bringing a differing perspective to enrich the collective. No one approach could provide this diversity. Del Bigio and Johnson¹ have provided a cogent argument for its continuance.

*Samuel K. Ludwin
Kingston, Ontario, Canada*

REFERENCE

1. Del Bigio M, Johnson ES. Neuropathology in Canada: Overview of Development and Current Status. *Can J Neuro Sci.* 2010; 37:206-12.