

The Growing Pains of Spinal Surgery

Can. J. Neurol. Sci. 2004; 31: 136

Science and technology. Clearly the two major catalysts that account for the medicine we practice today. Over a century or two we have evolved from prescribing herbal remedies and phlebotomy for evil humors to stereotactic radiosurgery and interventional angiography for even the most complex of neurosurgical pathology. The same is true for spinal surgery; science and technology have combined to fuel a rapidly evolving subspecialty that even those of us practicing full-time have trouble keeping up with. In his article in this issue, "Spinal Subspecialization in Post-Graduate Neurosurgical Education" Dr. Toyota¹ has examined part of the impact this adolescent subspecialty has had on neurosurgical residency training programs.

The purpose of the paper, according to the author, was to raise awareness and generate discussion on how subspecialization should be managed within the context of 'general' neurosurgical training. Program directors from across Canada were canvassed to explore their attitudes and principles in teaching neurosurgical residents about disorders of the spine. Twelve of 13 surveyed program directors responded to a questionnaire examining background, infrastructure, and objectives of the training program.

Although Dr. Toyota's survey results are but a single snapshot in time, they seem to fairly represent the trend over the past decade toward spinal subspecialization in Canada. Somewhere around 50% of neurosurgeons at a given institution feel capable of limited instrumentation while 20% feel capable of more comprehensive instrumentation. Forty percent (5/12) of teaching hospitals report at least one dedicated neurosurgeon on faculty who restricts their elective practice to spine. Ten years ago there was one, or possibly two, in the entire country. Already in three of 12 teaching programs residents gain exposure through dedicated spine rotations. As clearly as the science and technology behind the treatment of spinal disorders has evolved, Dr. Toyota's observations on the trend towards spinal subspecialization have been borne out in the reality of our own practices. Although no objective evidence is offered, the impact on the standardization and quality of neurosurgical residency training is appropriately anticipated to be significant.

Perhaps the most contentious issues raised in this paper pertain to competencies and ownership of spinal surgery. It is somewhat ironic that in a specialty where easily two thirds to three quarters of a 'general' neurosurgical practice is made up of patients with spinal disorders, there are no dedicated spinal surgeons acting as neurosurgical residency training program directors. While this no doubt reflects the rapid evolution of spine as a subspecialty interest, it also renders the opinions of program directors on the competency of their residents in comprehensive spinal instrumentation largely invalid. They are not alone. National organizations across the continent have been struggling to establish competency standards but have become

mired in the politics of protectionism bred from a subspecialty with two sets of parents. Unfortunately, despite the optimistic results expressed in Dr. Toyota's survey, Canadian neurosurgical program directors are in a very tenuous position when it comes to defining competency for comprehensive and even limited spinal instrumentation.

It may surprise some in the neurosurgical community to learn that they are not alone in their spinal interests. One of the largest organizations of spinal surgeons in the world, the North American Spine Society, boasts a membership of over 1500 spinal surgeons in which only 30% are neurosurgeons while 70% are orthopedic surgeons. On a more local scale, the Canadian Spine Society has an active membership of 65 surgeons practicing in Canada who restrict the majority of their work to spine patients. Fifteen (23%) come from a neurosurgical background while 50 come from an orthopedic background. Somewhat embarrassingly, all 12 program directors responding to Dr. Toyota's survey agree that "the future of spinal surgery should be maintained under the umbrella of neurosurgery, with some form of participation by the spinal orthopedists." Given the relative contributions from each parent specialty to the spinal surgery community and patient care as a whole, it appears that some of the opinions expressed in this survey are not particularly well-grounded in reality.

The evolution of spinal surgery as a subspecialty, and perhaps eventually into its own specialty, will continue to be defined by science and technology much in the same way neurosurgery was defined many years ago. The process has so far, and will likely continue to occur independently of the wishes of various special interest groups, including residency training programs. Such groups will either adapt to changing practice patterns or become a casualty of them. Dr. Toyota is absolutely right that we have a responsibility to our residents to identify and adapt our training programs to reflect this change. From the results of his survey it appears that this process is well underway. The impact on quality of training remains to be defined. While the development of valid and uniformly acceptable training standards in spinal surgery is not only desirable but necessary, it is much more likely to be successful if the political parental umbrellas are left in the closet in favor of recognizing the richness and quality of input from all stakeholders, orthopedic and neurosurgical alike.

*R. John Hurlbert
Calgary, Alberta*

1. Toyota BD. Spinal subspecialization in post-graduate neurosurgical education. *Can JNeurol Sci* 2004;31:204-207