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Getting started in an area of interest

How does a physician become acknowledged as an expert in a particular area? This question is often asked by trainees and junior staff physicians because the mountain seems very high from the bottom. I should emphasize at the outset that it is very important to have at least one area of special interest, knowledge and ability. As William James, the philosopher, emphasized, he would be upset if someone denigrated his ability as a philosopher or violinist but could not care less if he was told he was poor at chess or cooking or golf. Having a special interest and collecting information and improving in that area of interest gives direction to the day’s activities and helps an individual’s sense of accomplishment and self-worth.

I think it often happens like this. Early in their career a doctor is struck with an individual encounter or event that stimulates an interest in a particular area. Let’s take for example isolated weakness of one foot. The interest might be tweaked by a patient, a comment on a ward round, or reading a paper. The doctor becomes interested in isolated weakness of one foot and does some work in this area – collects some patients, some observations, a literature search. The doctor is encouraged by a colleague or mentor to discuss what he or she has learned at a ward round or conference, and perhaps to report the work. The preliminary report gets published in a journal. Someone else has a patient with weakness of one foot and recalls the ward round or the report and refers the patient to the doctor, or simply asks advice about the patient. With time, the doctor acquires some more experience with the condition and writes a bit more. At this point he or she is not really an expert but does know rather more than most other doctors about the subject. Sooner or later doctors recognize the doctor’s interest and begin to refer patients thinking him or her knowledgeable. With time and exposure to many patients with weakness of
one foot, the doctor learns useful information about this condition and really does become an acknowledged expert who shares their knowledge and expertise in the literature.

I would like to share my own development as an example. Early in my career I became fascinated with patients who had strokes involving the brainstem and cerebellum, and the posterior portions of the cerebral hemispheres. From then on, I never turned very far away from my fascination with disease of the posterior circulation. Indeed, this area became my life’s major work, the culmination of which was a very long monograph on the subject (Caplan 1996).

In 1969, after my residency training in neurology under Dr Derek Denny-Brown, I began a fellowship in cerebrovascular disease at the Massachusetts General Hospital under the tutelage and apprenticeship of Dr C. Miller Fisher (CMF). Anyone familiar with CMF knows that this involved 4–5 hours a day – sometime between 8 in the morning and 11 pm at night at least 6 days a week – spent with Dr Fisher. This time with Dr Fisher on the stroke service at the Massachusetts General Hospital was the central point in my career. Stimulated and challenged by CMF, and the chairman of neurology, Dr Raymond Adams, and the chief neuropathologist, Dr E. P. Richardson, I had extensive exposure to stroke patients, and unparalleled masters to train my naive mind and to lead me through the labyrinth of the neurology and stroke literature.

Early during my stroke fellowship, several key patients stimulated my interest. The first patient was dramatic and quite humorous in retrospect. The day I saw him, I was sitting in CMF’s office at about 9 am when there was an impassioned telephone call from a neuroradiologist who told CMF that something very bad had happened to a patient who had just had a cerebral arteriogram. He asked CMF to see him. CMF said that he would see him and then turned to me and told me to go see the patient and he ‘would be along later.’ The patient was in Phillips house, an area for patients who could afford hotel-like service – plush rugs, special meals prepared by the staff, and often personal nursing attention. When I reached the floor, three nurses and several aids were huddled in the alcove and were delighted to see me. They told me that ‘something terrible has happened to Mr A.’ As they spoke, I saw a completely nude 40 years oldish man with long black hair careering down the hall bumping into the walls, entering the rooms of other patients, and shouting. He urinated on the rugs as he went. The nurses and other patients were terrified. I had to tackle Mr A to get him back to bed where he had to be sedated to be examined properly. He was completely blind although his pupillary light reflexes were normal. His eye movements were normal. He was unable to recall the events of the day or the preceding days. He was extremely agitated, restless, and hyperactive and flitted from one topic to another. He had no motor or sensory abnormalities. I performed a lumbar puncture and viewed the fluid under a microscope. The CSF was clear and contained no cells.

I was able to glean the following story from the medical records. He was a hair stylist with a clientele that was the Boston equivalent of upper crust women from Chelsea or Beverly Hills. Two days before he had become very dizzy while at work and had been referred to a vascular surgeon by his internist. The vascular surgeon thinking that the dizziness represented a transient ischaemic attack had ordered an arteriogram (this was before the coming of CT, MRI and diagnostic vascular ultrasound). That morning he had the arteriogram with an arch injection containing a large volume of contrast. Immediately after the injection, Mr A told the angiographer that he could not see and then proceeded to become very agitated.

At about 10 pm that night CMF rolled in and asked me if I had everything under control. I was puzzled by Mr A’s findings. CMF said that it was very interesting, referred me to some literature and left. By about 11 pm, Mr A could see a little and re-examination showed a right homonymous hemianopia. At this point he could not read although he could write. He still could give no account of the day nor could he retain any information that I gave him. The next morning he was much less agitated and could see normally, and he could read and retain information. But he still had a large memory gap for the entire day of the arteriogram. He had had a reaction to the contrast causing loss of function of the posterior portions of the cerebral hemispheres supplied by the posterior cerebral arteries causing cortical blindness, amnesia, and an agitated delirium. With CMF’s help I found in the library references for each of these findings. During the fellowship year I saw 50 or so patients with posterior cerebral artery territory lesions and collected their findings – at that time there was only a scanty literature on this topic.

Another patient who stimulated my interest in eye movement and pupillary abnormalities in patients with vertebrobasilar disease was an elderly woman, Mrs K, whose story I found very remarkable. Mrs K telephoned her daughter because she was upset that ‘the lights had gone out in her apartment.’ She thought that she had paid the electricity bill and was puzzled but could not see to look-up the number of the electricity company. The daughter said that she would be right over. When Mrs K opened the door, the daughter said ‘Mother, of course you can’t see, your eyes are closed!’ Mrs K had not willed her eyes to close and so was unaware that her eyelids obstructed her gaze. When I examined Mrs K in hospital, she did in fact have complete bilateral ptosis and no
movement of muscles innervated by the third cranial nerve on one side. There were scarcely any other important neurological signs. I surmised that she must have a midbrain infarct involving the third nerve nuclei and this made me realize that an individual does not always know if their eyes are shut unless they will them to close – that is willfully shut their eyes. She died a few years later and necropsy showed a unilateral infarct involving the third cranial nerve nucleus. This case was reported later (but my name was not included as an author) (Growdon et al. 1974).

Fascinated by eye signs, I began to analyse oculomotor abnormalities in patients with infarcts clinically localized to the midbrain and thalamus, comparing the findings with patients who had thalamic haemorrhages. The oculomotor signs in patients with thalamic haemorrhage had been clarified a few years before by CMF (Fisher 1959; Fisher 1961). I also began to collect stroke patients with ptosis because the existing explanations for ptosis (third nerve palsy or Horner’s syndrome) did not seem to apply to many stroke patients that CMF and I saw. I presented the results to Dr David Cogan and the Boston Neuro-ophthalmology club. I also presented the material to the Boston Society of Neurology and Psychiatry and these studies led to a publication on ptosis (Caplan 1974).

After the fellowship year I became a junior staff physician at the Beth Israel Hospital in Boston. There I began a Stroke Service modelled after that at the Massachusetts General Hospital. I continued to collect patients with rostral brainstem infarcts and correlated the findings with the vasculature involved. I reported this material in an article in Neurology on the ‘top-of-the basilar’ syndrome’ (Caplan 1980) which was widely read and cited.

During the next two decades, three circumstances began to coincide – angiography, a computer-based registry, and many more referred patients. In the early 1970s, cerebral angiography was the only investigation for patients with cerebrovascular disease, especially in the posterior circulation. I began to collect experience with angiography in patients with vertebrobasilar disease with the collaboration of Dr Arthur Rosenbaum, the neuroradiologist at the Beth Israel Hospital at that time. We published a report of our early experience (Caplan & Rosenbaum 1975). At the same time I began to collect stroke patients I had examined at the Beth Israel Hospital in a formal computerized stroke registry. The computer guru at the Beth Israel Hospital, Drs Howard Bleich and Warner Slack, had stimulated Dr Jay P Mohr, a former CMF fellow then at the Massachusetts General Hospital, and me to collect our cases prospectively and enter them into a computer. In those days the computer was a large PDP-11 as personal computers had not yet been introduced. The computer blinked or shut down regularly and needed to be treated as a fragile infant. JP and I, and our stroke fellows, collected and reported the clinical and angiographic findings in over 700 patients examined in our Harvard Stroke Registry (Mohr et al. 1978). This was the first published computer registry in any disease. After reading my early articles (Caplan 1974; Caplan 1980; Caplan & Rosenbaum 1975; Mohr et al. 1978), doctors surmised that I knew something about vertebrobasilar arterial disease and began to refer many patients to me at the hospitals where I worked in Chicago and Boston.

In the ensuing years, having the great luxury of exposure to lots of posterior circulation patients who I and my colleagues and stroke fellows collected in prospective stroke registries, I did learn something about the condition. But I could not have done this work without very able colleagues, especially JP Mohr, Dan Hier, Mike Pessin, Dana Dewitt, and 52 Stroke fellows from the USA and Canada, Europe, Asia and South America. I continue to avidly collect patients and observations about posterior circulation disease and am even now preparing a report on the more than 400 patients collected in the New England Medical Center Posterior Circulation Registry.

So, here is my advice to trainees:
- choose a mentor to work with and emulate – continue to use this mentor later as an oracle and guide;
- choose one or more areas of interest;
- continue to collect information in those areas – collect it formally in manila or computer folders;
- write and publish your observations early, as soon as you have something worthwhile to say, and often;
- read and learn thoroughly the literature in your area of interest and appreciate the historical development of ideas in that area.

**REFERENCES**


