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EDITORIAL

Beyond the hammer: reflections on neurology residency in Mexico

Más allá del Martillo: reflexiones de la Residencia en Neurología en México

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During medical school, neurology is often perceived as challenging and complex. This preconception has led to the so-called neurophobia. This phenomenon has been studied in Mexico, and it is clear that neurology is not popular among undergraduates due to the lack of integration between basic science and clinical knowledge[1]. Why, then physicians decide to become neurologists? Many factors attract individuals to specialize in neurology. Amongst them are the specialty's intellectual content, challenging diagnostic problems, the type of patients, and the desire to help people.

Recent advancements in neuroimaging, treatments, research investments, and diagnostic tools have resulted in better functional prognoses for patients with neurological conditions, diseases that were once considered untreatable just 20 years ago. Hence, this new era has inspired many young clinicians to pursue a career in this field.

Becoming a neurologist in a developing country

Most Mexican neurology residents are trained in tertiary care hospitals. While neurology residents in developed countries typically undergo a 4-5-year training program exclusively focused on neurology, in Mexico, neurology residents must complete at least 2 years of an internal medicine program before specializing in neurology. Despite this difference, due to the large number of patients treated at tertiary care hospitals our clinical expertise in neurology is at least equivalent to theirs.

Despite significant technological advances in medicine, neurology remains one of the few specialties where clinical data is obtained from a thorough medical history and examination. Furthermore, given the limited resources available, residents often rely almost entirely on clinical data for their assessments.

As neurology residents in Mexico, we are fortunate to encounter many neurological conditions due to patient centralization in a few tertiary care centers; even diseases with a low prevalence in our country. While stroke, epilepsy, headaches, and central nervous system infections remain highly prevalent, the rising life expectancy of our population has led to an increase in chronic neurodegenerative diseases. Although the recent COVID-19 pandemic has caused a decrease in life expectancy, the trend toward an aging population is expected to continue, making it more critical than ever for neurologists to be well-versed in diagnosing and managing chronic neurodegenerative diseases[2]. A modern neurology resident should be as well versed

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in neurodegenerative diseases as he is in managing stroke, headaches, or neuroinfectious diseases.

It is not an understatement that we are behind on diagnostic and therapeutic tools. As governmental resources are optimized for other, more prevalent diseases (diabetes or hypertension), the cost of diagnosis and treatment commonly relies on the patients. This cost includes not exclusively transportation (patients from rural areas often must travel long distances to tertiary care hospitals), outpatient consultation, investigations which include magnetic resonance imaging, nerve conduction studies, or specialized blood workup (which most is sent for analysis to the United States of America) and medications.

There are also indirect costs of loss of earnings due to unemployment during illness and convalescence. The wall between patients and the technology available is primarily economic. Then, it is no surprise that conditions believed to be genetic or immunological end up without a definite diagnosis. Exposure to monoclonal antibody treatments and cell-based assays at an earlier stage of a resident's career would be possible if this were to change, both of which the resident will eventually learn once he starts his private practice.

Burnout during neurology residency

Neurology is a medical discipline with a high academic demand; the acquisition of the clinical skills and knowledge to practice it need to be learned in a relatively short training period. The complex patients, the long working hours, the work overload (both on call and in the daily activities), and the multiple bureaucratic and administrative functions unrelated to medical practice often result in a high-stress burden for the trainee that ends up in mental disorders such as anxiety and depression, al leading to the so-called burn out syndrome (BS).

Although it can occur in any person, physicians are a particularly vulnerable group, with a significant difference in prevalence among physicians compared to the general population (37.9% vs. 27.8%)[3]. Among neurologists, up to 60.1% suffer from BS, the second highest prevalence of BS (71.93%) when compared to residents from other specialties; this notably exceeded the already high average general prevalence of 51%[4].

BS is a condition associated with medical errors, lower patient satisfaction, increased costs of care, reduced physician productivity, and increased risk of substance abuse among physicians; depression, suicidal ideation, and vehicular accidents also increase among physicians suffering from BS. The reason why neurology residents have such high levels of burnout and low job satisfaction remains unknown. Some argue that young people attracted to this specialty are generally meticulous and obsessive. Given the time constraints, in a busy practice that requires extensive evaluations, they need help to do the work and meet their standards[5]. While this situation may significantly contribute to dissatisfaction and emotional overload, it does not fully explain it. Therefore, it is imperative to deeply study the causes leading neurology residents to suffer from burnout syndrome, to implement strategies to prevent and counteract this increasing situation.

Opportunities for improvement in neurological training and care

From regulating weekly working hours and economic retributions to increasing residents' exposure to novel treatments and evidence-based clinical practice, there is still much to be improved in the formative process of Mexican neurology residents.

There is a small window of opportunity for residents to impact law regulations to improve their residence quality. Those options would not be discussed here. However, thanks to technology, most information is now available through diverse medical platforms quickly and reliably. Universities should aim to give these tools to their residents, ensuring them the most advanced and latest evidence-based information.

The COVID-19 pandemic was a massive blow to bedside teaching for residents. Out of this disadvantage, however, with the aid of technology, different scenarios arose that boosted neurological education, such as telemedicine for consults and networking opportunities to have lectures from international speakers. This can be seen in all the big neurology congresses worldwide that nowadays offer virtual options. In conclusion, the paths to a perfect neurology residency may be lengthy and unattainable, but in the end it simply comes down to putting our brains into it.

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