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EDITORIAL

The neurologist as interpreter: reading what is hidden in contemporary clinical neuroscience

El neurólogo como intérprete: leer lo que está oculto en la neurociencia clínica contemporánea

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Clinical neurology has always been an interpretive discipline. Before a diagnosis is written, the neurologist must read signs, reconstruct timelines, weigh probabilities, and place symptoms within anatomical, biological, psychological, and social contexts. In this sense, the neurologist is not merely a user of diagnostic tests or a classifier of syndromes, but an interpreter of incomplete evidence. The five manuscripts included in this issue of *Revista Mexicana de Neurociencia* are diverse, yet converging around this shared task: making clinical meaning from what is subtle, atypical, prodromal, socially embedded, or hidden in data.

This interpretive task is especially clear in the review by Mendoza-Larios et al. on traumatic axonal injury. In traumatic brain injury, the most clinically important damage is not always the most visible. A patient may have profound disruption of white matter tracts, altered consciousness, and long-term neurological consequences without a single lesion that fully explains the clinical picture. The review reminds us that traumatic axonal injury requires integration of mechanism, neurological examination, imaging, biomarkers, and, when available, neuropathology. It also highlights an important imbalance in the recent literature: while imaging and biomarkers have received considerable attention, neuropathological studies remain comparatively scarce. For the clinician, the message is practical and urgent. The absence of an obvious mass lesion is not the absence of brain injury, and diagnostic confidence should not depend exclusively on what conventional imaging makes immediately apparent.

If traumatic axonal injury asks us to interpret injury beyond visibility, the systematic review by Rodríguez-Arzate et al. asks us to interpret disease beyond the classical phenotype. Stiff-person syndrome has historically been described through a recognizable core of progressive stiffness and painful spasms. Yet, this review reveals a much broader clinical spectrum, including sensory, cerebellar, autonomic, hemiparetic, and heterogeneous presentations. These atypical forms do not merely complicate classification; they affect diagnostic delay, therapeutic decisions, and the possibility of recognizing immune-mediated disease while intervention may still modify the course of disability. In this context, the neurologist must avoid the comfort of rigid categories. The interpretive act consists of recognizing family resemblance among phenotypes that may initially appear unrelated, and of using antibody profiles, comorbid autoimmunity, paraneoplastic clues, and response to treatment as pieces of a wider immunological narrative.

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The review and simplified diagnostic algorithm for neurogenic orthostatic hypotension in synucleinopathies, presented by Rebolledo-Garcia et al., extends the same principle into the temporal dimension of diagnosis. Some signs matter not only due to what they are, but due to what they may announce. Orthostatic hypotension, when neurogenic, may be more than a cardiovascular symptom: it may be an early marker of Parkinson's disease, multiple system atrophy, dementia with Lewy bodies, or pure autonomic failure before overt motor or cognitive manifestations dominate the clinical encounter. Particularly valuable is the authors' effort to adapt evaluation to Latin American practice by emphasizing tools that are widely available: orthostatic blood pressure measurement, olfactory screening, cognitive assessment, movement examination, and bladder evaluation. This is precision neurology without technological elitism. It recognizes that early diagnosis should not be limited to centers with expensive equipment, and that careful bedside interpretation remains a powerful instrument in resource-limited settings.

The work of Borrani et al. on attention and cognitive flexibility in juvenile delinquents brings the interpretive task into an even broader social field. Neurology and neuropsychology have much to contribute when cognitive performance is evaluated in adolescents exposed to educational interruption, family violence, attention-deficit/hyperactivity symptoms, drug use, and socioeconomic adversity. The study is important precisely because it resists a simplistic reading of behavior. By comparing juvenile delinquents not only with age-paired controls but also with adolescents paired by age and education, the authors show that several cognitive differences are better understood in relation to education and social context than to legal status alone. At the same time, the finding of reduced tonic alertness in the juvenile delinquent group raises questions about basic attentional capacity and its potential impact on school and work performance. The lesson is not deterministic. Rather, it is a call to interpret adolescent behavior without stigma, to recognize cognitive vulnerability where society may see only misconduct, and to design interventions that include educational, clinical, and social dimensions.

Finally, the classification study by Marquez-Romero et al. shows that interpretation now also takes place in digital environments. Electronic health records contain fragments of clinical history that may be difficult to retrieve by ordinary chart review, particularly when the clinical question concerns a period before an acute event. In adults hospitalized with COVID-19, the distinction between pre-existing neurocognitive disorders and possible post-COVID cognitive sequelae is not merely academic. It affects prognosis, rehabilitation planning, service allocation, and the interpretation of pandemic-related neurological burden. Using supervised machine learning algorithms trained on selected terms from electronic records, the authors explore a pragmatic way to reconstruct pre-pandemic cognitive status. The promise of this approach should be read with appropriate caution: algorithms do not replace clinical judgment, and their performance depends on the quality, completeness, and biases of the records from which they learn. Still, the study points toward a future in which neurologists will increasingly interpret not only symptoms and images, but also data traces distributed across health systems.

Read together, these manuscripts suggest that contemporary neurology is expanding in several directions at once. It moves deeper into microstructural injury, wider into phenotypic spectra, earlier into prodromal disease, outward into social determinants of cognition, and forward into computational analysis. This expansion can appear eclectic, but it is unified by a shared clinical ethic: the responsibility to recognize meaningful neurological information before it is lost, mislabeled, or discovered too late. The neurologist's interpretive work is therefore both scientific and moral. It requires technical knowledge, but also humility before atypical presentations; attention to mechanisms, but also attention to context; openness to new tools, but also awareness of their limitations.

For Mexico and Latin America, this vision is not an abstract aspiration. Clinical realities in our region are heterogeneous, resources are unevenly distributed, records are often fragmented, and patients frequently arrive with complex combinations of biological disease and social adversity. Under these conditions, the neurologist's ability to interpret remains one of the most powerful diagnostic tools available. The articles in this issue of Revista Mexicana de Neurociencias remind us that the future of neurological care will certainly include biomarkers, algorithms, imaging advances, and refined classifications. However, these instruments acquire value only when integrated into careful clinical judgment. The neurologist's task is not only to identify what is already evident, but to read what is hidden: the lesion beneath the normal image, the autoimmune syndrome behind the atypical phenotype, the prodromal clue within an autonomic complaint, the cognitive vulnerability beneath a social label, and the clinical history concealed within data. To interpret well is to see earlier, classify better, and act before consequences become irreversible.