

To the Editors:

I read with interest the article by Machado and colleagues in the January 2012 issue of *MEDICC Review (A Cuban Perspective on Management of Persistent Vegetative State)*. There are two main ways of considering vegetative state: as a pathology of consciousness per se or as a multifaceted ensemble of different neurological syndromes. As reported in their review, the identification of both anatomical and functional impairment may be—and in our opinion *must* be—the first step in assessment of these challenging patients. In our work at San Raffaele Cassino Hospital we see vegetative state as a *matryoshka* [a Russian nesting doll—Eds.] syndrome with a pattern of lesions that is rarely the same from one patient to another. All aspects of impairment, or spared functioning, should therefore be examined, from motor potential to higher cognitive functions.

In the literature we are seeing a growing emphasis on connectivity as the keystone in the structural and functional foundations of consciousness. However, this conceptual framework seems to collapse in the case of vegetative or minimally conscious states. In a clinical setting, various means of assessment are generally available to us, including functional MRI with various stimuli; standard MRI to assess extent of brain damage; and neurophysiological assessments using very refined techniques of quantitative analysis.

Nonetheless it is rare to read a paper describing both structural lesions and functional aspects in the same cohort of subjects. Failure to do this leads to serious limitations, since neurophysiological data are thus rarely compared with structural data. Functional MRI findings are generally reported in isolation, without corresponding information concerning whether or not the supporting brain structures are anatomically (as opposed to functionally) compromised. In conclusion, we believe there is a need to reinforce anatomical study as the first step in both clinical practice and science. The work of Machado et al. exemplifies this new and necessary approach—starting from the anatomical picture.

Marco Sarà MD
Post-Coma Intensive Care and Rehabilitation Unit, San Raffaele Cassino Hospital Cassino, Italy

Calixto Machado Responds for the Authors

We appreciate Dr Sarà's comments and agree that the literature has a plethora of articles about disorders of consciousness (DOC) emphasizing isolated results from highly refined techniques of quantitative brain function analysis, and that inability to compare functional data with structural-anatomic information is very limiting.[1]

As Dr Sarà affirms, anatomical lesions in DOC are always a mixture of different patterns and vary from patient to patient.[2] Thus, his *matryoshka* metaphor for lesions found in persistent vegetative state cases is quite apt.

Most authors overemphasize connectivity as the structural and functional mechanism of consciousness generation,[3] but it is only part of the picture. Although it is very important to assess connectivity between thalamus and neocortex in studying DOC, the presence of anatomical—sometimes sizable—lesions in the brainstem, thalamus, or cerebral hemispheres, plays a key role in explaining consciousness impairment. That is, it is important to assess more than connectivity, because grey matter lesions—which usually also involve neighboring white matter disruption—are also fundamental in DOC pathophysiology.[2]

We agree entirely with Dr Sarà that identifying and correlating both anatomical and functional impairments are necessary to recognize, assess and explain DOC in these challenging patients. And yes, the first step is the anatomical picture.

1. Sarà M, Pistoia F. Defining consciousness: lessons from patients and modern techniques. *J Neurotrauma*. 2010 Apr;27(4):771–3.
2. Machado C. Persistent vegetative and minimally conscious states. *Rev Neurosci*. 2009;20(3–4):203–20.
3. Vanhaudenhuyse A, Noirhomme Q, Tshibanda LJ, Bruno MA, Boveroux P, Schnakers C, et al. Default network connectivity reflects the level of consciousness in non-communicative brain-damaged patients. *Brain*. 2010 Jan;133(Pt 1):161–71.

To the Editors:

Regarding the article by Chávez in the January 2012 issue of *MEDICC Review (Organization and Startup of The Gambia's New Community-Based Medical Programme)*.

Recently, I was in the habit of visiting the national hospital, the Royal Victoria in the Gambian capital, to talk with the doctors, nurses and technicians there. On one visit, I entered the outpatient clinic, where four Cuban doctors were working, among them the head of the Cuban medical team in the hospital, Dr Ruby Maynard. I noticed a young white man in a lab coat also attending patients. When I asked Ruby who he was, she explained that he was a medical student from Iowa in the USA, doing a rotation in The Gambia through an exchange program between the Gambian Ministry of Health and several US medical schools. I didn't catch his name, but I'll call him Tom.

I introduced myself to him, and when he asked if I was a doctor too, explained that no, I was the Cuban ambassador. He was taken aback. I didn't think his surprise could be due to meeting a Cuban—as in some cases with people from the United States—since he had already been in contact with Cuban health professionals at the hospital. When he told me it was because I was an ambassador, I answered that, actually, many ambassadors are quite normal people.

That seemed to break the ice, so I asked how his rotation was going. He explained that from his first day at the Royal Victoria, he had taken away a lesson from his Cuban colleagues: the importance of establishing human contact with his patients...even before the ritual medical questions and exams began. He said he could see the results, that patients were more comfortable when their initial anxiety at seeing a doctor was relieved—especially important in a developing country where people don't have as much experience with hospitals—making it easier for them to explain their symptoms and get proper care. Tom also told me this relationship seemed to be a key factor in patients' satisfaction and their willingness to follow doctors' recommendations.

In Cuba, we may have gotten used to this kind of approach, underestimating its value. But it was interesting for me to hear this reminder from Tom. So my thanks to him, and my confidence that the new community-based training program will remain true to this humanist principle.

Carlos Martínez Salsamendi
Former Cuban Ambassador, The Gambia