Focus Session “Changing epidemiology in pediatric neurosurgery”

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Referral medical centers are not reliable points of observation to record epidemiological changes concerning the various diseases, even those that find in some of these centers the best care available. However, the analysis of the admissions, the treatment offered, and the outcomes observed in high specialized centers may still provide useful information on the way care is delivered in a given period of time for some specific pathological conditions. Such an analysis may confirm beliefs and perceptions by the doctors and the population of the changes occurring in the practice of medical specialties or, on the other hand, deny substantial modifications in the way treatment is delivered. The medical literature is not necessarily a dependable source of information. Indeed, too many factors contribute to the perception of changes in medical practice, which might not have actually occurred such as better diagnostic identification, more accurate reporting, changes in the policy of patient's recruitment, governmental regulations, and so on. Head injuries provide the best example of reports indicating either increased or decreased admissions attributed to the same cause such as the introduction of specific guidelines for hospital admission or the major availability of CT scan for every general hospital. For some authors, for example, the wider access to CT in the territory assures great advantages for the population by allowing prompt admission and better screening of those patients who need hospitalization in tertiary care centers; for others, such an organization has the potential disadvantage of inexperienced interpretation of scans

carried out in small peripheral hospital with increasing morbidity and mortality due to missed or too late referral to specialized hospital or trauma centers.

Pediatric neurosurgery is a field that has taken great strides and appears in a continuous evolution. Nevertheless, one might wonder whether the patterns of patient's workload and treatment outcomes have really changed over the last decades considerably. Certainly, the epidemiology of some nosographic entities has changed due to the effectiveness of primary or secondary prevention: see, for example, the decreased incidence of myelomeningocele resulting from folate addition to the diet or the diffusion of prenatal diagnosis. However, the impact of such a decreased incidence on the clinical practice may not necessarily reflect such a pattern as the decreased number of affected subjects may be compensated by a better recognition of late complications in the survivors and more careful care of their complications. More refined prenatal diagnoses have certainly decreased the number of newborns with malformative hydrocephalus as well as better medical care that of post-infective hydrocephalus. However, the resulting minor demand for the clinical management of these types of hydrocephalus is compensated for by the increasing prevalence of acquired cases such as those resulting from increased survivals of severely premature babies.

Similar considerations apply to other main fields of pediatric neurosurgery, namely neuroncology or craniosynostosis.

On such a ground, we have invited some colleagues who have kindly accepted to participate in this Focus Session to evaluate the “changing” epidemiology of some specific diseases as observed in their referral pediatric neurosurgery centers and the impact of the changes in the daily clinical practice by retrospectively comparing the neurosurgical activity carried out in a recent period of time with that delivered in a previous period utilized as a “historical control.”

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