

Noninvasive investigations are essential tools for epilepsy surgery in developing countries: Extrapolating results from Chinese studies

Sir,

We congratulate Kurupath Radhakrishnan for his concise yet adequately detailed presidential oration in the 18th Annual Conference of the Indian Academy of Neurology entitled: "Epilepsy care in Developing Countries".^[1] In spite of being an oration, it does show a wide overview of the current status of epilepsy treatments prevalent in developing countries at present, which is nonetheless, a magnanimous task for compilation. As the author points out, it is true that the surgical treatments of epilepsy in developing countries are far lagging behind the demand. This is due to the lack of resources and sophistications. In this context, the presurgical evaluation is an important task for the success of surgery. We could not agree more with the author in his view that candidate selection for surgery is an important step in success of neurosurgeries in developing countries. But we do disagree that for this selection, more invasive and sophisticated techniques like intracranial electrodes are prerequisites. Here, we would like to take the opportunity to point out from the results of several Chinese

data and our own experiences that in the absence of invasive investigations like intracranial electrode investigations or similar others, a judicious combination of EEG techniques and MRI can more than suffice for patient selection.

Although the present status of China is somewhere in between developing and developed country, but still in this vast country, the health care facilities at many places are akin to that of other developing countries. For example, as pointed out by Xu and Xu^[2] there is still a wide treatment gap in China as many patients with active epilepsy still do not get epilepsy surgery. So we propose that the results of the studies in our country in context of the surgical treatment of epilepsy can be quite helpful in executing related programs in other developing countries; especially because there is abundant published data of epilepsy surgeries from China, it would be an advantage for us to take a closer look at the results. In the context of epilepsy surgeries, some of the study results from our country suggest that EEG monitoring techniques with MRI testings can be

invaluable tools in identifying ideal candidates for epilepsy surgery, especially when invasive techniques are not available. In one study by Xiang *et al.*,^[3] EEG monitoring was superior to MRI recording because even in patients where MRI did not show any abnormality, the repetitive EEG examination could reveal the findings of temporal lobe epilepsy, which has been recently found to be the most common indication of pediatric epilepsy surgery in China.^[4] In yet another important study by Huanming *et al.*,^[5] the positive rate of epileptic discharge as recorded by video EEG was 98.1% (51/52 patients), showing that it was highly comparable to electrocorticogram for detecting the preoperative focus localization in epilepsy surgery patients. When used with MRI, excellent results have been observed in China^[4,5] as well as in other countries.^[6,7]

Through this discussion we do not want to undermine the efficacy of invasive techniques like intracranial recordings as potent presurgical evaluation tools. However, in conditions when cost is a limiting factor, the combination of EEG techniques and MRI can be easily used for candidate selection as well as for prognostic indication in such patients. Thus, a lack of invasive techniques should not become a hindrance for epilepsy surgery in needy patients.

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	Website: www.annalsofian.org
	DOI: 10.4103/0972-2327.85918