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'Truths and roses have thorns about them'

- Henry David Thoreau

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The ROSE study, reported in this edition of the journal, provides new information regarding the use of stereotactic radiosurgery (SRS) for the treatment of refractory mesial temporal lobe epilepsy. SRS holds significant appeal as a non-invasive means of treatment for epilepsy, though there have been no randomised controlled clinical trials to establish this. Success in treating vascular malformations [1] generated hope that epilepsy caused by focal pathologies such as hippocampal sclerosis could be treated effectively also. Animal studies appeared encouraging [2]. Application to cavernous malformations proved disappointing [3], but a role was established in managing epilepsy related to hypothalamic hamartomas [4,5]. Early studies in focal epilepsies did not seem promising [6], and though later work was more encouraging[7], the variability in pathologies, dose, and target volumes complicated interpretation however. Other important features of SRS include that there is significant delay before the benefits are realised, with seizure improvement delayed for months or years after the procedure. Presumably this relates to delayed effects of the radiotherapy on non-neuronal tissues, particularly vascular structures. The randomised, single-blinded controlled international study

reported here was performed over multiple centres but ultimately was significantly limited by lower than anticipated recruitment, markedly reducing the power of analysis permitted. They found that standard anterior temporal lobectomy (ATL) resulted in a higher number of seizure-free outcomes than SRS, though the difference was not clinically significant given the relatively small numbers. Conversely significant verbal memory disturbances were more common then the ATL patients, though again the difference did not reach statistical significance. The number of adverse events is noteworthy – 12 (5 serious) in the SRS group, and 5 (2 serious) in the ATL group. Nearly two-thirds of the SRS group required steroid therapy, and visual field defects were almost as frequent as in the ATL group. McGonigal and colleagues recently published a practice guideline for radiosurgery for epilepsy[8], indicating that level 2 evidence supported SRS as an efficacious treatment for mesial temporal lobe epilepsy, possible with superior neuropsychological outcomes. However a recent systematic review[9] reports a similar level of success as the ROSE study from 170 patients included in 16 eligible studies (58% on average, ranging from 25-95%), and also points out that a total of 20% of subjects required subsequent surgery for complications such as radionecrosis and cyst formation. Overall, whilst it is clear that SRS may represent an alternative to surgical therapy for those subjects who are unwilling or unable to undertake a standard ATL, there are strong indicators that this procedure is inferior to standard approaches and has limited benefits in terms of avoiding adverse events and neuropsychological impairment. As alternatives such as MR focussed ultrasound and laser interstitial thermal therapy evolve and become more widely available, the role of SRS is likely to become less relevant, particularly given the attendant morbidities.

I confirm that I have read the Journal's position on issues involved in ethical publication and affirm that this report is consistent with those guidelines.

I have no conflicts of interest to report.

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