

## 4 Expert Comments

**Transcatheter laser ablation of atrioventricular nodal reentrant tachycardia — do we really need a newer energy source?** *J BORBOLA* European Heart Journal (1997) 18, 357-358

### EXCERPT:

Radiofrequency catheter ablation has not only become indispensable in the armamentarium of everyday clinical practice of cardiac electrophysiology but has also introduced many new concepts into our understanding of cardiac arrhythmias.

Although technical advances and improvements in electrode catheter designs, endocardial mapping techniques and energy delivery systems used for radiofrequency ablation continue to evolve, it is widely recognized that in a certain number of cases radiofrequency ablation can be a prolonged process with increased fluoroscopy time, with multiple delivery of radiofrequency energy, and sometimes two or three sessions may be necessary.

Moreover, certain subsets of cardiac arrhythmias are being identified in which the use of radiofrequency ablation may have a lower initial success rate and/or higher recurrence.

In this issue, Weber *et al.* report their carefully conducted, first clinical experience and long-term results with laser catheter ablation. Previously, they documented the feasibility of transcatheter laser coagulation of right atrial, perinodal endocardial tissues and of the atrioventricular junction in dogs by using a novel electrode laser catheter system. A Nd-YAG laser system with a novel mapping guided laser catheter flushed with saline throughout the procedure was utilized.

The optical characteristics of the laser light allowed an irradiation spot of 2.0-2.5 mm in diameter. Bipolar ECGs were recorded without noise simultaneously during laser energy application. The anatomically guided laser pulses produced larger and better controllable lesions than radiofrequency current. Experimental studies have indicated a strong theoretical potential for the use of transcatheter laser ablation.

The introduction of the new, effective, and safe laser ablation technique into clinical practice for the cure of patients with tachycardia is a major leap forward in cardiac electrophysiology. The study makes an important contribution to our knowledge of laser ablation. Therefore, the authors are to be congratulated for the pioneering results.

With the laser larger volumes of myocardium are destroyed safely. By using not only laser energy but also the novel catheter system. Laser ablation systems should be available in electrophysiological laboratories.

Further clinical studies are warranted to establish the real value of laser catheter ablation in clinical cardiac electrophysiology.