Bradycardia and asystole during generalised interictal EEG discharges

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Cardiac arrhythmias and interictal epileptic discharges

• Focal and generalized seizures may induce a dysfunction of cardiac rhythm with the occurrence of arrhythmias.
• Limited data are reported in the literature on the occurrence of arrhythmias during interictal epileptic discharges.
Cardiac arrhythmias and interictal epileptic discharges

• Brotherstone et al. (2012) described, during IED, an abrupt autonomic alteration with occurrence of bradycardia and asystole simultaneously with the onset of generalized interictal epileptic discharges.

• We report a new case with generalized epilepsy showing bradycardia and asystole during interictal epileptic discharges.
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• Interictal epileptic discharges were defined by the combined video-EEG and EMG recording of the deltoïd muscles.

• Changes in heart rate occurred simultaneously with the onset of interictal epileptic discharges with a return to below baseline values in the post-event period.
Figure 1. Representative sleep EEG recording during stage 2 of NREM sleep showing the appearance of an interictal generalised epileptic discharge associated with bradycardia and asystole.
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• Our results stress the need to monitor the autonomic nervous system (i.e. ECG and breathing) in patients with seizures.
• The presence of arrhythmias during interictal epileptic discharges must be considered in the assessment of focal or generalized drug-resistant epilepsy.
• The role of medication affecting the heart rate should be considered.
• The application of a cardiac pacemaker may prove to be an effective treatment.