Figure 1. Temporal skull contusions and orbital hematomas after syncopes.

VIDEO Syncope during EEG recording

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A 75-year-old man had several syncopes with severe skull contusions (figure 1). These events were not preceded by vegetative symptoms such as nausea, dizziness, or palpitations. Holter-EKG was normal and an EEG was performed for suspected epilepsy, during which complete atrioventricular block without ventricular escape-rhythm occurred (figure 2A). Six seconds later, the EEG showed progressive slowing of background activity and voltage reduction, followed by electrocerebral silence (figure 2B); clinically the patient lost cervical muscle tone and became unconscious. Thirty-three seconds later, sinus-rhythm reoccurred, followed by the return of cerebral activity in reverse manner (figure 2C). The patient regained consciousness instantly and, when addressed by the technician, he was fully responsive (see video clip). A pacemaker was implanted and the patient was free of symptoms.

Clinical presentation of syncope does not often allow one to distinguish between cerebrovascular and epileptic origin. Despite normal 24-hour EKG, simultaneous EKG recording is mandatory when EEG is used in the evaluation of syncope.[1,2]

1. Pitney MR, Beran RG, Jones A. A simultaneous electrocardiogram is important when electroencephalography is used in the evaluation of loss of consciousness. Electroencephal Clin Neurophysiol 1994;90:246–248.
2. Brenner RP. Electroencephalography in syncope. J Clin Neurophysiol 1997;14:197–209.

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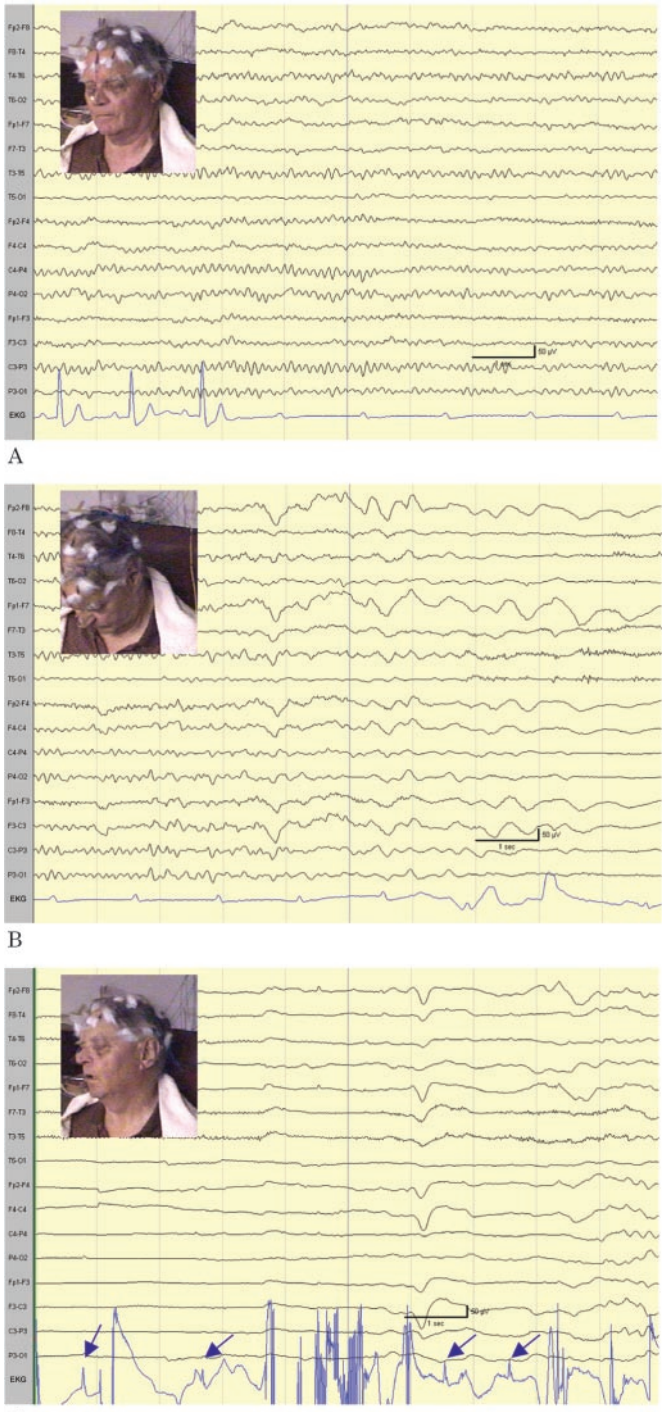

Figure 2. (A) Complete AV-block without ventricular escape rhythm during EEG. (B) EEG showing diffuse slowing and finally electrocerebral silence. (C) Reappearance of ventricular escape rhythm (arrows) and of background activity 7 seconds later. QRS complexes indicated by arrows.

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