Teaching Video NeuroImages: Postanoxic Tonic Eyelid Opening (PATEO)

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A 29-year-old man with end-stage renal disease presented with out-of-hospital PEA (pulseless electrical activity) arrest, requiring multiple rounds of resuscitation. Video-EEG within 24-hours demonstrated a generalized burst-suppression pattern (Figure A). The patient was noted to have repetitive eyelid opening (Video) with duration of 1750.3±710.9ms. 68.5% of these eyelid openings were time-locked to bursts with a latency of 434.7±213.3ms. Tonic eyelid opening has been described in postanoxic coma time-locked with EEG bursts.¹ The presence of EEG bursts preceding the eyelid opening supports a cortical mechanism. However, partial eyelid openings without EEG bursts (Figure A) support a subcortical mechanism. Brain MRI demonstrated diffuse anoxic injury with relative sparing of the brainstem (Figures B and C). The patient was declared brain dead on day five. This clinical sign is associated with poor prognosis but the data is limited.¹ Generalized EEG burst-suppression, however, is reliably associated with poor prognosis post cardiac arrest.²

**Video Legend:** Video-EEG: Eyelid opening with generalized burst-suppression pattern.
Figure: EEG and MRI-brain.

A- 30s page. Photographs show eye closure and opening (red arrows) in relation to EEG bursts. Blue and green arrows indicate eye opening artifact with and without EEG bursts. Sensitivity 15uV/mm
B- Diffusion-weighted MRI with diffuse anoxic injury.
C- Diffusion-weighted MRI with relative sparing of brainstem.
References:

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Multiple Choice Question:

Postanoxic tonic eyelid opening (PATEO) is a rarely described sign in postanoxic coma. What is the typical duration of this eyelid opening?

A. 200-500ms  
B. 10-15 seconds  
C. 1-3 seconds  
D. None of the above

Answer: C
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