



**CASE STUDY: Improving Patient Management and Quality Care Through Intraoperative Monitoring**  
 Courtesy of R. O'Brien MD, FRCP, MBA  
 Reference 291205-08-027 SJ

**HISTORY**

A 60-year old man was admitted for acute sub-arachnoid hemorrhage secondary to a posterior communicating aneurysm. Co-morbidities included diabetes mellitus and coronary artery disease (post cardiac stenting). Aneurysmal coiling was elected.

**MONITORING**

SSEPs and EEG.

**CHANGES**

A sudden drop in left cortical SSEP amplitude with focal EEG slowing occurred some time after inflating the catheter balloon. The radiologist-surgeon was informed and deflated and repositioned the balloon catheter tip, with subsequent improvement in signals. The changes were believed to likely represent balloon migration.

**OUTCOME**

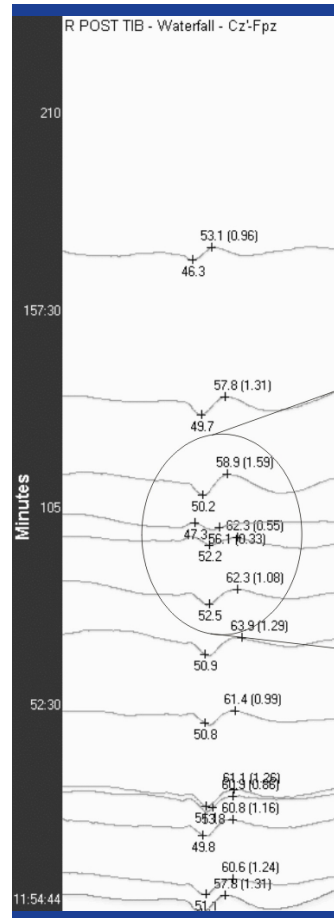
Patient moved all extremities upon waking and had no new neurological deficits.

**LIKELY OUTCOME WITHOUT MONITORING**

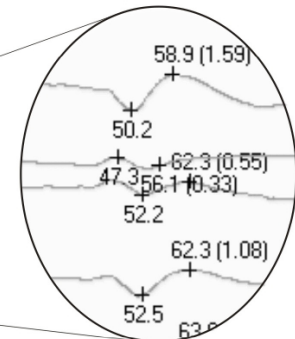
Unrecognized focal ischemia due to balloon tip migration may have resulted in focal stroke, complicating and prolonging recovery from the aneurysm repair.

**REFERENCES:**

Liu, A. Y.; Lopez, J. R.; Do, H. M.; Steinberg, G. K.; Cockcroft, K. & Marks, M. P. (2003), 'Neurophysiological monitoring in the endovascular therapy of aneurysms.', AJNR Am J Neuroradiol 24(8), 1520--1527.



Sudden drop in EP amplitude



**About Impulse Monitoring**

Impulse Monitoring, Inc. (IMI) provides intraoperative neurophysiological monitoring (IONM) services to hospitals and other facilities for spinal, nerve and brain-related surgeries. IONM allows early detection of neurological compromise and identification of functional neural structures during surgery. The scope of IMI's service includes neurophysiologists who provide monitoring in the operating room, supported by dedicated real-time, remote physician monitoring.