11th INTERNATIONAL CONFERENCE ON

CENTRAL NERVOUS SYSTEM

April 27, 2022 | Webinar

Received Date: 22 November, 2021 | Accepted Date: 26 November, 2021 | Published Date: 05 May, 2022

Patient-centered neurophysiological monitoring enhances the quality and safety of minimally invasive spinal surgery

Bernard Allan Cohen
Cohen Neurological Monitoring Associates, USA

Minimally invasive spine surgery is having significant popularity. A distinguishing feature is they obscure the surgeon's view of the anatomy and the underlying neural structures at risk. This is particularly true of lateral procedures. Lateral procedures risks can be significantly minimized by quality patient-centered monitoring procedures.

Lateral procedures described in 1990's reported a greater than 30% neural complication rate. Given the complexity of anatomy in the lumbo sacrial plexis and the "hidden" anatomy transecting the psoas muscle, it is logical that this procedure results in increased complications. Addition of quality patient centered neuro-monitoring to assist in mapping the underlying anatomy and monitoring for avoidance of injury is recognized and essential. We report our retrospective review over Fifteen years with 1593 consecutive cases of extreme lateral interbody fusion using various manufacturer's hardware and seven different surgeons.

Our series included 2354 implants. All patients were monitored by credentialed neurophysiologists. While attractive to use a "surgeon directed" model, this approach places the important function of intraoperative monitoring squarely in the hands of, and the responsibility on, the operating surgeon whose attention is importantly focused on the surgical procedure. While surgeons are capable of quality monitoring, he/she's attention appropriately needs to be placed on the surgical procedure with neuromonitoring carried out by highly skilled neurophysiologists trained extensively with the surgeon for the specific procedures and necessary risk prevention methods to ultimately achieve a quality outcome.

Our series shows the overall incidence of perioperative neurological deficits beyond four weeks at only a 1.68%, significantly lower than other reported series. We believe comprehensive neuromonitoring, in the hands of experienced neurophysiologists, presents a greater likelihood of significantly lower post-operative deficits.

Recent publications

1. Practice guidelines for the supervising professional: intraoperative neurophysiological monitoring. Jeffrey H Gertsch, Joseph J Moreira, George R Lee, John D Hastings, Eva Ritzl, Matthew Allan Eccher, Bernard Allan Cohen and et al. J Clin Monit Comput. 2019 Apr;33(2):175-183. doi: 10.1007/s10877-018-0201-9. Epub 2018 Oct 30

2. Foundations for evidence-based intraoperative neurophysiological monitoring Jeremy Howick, Bernard Allan Cohen, Peter McCulloch, Matthew Thompson, Stanley A Skinner. Clin Neurophysiol. 2016 Jan;127(1):81-90. doi: 10.1016/j.clinph.2015.05.033

bernie@neuromonassoc.org