

# Case Study

## Type of Surgery:

Posterior Lumbar Fusion

## Modalities Monitored:

SEP MEP T- and S-EMG

## Interesting Features/Point of Interest (What is making you submit this case?):

Patient had an anatomical anomaly that was detected with IOM



## Description of Case

During a posterior lumbar fusion operation, the surgeon planned to place pedicle screws at L3, L4 and L5 bilaterally. This was done under direct visualization, since the C-arm was not available during the time of screw placement. Once the screws were all placed, the surgeon stimulated each screw. Upon stimulation of the Left L3 pedicle, a CMAP was recorded from Tibialis Anterior at a threshold of 16mA. While this threshold indicated that there was no breach, the neurophysiologist remarked that it was an unusual muscle to be activated by L3 root contribution.

The surgeon agreed and the C-arm was brought in to inspect the screw placements. At this time, it was discovered that the patient had 2 apparent pedicles on the left side of the L4 vertebra, and that the surgeon had in fact placed what he had believed to be the Left L3 screw

into the superior, “second” pedicle at L4. This screw was removed and a new screw was placed at L3. After final placement, all screws stimulated above an intensity threshold of 10mA, indicating no breach to any pedicle. The surgeon remarked that without IOM, this anatomic anomaly would have gone undiscovered.

