Alzheimer’s disease and anaesthesia case report

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Background: Alzheimer’s disease (AD) is a neurodegenerative disorder and the most common form of dementia. Exposure to drugs has been proposed as a major factor in the genesis and evolution of dementia, including AD. This case report describes an AD patient and her clinical evolution following general anaesthesia and surgery.

Case report: A 76-year old female patient with AD was submitted to hysterectomy for endometrial cancer. The patient was admitted to the operating room awake and was submitted to general anaesthesia with remifentanil and propofol (effector site) until attaining a BIS of 40, then given cisatracurium and intubated, with monitoring of cardioscopy, SpO₂, NIBP and BIS. Spinal anaesthesia was performed with morphine (80µg) for postoperative analgesia. The HR was 86-65 bpm, BP was 180-105 mmHg (systolic) and 92-60 mmHg (diastolic), with no need for vasoactive drugs, but the burst suppression rate was ≠ 0 (15-39) from the beginning of induction, with low BIS values, despite low target of anesthetics. After the procedure, the patient emerged peacefully, was extubated and transferred to the ICU. Bromazepam (6 mg) was administered on the second postoperative day, after which the patient went into hypoactive delirium and then a diagnosis of non-convulsive status epilepticus was established. A typical EEG pattern was observed, with discharges and spikes bilaterally in the temporal-occipital region and triphasic waves characteristic of advanced dementia. The patient remained in coma despite treatment with phenytoin until her death on the 25th postoperative day.

Discussion: Although the real impact on brain function remains unclear, it seems that anesthetics influence AD neuropathology at multiple levels in the involved pathways. Studies have shown that some drugs (volatile anesthetics, benzodiazepines, anticholinergics and antibiotics) may contribute to these changes.