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Unexpected coma in a patient with Parkinson's Disease following general anaesthesia

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Background: Parkinson's disease (PD) is a disorder of the central nervous system and these patients represent a particular anaesthetic challenge (1,2).

Case Report: A 65 years old male with PD under carbidopa/levodopa (25mg/100mg) five times daily was scheduled for an inguinal hernia repair surgery. He had light bradykinesia of the limbs, slow walking, dystonia of the toes and unpredictable off periods. The patient received his usual medication orally in the morning of the surgery. The surgery took 3 hours and when anaesthesia was discontinued the patient quickly started spontaneous ventilation, opened his eyes but failed to demonstrate any facial movements or any response to direct commands and presented a severe hypotonia of the limbs. He had no response to pain or any verbal or motor response. Possible diagnoses were a delayed emergence of anaesthesia, a stroke leading to a locked-in syndrome or an off-syndrome. CT scan was negative for acute cerebrovascular events and 300 mg of levodopa was given through a nasogastric tube. Over the next minutes, he showed progressive improvement in responsiveness to questions and in muscular tone. Levodopa administration was continued every 3 hours and at the end of the day he was already able to speak by gestures and move with a light bradykinesia.

Discussion: Levodopa is an effective drug to treat motor symptoms of PD and to prevent an acute exacerbation it should be used until the day of surgery (1-3). This patient received his usual medication in the morning of the surgery, but an unforeseen delay lead to a prolonged time without administration of additional doses. The patient emerged from the anaesthesia with a GCS of 3 which was reversed with the administration of Levodopa via nasogastric tube. There are no prior reports of a comatose state with hypotonic muscle tone, expressionless facies and unresponsiveness to verbal command in these patients.

References:

1. Considerations for general anaesthesia in Parkinson's disease; J Clin Neurosci; 2018.
2. Perioperative management of patients with Parkinson's disease; Am J Med; 2014.
3. Parkinson's disease and anaesthesia BJA Educ; 2002.

Learning points: Off-syndrome in patients with PD is expectable if the timing of levodopa dose is not adjusted properly and symptoms usually improve with administration of Parkinson's medication. Minimize drug interruptions and place a nasogastric tube for additional doses may be helpful to prevent exacerbation of PD symptoms.

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A strange cause of intraoperative desaturation

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Background: Platypnea-Orthodeoxia Syndrome (POS) is a rare clinical entity characterized by dyspnea and arterial desaturation from supine to an upright position. The pathophysiology of POS remains unclear. We present a case of POS during the intraoperative period.

Case Report: A 54-year-old man with previous history of hypertension, obesity and alcoholic liver disease was diagnosed of esophageal carcinoma with a pericardial fistula, resulting in pericardial and bilateral pleural effusion. A pericardial window and a palliative esophageal prosthesis placement were performed urgently. The surgery proceeded without any incident but before emergence, when incorporating the patient to the upright position, he experienced sudden desaturation up to 80%, which reverted spontaneously when the patient was placed back to the supine. Technical and obstructive causes of hypoxemia were ruled out by inspection, examination, X-ray and bronchoscopy. However, episodes of desaturation persisted in the upright position every time the maneuver was repeated. Due to the absence of pathological findings and the hemodynamic stability, the patient was extubated without incidents.

Discussion: All causes of hypoxemia improve with an increase in oxygen inspired fraction except low cardiac output and shunt. The most frequent cause of POS is the presence right-to-left shunt (RTLs) through a permeable oval foramen (POF) followed by hepatopulmonary syndrome. POS requires the presence of an anatomical component that allows the passage of deoxygenated blood to the systemic circulation, and a functional component, responsible for RTLs through the anatomical defect. The functional component may be due to intracardiac, extracardiac or miscellaneous etiologies. It has been suggested that upright position would increase the RTLs by favoring the emptying of left cavities, decreasing the compliance of the right ventricle and redistributing the flow from the inferior vena cava through the anatomical defect. The certainty diagnosis is based on the echocardiogram with bubble study and the treatment depends on the underlying cause.

References:

1. The multiple dimensions of Platypnea-Orthodeoxia syndrome: A review. Abhinav Agrawal, MD, Atul Palkar, MD, Arunabh Talwar, MD FCCP. Respiratory Medicine 2017; 129:1-38.

Learning points: In the presence of dyspnea or desaturation in upright position not justified by other causes, POS should be considered. It may be a priority to rule out a POF.

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The different strategies of fluid infusion therapy affect the development of postoperative pulmonary complications regardless of the surgery risk

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Background and Goal of Study: Postoperative pulmonary complications (PPC) occur in 5-70% of cases in surgical patients and are accompanied by significant short-term and long-term mortality. The aim of our study is to reveal relationship between the frequency of PPC, the surgical risk extent in different infusion therapy patterns in patients with acute abdominal pathology.

Materials and Methods: Having agreed with the local Ethics Committee and obtained the informed consents, 200 patients with acute abdominal pathology, prescribed for urgent open surgery, were examined. Patients were randomized into groups regarding to surgical risk (P-POSSUM scale) and volume modes: MR-R (n=50) – medium risk, restrictive volume resuscitation; MR-L (n=50) – medium risk, liberal volume; HR-R (n=50) – high risk, restrictive volume; HR-G (n=50) – high risk, goal-directed volume. All groups were similar in relation to gender, age, weight, physical status (ASA II-III). Changes of the body's water spaces were performed by noninvasive integral impedance method. The fluid accumulation in the extravascular pulmonary space (EPS) was assessed by ultrasound (US). Postoperative pulmonary complications (PPC) were verified by clinical, laboratory and radiological data. Data are presented as mean±SD or % patients with parameters. Mann-Whitney U test was used for statistical analysis, p<0.05 was considered as statistically significant for comparison between groups.

Results and Discussion: PPC were found in 10.5% of all cases generally. Pneumonia with a frequency of 80.9% was the main cause of complications. Postoperatively, the liberal volume regimen was accompanied by an increasing in the interstitial volume by 159% (p=0.02), with moderate fluid accumulation in the EPS (0.86, p=0.04), and it correlated with 16% of PPC (0.79, p=0.002). In the groups with restrictive volume regimen were found the absence of interstitial edema and normal US lung picture. The frequency of PPC was up to 6% (medium surgical risk) and 10% (high surgical risk). Goal-directed volume therapy led to interstitial volume increasing during the first 24hrs, moderate fluid accumulation in the EPS up to 3 days, and had association with 10% of the PPC after surgery.

Conclusion: In patients with acute abdominal pathology, the perioperative volume load should be restrictive regardless of the surgery risk. Goal-directed infusion requires further study in this group of patients.