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HEMILAMINECTOMY FOR T11-T12 MEDULLAR COMPRESSION - PERIANAESTHETIC MANAGEMENT OF A GERIATRIC DOG

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Abstract

This case report presents the perianaesthetic management of a geriatric dog that underwent a hemilaminectomy surgery for T11-T12 medullar compression. A 10-year-old crossbreed male was presented at the Faculty of Veterinary Medicine in Bucharest for neurological investigation of acute onset of right posterior unilateral paresis. The magnetic resonance investigation revealed T11-T12 medullar compression, with surgery indication (hemilaminectomy). The patient was premedicated with Fentanyl 3 mcg/kg and Midazolam 0.2 mg/kg administered intravenously (IV). Induction was made with Propofol 4 mg/kg intravenously. Afterwards, the patient was intubated and maintained with Isoflurane along with the administration of a constant rate infusion (CRI) with Fentanyl (3 mcg/kg/h) and Ketamine (1 mg/kg/h) and an epidural anaesthesia with Lidocaine (2 mg/kg). Postoperatively, the patient received a multimodal analgesia management to help her not to exhibit any pain levels.

Key words*: geriatric dog anaesthesia, hemilaminectomy, perianaesthetic management.*

INTRODUCTION

Perianaesthetic management of a patient for hemilaminectomy surgery is extremely important. Anaesthesia protocols should focus on a good management plan combined with the selection of the appropriate drugs. Management includes stabilization of the patient and a very careful handling. The most important part is represented by a good pain approach so that the patient actually wakes up more comfortable.

MATERIALS AND METHODS

A 10-years-old male crossbreed was presented at the Faculty of Veterinary Medicine in Bucharest for neurological investigation of acute onset of right posterior unilateral paresis. Complete physical examination and blood exams were performed. Following neurological examination, a medullar compression at the level of thoracic vertebras T11-T12 was suspected. Magnetic resonance imaging was performed under general anesthesia and continuous monitoring (Tudor R.G., 2018). Surgical intervention was recommended so, a dorsal hemilaminectomy was performed. Patient premedication was made with Fentanyl 3 mcg/kg and Midazolam 0.2 mg/kg administered intravenously (IV). Anaesthesia was induced with Propofol 4 mg/kg IV. The patient was intubated and maintained with Isoflurane and Oxygen. A constant rate infusion (CRI) of Fentanyl (3 mcg/kg/h) and Ketamine (1 mg/kg/h) was given intravenously along Normal Saline 0.9%, at a total maximum rate of 5 ml/kg/h (Costea R., 2017).

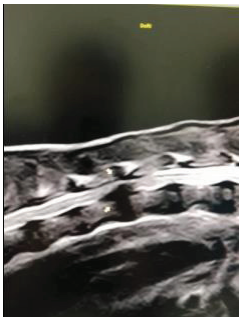

Figure 1. Magnetic resonance image
Medullar compression at the level of thoracic vertebras T11-T12

An epidural anaesthesia block with Lidocaine (2 mg/kg) was added in the protocol, to approach a multimodal analgesia. Monitoring during anesthesia included arterial blood

pressure non-invasively, heart rate, electrocardiography, haemoglobin saturation with oxygen (SpO_2), body temperature (measured with oesophageal temperature probe) and end tidal carbon dioxide. At the end of the surgery, the patient was moved in the intensive care unit for recovery and further monitorization. The patient was evaluated after the procedure using the Glasgow Composite Pain Scale (Tudor R, 2018) and the analgesia protocol adapted to it (Tudor, 2018). A continuous rate infusion of Lidocaine (50 mcg/kg/min) was initiated along with Buprenorphine (20 mcg/kg IV) administration. A urinary catheter was also placed because many patients with loss of motor control are unable to urinate and often suffer from an 'overflow bladder' or dribbling as the bladder reaches capacity and this can be distressing for the patient. This anxiety, frustration can compound the pain level and pain scoring of the patient and we had to take it into consideration. It is known that dogs with paraplegia before surgery had a higher frequency of urinary or fecal incontinence (Aikawa T., 2012).

RESULTS AND DISCUSSIONS

Anaesthesia in the critically ill patient can be challenging due to the multiple complications and the possibility of decompensation at any time.

A comprehensive pre-anaesthetic examination along with an appropriate protocol selection, regular attention and monitoring will lead to an early assessment of complications and a better outcome for the critically ill patient. A multi-modal approach is recommended as this helps minimize the side effects that may occur (Costea R., 2016).

Figure 2. Continuous monitoring during anaesthesia

During the surgical procedure the patient was in a steady plane without any pain manifestations according to Glasgow Composite Pain Scale (Rheid J., 2007). A multimodal analgesic plan which included in premedication and maintenance Fentanyl, Ketamine and epidural anesthesia, combined postoperatively with Lidocaine and Buprenorphine has been proven to be a good approach for preventing acute pain following hemilaminectomy surgery.

CONCLUSIONS

A good perianaesthetic management during hemilaminectomy in dogs is mandatory to achieve a steady anaesthetic and analgesia level during the procedure and a good recovery of the patient. It is important to provide postoperative pain control protocols. Multimodal analgesia protocols for acute pain during the recovery period, will improve the prognosis and the evolution of the patient.

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