

LUMBOSACRAL EPIDURAL ANESTHESIA FOR OVARIOHYSTERECTOMY IN DOGS

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SUMMARY

Lumbosacral Epidural anesthesia with local anesthetics provides complete anesthesia to the caudal half of the body. Lidocaine is the most frequently used local anesthesia solution for Epidural or subarachnoid anesthesia in small ruminants. Local anesthesia is used clinically as adjuncts to light General Anesthesia in both small and large animals. In our study on thirty dogs using lumbosacral epidural anesthesia for ovariohysterectomy, there was a good analgesia and muscle relaxation in all the dogs. Mean values of rectal temperature, heart rate and pulse showed decreasing trend after anesthesia till 60 minutes after that the values returned to normalcy. Significant difference was observed between systolic and diastolic blood pressure throughout the duration. *SP (O₂) showed significant differences before and at 15, 30, 45, 60 and 75 minutes after anesthesia. It was concluded that epidural anesthesia provides cheaper and easier choice for Ovariohysterectomy in dogs. Use of lignocaine as epidural anesthesia was found to be safer option for the field veterinarians engaged in Animal Birth Control Programmes.

Keywords: Dogs, Lignocaine, Ovariohysterectomy, Epidural anesthesia.

INTRODUCTION

Lumbosacral Epidural anesthesia with local anesthetics provides complete anesthesia to the caudal half of the body by blocking the intradural spinal nerve roots and the peripheral layers of the spinal cord (13, 6). This technique is useful for pelvic and hind limb surgical procedures. In large animal practice especially caesarean section and Ovariohysterectomy, much safer anesthesia options of epidural anesthesia have been extensively used (2, 5). In animals with various anomalies of kidney and liver, particularly in geriatrics, where general anesthesia is risky, the epidural anesthesia provides cheaper, safer and quickest alternatives (9). Lidocaine is the most frequently used local anesthesia solution for Epidural or subarachnoid anesthesia in small ruminants, which

causes a blockage of the sensory, sympathetic and motor fibers, producing hypotension (7). Since, local anesthesia is used clinically as adjuncts to light general anesthesia in both small and large animals (14), present study was under taken to determine intraoperative and hemodynamic effects of lignocaine in dogs undergoing ovariohysterectomy.

MATERIAL AND METHODS

Thirty healthy bitches of various breeds admitted to the Teaching Veterinary Clinical Services Complex, SKUAST-K for ovariohysterectomy during June 2012 to July 2012 formed the material of our study. The bitches were subjected to complete blood count especially total proteins, Hb. count to render them fit for the elective surgery and abdominal sonography to identify lack of pregnancy

(6). Overnight fasting was advised before surgery and the animals were premedicated with Xylazine (Xylazine Hydrochloride injection 2% Solution, 23.22 mg per ml, Indian Immunologicals) @ 2mg/kg bwt. i/m. Lumbosacral region of each animal was clipped and disinfected. Lignocaine (Lignocaine Hydrochloride 2%) 5ml was injected into the epidural space, following which the animals were placed in left lateral recumbency. Subsequent laprotomy and ovariohysterectomy were performed by 4inch skin incision in right flank. Rectal temperature, heart rate, pulse, blood pressure and *SP(O₂) were recorded for each animal before anesthesia (0 minutes) and 15, 30, 45, 60 and 75 minutes after anesthesia. Duration of surgery was on an average 45 minutes. Post-operatively the dogs were put on Cefzone (Ceftriaxone 1g GeeVet Remedies) daily for 5 days and ACVet (Meloxicam injections, Gee Vet Remedies) 0.5mg/kg b.wt i/m. subcutaneous suturing lead to complete closure of skin wounds. Data procured was analyzed using standard statistical procedure (12).

RESULT AND DISCUSSION

Effect of anesthesia on different parameters has been summarized in Table. There was a good analgesia and muscle relaxation in all the dogs during the ovariohysterectomy. Similar findings were documented by (3). Changes seen in the rectal temperature, heart rate, pulse, blood pressure and *SP (O₂) were recorded. Mean values of rectal temperature showed a significant decrease ($p < 0.05$) after anesthesia till 45 minutes. In case of pulse rate, mean values decreased non-significantly ($p > 0.05$) after anesthesia till 60 minutes. Mean value of heart rate showed significant decrease from 15 minutes onwards after that the values returned to normalcy. Decrease in heart rate, pulse,

respiration rate and rectal temperature was also observed by (8, 3). In case of systolic and diastolic blood pressure, mean values showed significant decrease upto 60 minutes. However, (3) and (11) observed no significant difference between systolic and diastolic blood pressure. (2, 8) reported wide variations in systolic-diastolic blood pressure and subsequent bradycardia. vasoconstrictors administered locally/ systematically during anaesthesia helps to slow down the absorption of local anaesthesia from epidural space (4, 10). In our study no vasoconstrictor agent was used. *SP (O₂) showed significant differences before and at 15, 30, 45, 60 and 75 minutes after anesthesia ($p < 0.05$). (1) Reported significant decrease in Hb conc. and PCV% after 30 minutes, which persisted up to 120 minutes. It has been reported that epidural anesthesia is established within 10 minutes (1, 14). However in the study it was observed as 4 minutes. Insufficient anesthesia during surgery and post-surgical complications were seldom observed in any dog.

Conclusion

It was concluded that epidural anesthesia provides the cheapest and reliable choice for ovariohysterectomy in dogs. Use of lignocaine as epidural anesthesia was found to be safer option for the field veterinarians engaged in Animal Birth Control Programmes

Table: Shows the various parameters recorded before (0 minutes) and after anaesthesia 15, 30, 45, 60 and 75 minutes

Parameters	Time (minutes)				
	Before anesthesia	After Anesthesia			
	0 Minutes	15 minutes	45 minutes	60 minutes	75 minutes
Rectal temperature	101.9±0.3 ^c	100.3±0.4 ^b	98.6±0.3 ^a	98.1±0.3 ^a	102±0.3 ^c
Pulse/ min.	76.2±0.4 ^a	74.3±0.5 ^b	73.0±0.3 ^b	72.8±0.6 ^b	76.3±0.4 ^a
Heart rate/min	68.2±0.3 ^a	67±0.3 ^a	65.3±0.6 ^b	63±0.6 ^c	70.2±0.4 ^d
Systolic BP(mmHg)	129.8±0.5 ^a	109.±0.5 ^b	105.9±0.5 ^c	99.8±0.4 ^d	120.4±0.4 ^e
Diastolic BP (mmHg)	90.2±0.8 ^a	80±0.6 ^c	80.2±0.2 ^c	70.4±0.2 ^b	80.2±0.3 ^c
SPO ₂ (%)	95.0±0.4 ^a	95.1±0.3 ^a	97.2±0.3 ^b	96.1±0.4 ^c	97±0.3 ^{bc}

Values with same superscript did not vary significantly (p>0.05) within a row.

*SPO₂= Saturation of hemoglobin by oxygen.

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