

COMPARISON OF DIFFERENT LAPAROTOMY TECHNIQUES OF OVARIOHYSTERECTOMY AND POST SURGICAL COMPLICATIONS IN DOGS

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Comparative study of two different laparotomy techniques and post surgical complications for ovariohysterectomy in dogs were studied. The animals were randomly divided into two equal (n = 6) groups of A and B. In group A ovariohysterectomy was performed by ventral midline approach, where as in group B ovariohysterectomy was performed by flank approach. In the present study the duration of surgery, length of surgical incision, cost of surgery, complications peri and postoperatively were assessed. A negligible bleeding was noticed in group B compared group A due to surgical trauma to the muscles. The duration of surgery from point of incision to closure of surgical wound was 11.50 ± 0.42 and 7.16 ± 0.65 minutes in group A and B respectively, length of surgical incision was 2.05 ± 0.22 and 1.10 ± 0.06 cm in Group A and B respectively and cost of surgery was 368.3 ± 4.94 and 305.8 ± 5.97 rupees in group A and B respectively. There was no any serious complications were encountered during and post-operatively in both groups. However, minor wound complications were noticed in group B compare to group A. The surgical wound healed after 10days. However, in uneventful cases surgical wound healed in 7 days.

Introduction

Sterilization of female dogs is topic of interest for Veterinary Surgeons. Ovariohysterectomy in dogs, also known as spaying, is a surgical ablation of the ovaries along with the uterus of a female dog, to make her disable to have any more conception. Traditionally ovariohysterectomy is performed through a small ventral midline incision in dogs. The incision typically begins at, or not more than one cm caudal to the umbilicus (Stone, 2003).

Considering the difficulties encountered in midline approach such as evisceration, herniation, a suitable alternative method of ovariohysterectomy by flank method came in to existence. The main advantages of flank method of ovariohysterectomy include the possibility to observe the surgical wound to reduce the distance and the evisceration of abdominal organs in cases of suture dehiscence (Krzaczynski, 1974; Dorn, 1975 and Levy, 2004). Thus lateral flank approach was proposed as an alternative to the conventional ventral midline ovariohysterectomy.

Materials and Methods

Twelve healthy female dogs presented to the Department of Gynaecology and Obstetrics, Veterinary College teaching Hospital, Hebbal, Bangalore, for ovariohysterectomy were included for this study. Only healthy apparently normal dogs were selected for surgery. Selected female dogs were randomly divided into two equal group's

viz. Group A and Group B of six dogs each. Group A -Six female dogs were subjected for ovariohysterectomy by ventral mid line approach and Group B -Six female dogs were subjected for ovariohysterectomy by flank approach. All the dogs of both groups were anaesthetized as per standards.

Group A dogs were subjected for ovariohysterectomy by ventral mid line approach according to Fossum *et al.*, 2002. And Group B dogs were subjected for ovariohysterectomy by flank approach according to Howe 2006. Duration of surgery, length of surgical Incision, ease of locating uterus and ease of ligating uterus was measured objectively. Finally at the end of the surgery the cost of the surgery was calculated based on consumption of material. Wound was examined for different parameters like the nature of the wound (normal/edematous), and nature of discharge (bloody/serosanguinous/fetid/pussy) at 6, 12, 24, 72 hours and 7 days post operatively. The data was statistically analyzed by using two way ANOVA.

Results

The mean time (min) for successful surgical procedure in Group A and Group B were 11.50 ± 0.42 and 7.16 ± 0.65 respectively. Significantly higher mean time was recorded in Group A compare to Group B. The mean length of surgical incision (cm) for both Group A and Group B were recorded as 2.05 ± 0.22 and 1.10 ± 0.06 , respectively. The length of surgical incision was significantly higher in Group A

compared to Group B. In respect to locating uterus and ligation of uterus there were no difficulties encountered. Neither anaesthetic nor the other surgical complications were recorded during the study period. The mean of surgical cost (rupees) for both Group A and Group B were recorded as 368.3 ± 4.94 and 305.8 ± 5.97 , respectively. The mean surgical cost was significantly higher in Group A compare to Group B.

All the dogs belonging to group A and B were treated as inpatients after surgery for a period of 7 days and standard post surgical procedures were followed. The observations with reference to post operative complications were recorded. Recorded that the wound dehiscence was observed more in Group B compared to Group A. Further, three out of 6 dogs in group B (50%) a serosanguinous discharge was observed from the surgical site between 24-96 hr, bloody discharge was noticed in one dog between 24-72 hr after operation. The surgical wound healed after 10days. However, in some cases the surgical wound healed in 7 days.

Discussion

The present study was carried out to compare of flank and ventral midline laparotomy for ovariohysterectomy in dogs. The time required for the surgical procedure was low in group B compared to group A. This observation is in conformity with Hansen (2005) he also opined that the genital organs could be immediately accessed in flank method as compare to ventral midline approach. The comparatively less extent of surgical incision require for the surgical procedure in group B in the present study is in line with the observations of Hansen (2005) who claimed superiority of this technique over Group A. The site of incision did not significantly influence the ease of ligation of the ovary and cervix in both the groups. In the present study the negligible bleeding compared to anticipated haemorrhage in flank approach. This may be attributed to rite technique for separation of muscle fibers adopted while entering abdomen as described by Wilson and Balasubramanian (1967). On comparison of the cost of surgery between group A and B, a highly significant difference was recorded, which seems to be a good findings in veterinary practice. Hence, the findings in the present investigation clearly demonstrate that the flank method requires minimum surgical material compare to ventral midline approach. The findings of the present

study is contrast to the observations of Eugster (2004) who recorded complications due to infection/inflammation in 5.5% and wound dehiscence of surgical wound in 3% of patients. The wound complications were more in flank approach as compare to ventral midline due to easy access to surgical wound.

Summary

The present study was carried out to compare flank and ventral midline laparotomy for ovariohysterectomy in 12 clinical cases of dogs approximately aged one to six years and weighing 10 to 17 kg were selected. The mean time (min) taken for surgical procedure in both Group A and Group B were 11.50 ± 0.42 and 7.16 ± 0.65 respectively. The mean time taken was significantly higher in Group A compared to group B. This is attributed to the fact that the genital organs could be immediately accessed in flank method as compare to ventral midline approach. Further, the mean surgical cost (in rupees) for Group A and Group B were 368.3 ± 4.94 and 305.8 ± 5.97 respectively. The mean surgical cost was significantly higher in Group A compare to Group B. The mean length of surgical incision (cm) for both Group A and Group B were recorded as 2.05 ± 0.22 and 1.10 ± 0.06 respectively. The mean length of surgical incision was significantly higher in Group A compare to Group B. Mild haemorrhage was recorded in Group B compared to Group A which was attributed to surgical trauma to muscles. No serious complications were noticed during the post operative period in both groups. 50% of dogs in Group B revealed a serosanguinous discharge up to 96 hr after surgery. However, the wound dehiscence was more in Group B compare to Group A, which was attributed to auto mutilation because of ease of access.

Conclusion

On the basis of the observations and evaluation made during the present study, it could be concluded that the flank approach was less time consuming and economical. Further, the length of surgical incision was comparatively less to traditional ventral midline approach. Finally it can be concluded that the flank approach may be a good alternative to the traditional ventral midline approach for ovariohysterectomy in dogs.

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