

DIAGNOSIS OF OVARIAN REMNANT SYNDROME AND LAPAROSCOPIC EXCISION IN BITCHES

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ABSTRACT

Ten spayed bitches with history of pro estrual bleeding, vulval swelling, attractiveness to male were diagnosed as cases of ovarian remnant syndrome based on vaginal cytology and serum progesterone assay. Diagnostic laparoscopy was performed in metestrus and the ovarian remnants were removed by laparoscopic dissection. None of the bitches showed any surgical complications. Only in one bitch vaginal bleeding continued which was diagnosed as polyps in the vagina on vaginoscopy. It was concluded that the diagnosis of ovarian remnant syndrome can be done by serial vaginal cytology and serum progesterone assay. Confirmation and further removal of ovarian remnant can be performed by laparoscopy.

Key word : Ovarian remnant, Bitches, Laparoscopy .

Females that show estrus signs after spaying are included in this syndrome named Ovarian Remnant Syndrome (ORS). ORS is a condition especially embarrassing for the Veterinarian who has done the surgery; a surgery in which the ovarian tissue is incompletely removed during ovariectomy or ovariohysterectomy (Feldman and Nelson, 2004). Usually bitches are presented with clear signs of estrus i.e. attractiveness to males, vulval hemorrhagic secretions, vulval swelling, all of them typical of oestrogen activity. Occasionally this oestrogen activity is not so intense and owner will only complain about vulval swelling or pseudo pregnancy. In contrast to other species, in companion animals, there appears to be no evidence or reports of excessive production of estrogens from the adrenal glands sufficient to induce estrus symptoms.

In the bitch, ovarian tissue remaining after an incomplete ovariohysterectomy becomes cystic and may be the cause of recurrent estrus. A uterine stump pyometra is possible if at the time of ovariohysterectomy the surgeon has left a part of uterine horn or uterine body.

Ten cases with the clinical signs that were typical of estrus like vulvar swelling, attractiveness to male, vulval hemorrhagic discharge in some cases, flanking of tail sometimes followed by pseudo-pregnancy in a canine female previously spayed were utilized for the study. After good anamnesis and clinical suspicion, vaginal cytology was performed by swab technique. On vaginal cytology either pro-estrus or estrus was

confirmed by presence of intermediated, superficial acidophilic cells progressing towards cornification and few red blood cells. Vaginal cytology was repeated after every 2-3 days till changes like reappearance of leukocytes and parabasal cells were observed indicating met-estrus. Blood was collected when these changes were noticed and the serum progesterone assay was performed during met-estrus by CLIA and based on serum progesterone value (2 to 5ng/ml) diagnostic Laparoscopy was performed to confirm ovarian remnant.

Diagnostic laparoscopy showed the presence of ovarian tissue on one side near the kidney with variable degree of cystic condition. The ovarian remnant tissue was surgically removed by laparoscopy. Surgical removal of ovarian remnant was performed as per the technique described for elective Ovariectomy by Gulavane (2001) and Chariar (2005).

The bitches were prepared for surgery with pre-anesthetic medication of Acepromazine, maleate 0.1 mg/kg SC, and atropine sulphate 0.06 mg/Kg SC. Sodium pentothal @ 7 - 10 mg/kg, IV was used for general anaesthesia followed by epidural anaesthesia with 3 ml 2% Lignocaine. The bitches were placed on dorsal recumbency, reverse Trendelenberg position for placement of ports on specially made movable platform and then shifted to lateral recumbent positions to observe the ovarian bursal area and for further removal of the remnant when observed.

Veress needle placement was performed at the junction of middle and caudal 1/3rd distance from

umbilicus to pubis and pneumo-peritoneum was achieved using air insufflator. A 6 mm diameter trocar was inserted at midline just caudal to the umbilicus as the first port through which, 30° oblique 5mm Hopkins rod-lens telescope was introduced, the veress needle was then removed and another trocar of 6 mm was inserted at the point of veress needle placement to introduce the toothed claw forceps in order to hold up the proper ligament at the angle of uterine horn and ovarian bursa. A pre-umbilical port was created by second trocar to house dissecting forcep delivering monopolar electric current from the 400 mA underwater cautery, when required. Careful observation of both bursal area revealed presence of ovarian tissue on one side near kidney with variable degree of cystic condition.

For ablation of left ovarian remnant, the bitch is positioned on right lateral recumbancy and vice versa. First the ovarian remnant was located and grasped by claw forceps. The dissection of ovarian parenchyma from its base was then done with the help of dissecting forceps attached to the cautery to arrest the bleeding from the blood vessels. The separated ovary remnant was grasped firmly by toothed claw forceps and taken out through the port. After the surgery instruments were removed and the incisions were closed using cyanoacrylate adhesive glue.

The post operative care included antibiotics for five days and local dressing using antiseptic ointment. All bitches except one showed cessation of symptoms. One bitch which continued to bleed per vaginum showed presence of vaginal polyps during vaginoscopy.

The vaginal cytology of a spayed female is typical of anestrus, with parabasal cells and some leucocytes. The females exhibiting signs of a ORS showed typical picture of the proestrus and estrus phases like very few red blood cells, leukocytes, and a predominance of intermediated and superficial acidophilic cells. On follow up the progressive changes like increased cornification, absence of leucocytes and change towards metestrus by reappearance of leucocytes with intermediate and parabasal cell was also observed. The cause of this syndrome is the presence of ovarian tissue left in the abdomen following ovario-hysterectomy. This can occur in the dog as a result of improper placement of clamps or ligatures, poor visualization of the surgical field allowing piece of ovary to be left behind while cutting the ovarian pedicle during ovario-hysterectomy, or revascularization of a piece of ovarian cortex dropped into the abdomen during ovario-hysterectomy (Feldman and Nelson, 2004).

The surgical approach is the best option in these cases Romagnoli (2004) and Sontas *et al.*, (2007). Confirmation of ovarian remnant can be done by diagnostic laparoscopy and the midline Laparoscopic portal placement permits us to examine both para-renal areas to evaluate remnant ovarian tissue and proceed forthwith for resection of any such tissue to whichever side it may be found. It is important to inspect both pedicles looking for a revascularization just caudal to both poles of the kidneys. Any suspicious tissue can be excised during diagnostic laparoscopy.

The timing of the exploratory laparotomy is very important and it will be much easier to detect the ovarian tissue, if the animal is under the influence of oestrogen or if the ovulation has occurred. In both these cases, the ovary will be enlarged because of the follicles or corpora lutea. However, due to the increased vascularity, intra-operative bleeding could be a complication which will be minimal in the luteal phase but postoperative false pregnancy may be induced. Laparotomy for ovarian remnant syndrome is not recommended during anestrus, since the remnant tissue might be too small to be detected (Feldman and Nelson 2004, Sontas *et al.* 2007). In present study the removal of ovarian remnant was done during luteal phase and there were no complications of bleeding. However, three bitches exhibited signs of pseudo pregnancy. It can be concluded that the diagnosis of ovarian remnant can be done by serial vaginal cytology and serum progesterone assay and for confirmation and further removal of ovarian remnant, laparoscopy can be performed.

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