

## A RARE CASE OF UTERINE SEROSAL CYST COUPLED WITH MAMMARY TUMOUR IN A GERMAN SHEPHERD BITCH

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### SUMMARY

A 13 years old German shepherd bitch was presented with history of nodular growth at caudal left side mammary gland since last two months albeit other physiological parameters were within normal physiological range. No abnormal vaginal discharge was observed during this period. On ultrasonographic examination no abnormality of reproductive tract was recorded. However, there were nodular growth at left caudal mammary gland which was considered as a tumorous growth. To prevent future reproductive complications, it was decided to go for ovariohysterectomy and excision of tumor like growth around mammary gland with owner's consent. The case was successfully managed and treated.

**Keywords:** Bitch, Follicular cyst, Mammary tumour, Ovariohysterectomy, Uterine cyst

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Serosal inclusion cysts involving uterus are thin walled structures which resemble like grape like clusters carrying clear non-viscous fluid and are generally found on the serosal surface of the uterus (Saxena *et al.*, 2006, Schlafer and Giford, 2008). Serosal cysts are attached to outer mesothelial serosal layer of uterus and it is derived from mesothelial cells (Sathiamoorthy and Raja, 2012; Sevimli *et al.*, 2012). Serosal cysts do not affects the reproductive functions and they are physiologically inactive, benign clinically (Godfrey and Silkstone, 1998). As per the reports of Ortega-Pachew *et al.* (2007), 5% of bitches are affected with serosal inclusion cyst along with unknown clinical significance in comparison of other reproductive pathological condition. In female dogs, soon after whelping the rapid contraction of the myometrium predisposes the animal to serosal inclusion cysts. These cysts most commonly found during exploratory studies involving laparotomy or during ovariohysterectomy (Johnston *et al.*, 2001). Serosal inclusion cysts are single or multiple, occasionally observed at the time of ovariohysterectomy (Schlafer and Giford, 2008). Here in this case report, serosal inclusion cyst was found in German shepherd bitch coexisting with mammary tumour. In case of bitches mammary tumour is commonest tumour found with 50% incidence rate (Burrai *et al.*, 2020).

A 13 years old German shepherd bitch was brought at TVCC of the Banaras Hindu University with the history of normal appetite and other physiological parameters were within normal physiological range. The bitch had previously whelped two times 7 years back. No vaginal discharge was observed during clinical examination. General appearance of the animal was active and alert and

the observed rectal temp. was 101.7° F, Heart rate 80/min, Respiration rate 89/ min, conjunctival mucus membranes pinkish. The vaccination and deworming were up to date. A small nodular, hard tumorous mass was observed at caudal abdominal left teat of diameter 3-4 cm. The case was referred for ovariohysterectomy to reduce further chances of reoccurrence and to prevent further reproductive complications.

The surgical site was prepared aseptically before performing ovariohysterectomy. As pre-medication, the animal was given inj. Atropine sulphate @ 0.04 mg/ kg b.wt. i/m, inj. Xylazine @ 1 mg/kg b.wt. i/m, inj. Butodol @ 0.4 mg/kg b.wt. i/m.; for induction of anesthesia inj. Diazepam @ 0.5 mg/kg b.wt. i/m, inj. Propofol @ 4mg/kg b.wt. i/v and anesthesia were maintained by inj. Propofol @ 4 mg/kg b.wt. i/v. The animal was restrained in dorsal recumbancy. An elliptical incision was taken over the caudal abdominal left teat to excise the tumorous mass and surgical site was sutured subcutaneously. The ventral midline incision was given cranial to the umbilicus. It was followed by a stab incision on linea alba and abdominal and peritoneal muscles were separated to expose the uterus. After exteriorization, right ovary was found with a follicular cyst along with a large thin walled serosal cyst attaching to the mesometrium. In addition to that, smaller grapes like cysts were also observed on serosal layers of both uterine horns. Transfixation and arterio-venous ligation of the ovary was done using absorbable suture material and ovary was removed after incising at the end of the pedicle. The pedicle was grasped and checked for bleeding. The same procedure was repeated on the other horn of the uterus. Uterus and ovaries were removed after ligation and transfixation using cat gut no. 01. Abdominal

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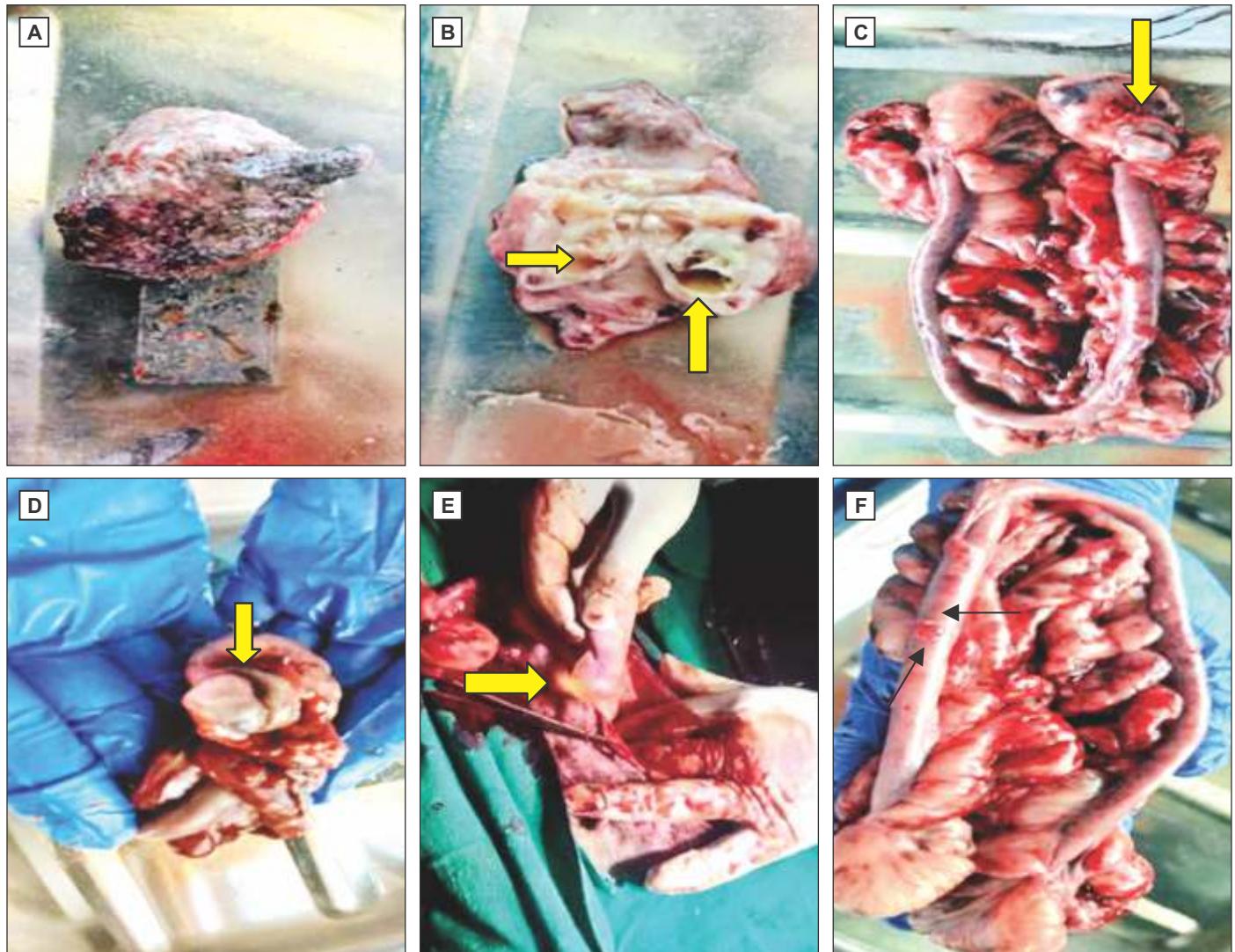


Fig. 1. (A) Excision of mammary gland tumour (along with dissected teat of a bitch). (B) Incised tumour with cysts and cystic fluid, (C) Excised uterus and ovaries, (D) Right ovary with follicular cyst, (E) Serosal inclusion cyst on outer serosal layer of the uterus with fluid-filled structure, (F) small, irregular fluid-filled cysts on both uterine horns.

muscle layers were closed with simple interrupted suture pattern using synthetic absorbable suture material. The subcutaneous tissue and skin were closed with subcuticular suture pattern and interrupted suture, respectively. The bitch was treated post-operatively with inj. Amoxicillin-sulbactam @ 400 mg BID i/m, inj. Enrofloxacin@ 135 mg OD i/m, inj. Meloxicam@ 2 mg /kg i/m od, inj. Ranitidine@ 2 mg/kg bidi/m, inj. B Complex@ 2 ml od, prebiotics and pro biotics tablets once in a day for 5 days. Animal recovered uneventfully after the treatment.

Serosal inclusion cysts are occasionally reported in the veterinary literature, chiefly in canines and felines (Sathiamoorthy *et al.*, 2012, Cortes-Beltran *et al.*, 2020). These types of cysts predominantly occur in senile, pluriparous females (Kennedy and Miller, 1993). Here we also observed serosal inclusion cyst in a 13 years old German shepherd bitch which correlates with Sathiamoorthy *et al.*

(2014). Such pathological conditions don't affect the fertility and hormonal imbalance can be considered as etiological factor for the manifestation of this condition (Schlafer and Miller, 2007). Rapid contractions of uterus trap serosa at the involution during post-partum period in bitches and forms a serosal cyst (McEntee, 1990). Ovarian cysts in bitches having great clinical relevance, follicular cysts are hormonally active fluid filled structures which may be unilateral or bilateral. Follicular cysts co-exists along with dysfunction of reproductive abilities and mammary gland affections (Marino *et al.*, 2010), whereas follicular cysts are active, having capacity to produce estrogen and progesterone (Knauf *et al.*, 2014). High estrogen level acts as causative factor for development of serosal cysts (Vural *et al.*, 2004). In present case, the presence of mammary gland tumor along side follicular cyst might have potentiated the occurrence of serosal cysts.

## CONCLUSION

Serosal inclusion cysts in bitches involving uterus are rare in occurrence. These cysts often encountered during exploratory studies or ovariohysterectomy operations and breed wise most commonly encountered in German shepherd. These cysts may affect the fertility of the animal, if cysts are numerous in numbers. In this case we had encountered a bitch suffering from uterine serosal cysts coupled with mammary tumor.

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