

UNICORNUATE UTERUS IN A GOLDEN RETRIEVER BITCH - A CASE REPORT

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[Received: 97.12.2022; Accepted: 02.05.2023]

{DOI 10.29005/IJCP.2023.15.1.44-46}

A 1.5 year old golden retriever bitch was presented with the complaint of not coming to oestrus. Clinical examination included physical examination, ultrasonography, complete blood and biochemistry panel, and hormonal profile, which only revealed that the animal was in anoestrus. Based on history, clinical examination and the owner not intending to breed the animal, the recommendation to neuter the animal was made. While performing ovariohysterectomy, the left uterine horn was found to be undeveloped, while the right horn and ovaries appeared normal grossly. Histopathology of the uterus and ovaries revealed that the left uterine horn showed no lumen and had a primitive architecture, as seen in case of uterus unicornis. Post-surgery, the animal recovered uneventfully.

Keywords: Uterus unicornis, Canine.

Congenital uterine abnormalities such as unilateral aplasia, partial fusion and unequal development of uterine horns have been reported in canines (Johnston, *et al.*, 2001; Romagnoli and Schlafer, 2006). The abnormalities may range in their severity, from complete aplasia of the uterine tissue with presence of rudimentary tissue and absence of lumen (segmental agenesis and uterus unicornis) to hypoplasia of the uterine horn with normal layering of tissue and presence of lumen connecting to the uterine body (Robin *et al.*, 2010). Unicornuate uterus is defined as the complete agenesis of one uterine horn, and was the most common anomaly (0.05%) detected in a study involving 32,660 ovariohysterectomised dogs (Robin, *et al.*, 2010). These abnormalities are usually detected at the time of routine ovariohysterectomy, and a common finding in most individuals with uterine abnormalities across the species is the presence of both ovaries (Robin, *et al.*, 2010). Bitches with uterine abnormalities may come to heat, conceive and successfully carry puppies to term (Robin *et al.*, 2010; Romagnoli and Schlafer, 2006), albeit with a smaller litter size (England, 2001). However, unlike pseudo-hermaphrodites, which present with external signs such as presence of an os penis and incomplete development of genitalia,

congenital uterine abnormalities are harder to detect as a source of infertility in bitches

Materials and Methods

A 1.5 year old intact Golden Retriever bitch was referred to Department of Animal Reproduction, Gynaecology and Obstetrics, Mumbai Veterinary College, Mumbai, with the complaint of not having come to heat. The patient had a history of recurring urinary tract infections, and had been recommended against spaying by the Private Veterinarian.

On initial examination, the patient was seen to be active and alert. The body temperature, respiratory rate and heart rate and thoracic auscultation were found to be normal. The vulva appeared to be hooded, and epidermal collarettes were observed on the skin of the ventrum and thighs. The complete blood counts revealed marginally lowered but non-significant percentages of eosinophil and monocytes, with other parameters being within the normal range. The serum biochemistry included the liver function test and kidney function test, which showed the creatinine, liver enzymes and electrolyte levels within the normal range. The serum oestrogen (35.07pg/mL) and progesterone (0.73 ng/mL) levels indicated that the animal was in anoestrus phase of the oestrous cycle. On ultrasound, no clear image

of the uterus could be obtained. Based on reproductive history, clinical examination and the owner not intending to use the patient for breeding, the recommendation to remove the reproductive tract was made.

Prior to surgery, a sticky pus-like discharge was observed within the vulva, and examination of the vagina revealed moist vaginal mucosa with white sticky discharge.

The patient was premedicated with Meloxicam (0.2 mg/kg IV), Acepromazine (0.04 mg/kg IV), Butorphanol (0.2 mg/kg IV) and Diazepam (0.5 mg/kg IV). Surgical anaesthesia was induced using Propofol (4 mg/kg IV, given to effect) and maintained on inhalant 3% Isoflurane. The animal was taken

on dorsal recumbency, and the ventral abdomen was aseptically prepared for surgery. A ventral midline incision was made through the linea alba, and the abdomen was explored.

While performing the ovariohysterectomy, it was noticed that the left horn was present only as a serous membrane (Fig1 - 2). The right uterine horn appeared to be thick and slightly oedematous. Both ovaries were smooth and dark red, with no follicles observable grossly. Ovariohysterectomy was performed, and the abdomen was closed using #0 Vicryl suture material. Post operatively, buprenorphine (0.02 mg/kg) and cefovecin were given.

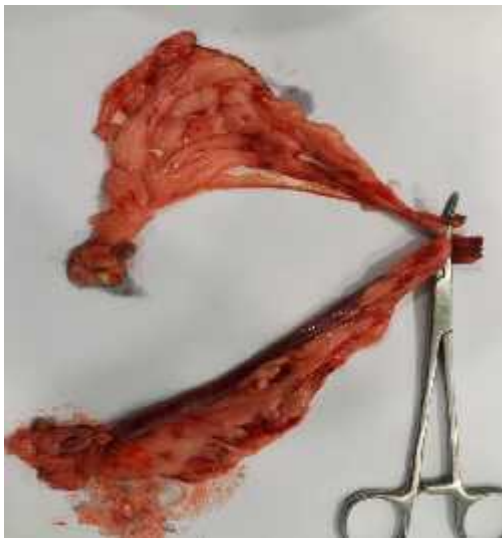


Figure 1: Uterus with a fully formed right horn (below) and a primitive left horn (above). Note that both the ovaries are fully formed.



Figure 2: Left horn of the uterus with normal fully formed left ovary.

The Pathology Department on histopathology, revealed that the right uterine horn had a normal lumen, and showed mild endometrial gland hyperplasia and presence of microscopic multifocal haemorrhage in the endometrium with extravascular erythrocytes. The endothelial cells showed loose reorganisation. Histopathology of the left uterine horn revealed it to be a hypoplastic structure with no lumen or evidence of ductular structures. The left horn showed presence of primitive, immature, anaplastic glandular structures lined by foamy,

vacuolated epithelium. These findings were found to be consistent with what is observed in Uterus Unicornis. Histopathology by the Pathology Department; of the ovaries revealed many Graafian follicle structures with hyperplastic/proliferating Granulosa cells.

Results and Discussion

Definitive diagnosis of uterus unicornis and other congenital uterine abnormalities are harder to detect with non-invasive techniques due to the inconclusive

nature of hormonal assays in such situations, and difficulty in detecting congenital uterine abnormalities using imaging modalities such as ultrasonography or radiology. Congenital urogenital abnormalities involving the uterus also tend to involve the urinary tract, and congenital uterine anomalies have been associated with ipsilateral renal agenesis in dogs and Cats as also reported by Robin *et al.*, 2010 in certain cases. The heritability of these abnormalities is unknown as also mentioned by England, 2001. Bitches with uterus unicornis may be fertile in certain cases, but their fertility is reduced when compared to intact bitches with no congenital uterine abnormalities. More large-scale studies in India are required to determine the degree of association between the two in case of dogs and cats, as well as the rate of incidence of congenital uterine anomalies in these species.

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