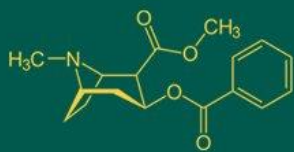


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Haematometra: A rare complication of cystic ovary in a sub-adult royal Bengal tigress (*Panthera tigris tigris*)

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Abstract

A 3 year old Sub-adult Tigress captured from Chandrapur was kept at Gorewada Rescue Centre under Quarantine Period. During the period, vaginal bleeding was observed in this tigress which rapidly increased in intensity. The animal exhibited temperature of 101.5°F, with a normal appetite, urine, and faeces. No external injuries were noted, and vaginal bleeding was only observed during the night hours. The animal was subjected to hemato-biochemical investigation that revealed slightly lowered haemoglobin levels and serum biochemistry revealed all the parameters within normal range. The ultrasound examination using linear probe of 10-5 MHz revealed the presence of cystic ovaries with enlarged uterine horns that were fluid filled and increased endometrial thickening. Vaginal impression smear revealed presence of anucleated cornified epithelial cells indicating estrus stage. The tigress was treated with 2000 IU of HCG and Tranexamic acid @ 10 mg/kg, resulting in recovery and symptom regression by the fifth day. The animal recovered uneventfully.

Keywords: Sub-adult tigress, ovarian cysts, vaginal haemorrhage, vaginal cytology, ultrasonography

Introduction

Ovarian cysts are fluid-filled formations that arise within or on the surface of the ovaries in female felines. They are categorized into follicular cysts, lutein cysts, cysts of underlying epithelial structure, cystic *rete ovarii*, and cystic corpus luteum (Johnston *et al.*, 2001) [4]. Each kind exhibits unique histological features and clinical consequences. Cystic formations represent a notable clinical issue in small animal reproductive, frequently resulting in infertility if left untreated (Knauf *et al.*, 2018) [5]. Ovarian cysts, typically originating from mature or atretic follicles, do not undergo ovulation and persist in the ovary, hence obstructing the re-initiation of folliculogenesis and ultimately causing subfertility in the queen (Gharagozlou *et al.*, 2014) [3]. Follicular cysts are thin-walled ovarian formations that can be singular or numerous and may occur unilaterally or bilaterally. The predominant variety of ovarian cyst is the functional follicular cyst, which produces estrogen (Johnston *et al.*, 2001) [4]. Follicular cysts may induce behavioral disorders such as extended estrus, bone marrow suppression, and uterine hyperplasia due to sustained elevation of estradiol. Follicular cysts may be detected using behavioral indicators, ultrasonography, and serum estradiol assessment (Gelberg *et al.*, 1984; Johnston *et al.*, 2001) [2, 4]. In instances of follicular cysts, medical treatment focuses on stimulating ovulation or luteinization with the administration of either gonadotropin-releasing hormone (GnRH) or human chorionic gonadotropin (hCG) (Ortega-Pacheco *et al.*, 2012) [6]. The administration of gonadotrophins, stimulates estrous behavior and ovarian activity (Youssefi *et al.*, 2015) [8]. This article details the diagnosis and treatment of a sub-adult tigress with follicular ovarian cysts and resultant haematometra that was successfully managed.

Case History and Observation

A 3-year-old Sub-adult tigress from Chandrapur was caught in Man-animal conflict and was brought to Gorewada Rescue Centre for further management. The animal was kept under Quarantine Period and during this period the tigress exhibited vaginal bleeding that progressively intensified over a span of 10 days. The animal was monitored to find out the cause of bleeding and no wounds were discovered over the body.

The animal was then taken into treatment cage. Physical examination indicated normal rectal temperature (101.5°F), with normal appetite, urine, and faeces. The animal exhibiting haematometra (uterine bleeding) was noticed during the nocturnal hours, as illustrated in Fig. 1. The animal was subjected to CBC and serum biochemistry that revealed Hb-11.8 g/dl, RBC-6.58 x 10⁶/cu.mm, TLC-20.69 x 10³/cu.mm, DLC (N-77%, L-17%, M-2%, E-4%, B-0%). Thus all the parameters were within normal range as delineated in Table 1. Ultrasonography was carried out

using a linear probe of 10-5 MHz and showed the presence of bilateral hypo-echoic to anechoic follicular cyst/ovarian cyst of 0.81 cm and 0.76 cm, along with the presence of blood in the uterus, as illustrated in Figures 2 and 3, respectively. The imaging also revealed thicker uterine endometrium, suggestive of endometrial hyperplasia. Vaginal impression smear revealed presence of anucleated cornified epithelial cells indicating that the animal was in estrus as shown in Fig 4.

Table 1: Haemato-biochemistry of the Sub-adult tigress.

Haematology		Serum Biochemistry	
WBC (10 ³ /µl)	20.69	BUN(mg/dL)	16
LYM (10 ³ /µl)	3.44	Creatinine (mg/dL)	1.1
MON (10 ³ /µl)	0.48	ALT(U/L)	59
NEU (10 ³ /µl)	15.97	ALP(U/L)	38
EOS (10 ³ /µl)	0.73	AST(U/L)	25
BAS (10 ³ /µl)	0.07	TBIL (mg/dL)	0.3
LYM (%)	16.6	GLU(mg/dL)	167
MON (%)	2.3	CA(mg/dL)	10.7
NEU (%)	77.2	TP (g/dL)	7.5
EOS (%)	3.5	ALB (g/dL)	4.4
BAS (%)	0.4	GLOB (g/dL)	3.1
RBC (10 ⁶ /µl)	6.58	Na + (mmol/L)	147
HGB g/dl	11.8	K + (mmol/L)	6.1
PCV (%)	40.87	Cl-(mmol/L)	114
PLT (10 ³ /µl)	461	tCO2(mmol/L)	15



Fig 1: Vaginal bleeding in a Sub-dult Tigress soiled within the cage.



Fig 3: Ultrasound picture showing bilateral cyst in ovaries of 0.81 cm and 0.76 cm respectively.



Fig 2: Ultrasonography showing fluid(Blood) in the uterine cavity

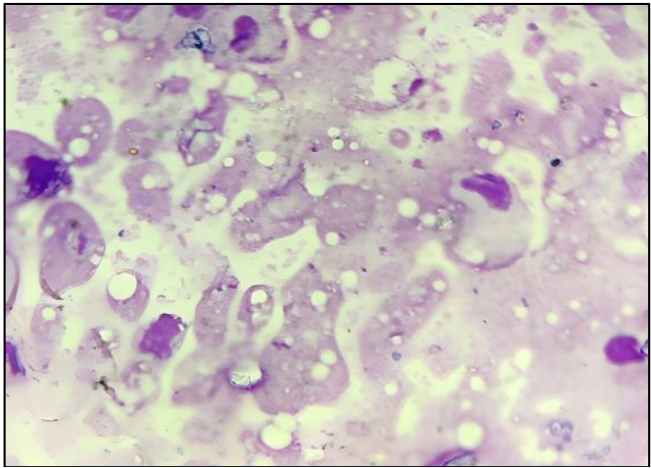


Fig 4: Anucleated cornified epithelial cells in vaginal impression smear (vaginal cytology) indicating animal in oestrus

Treatment and Discussion

The Tigress was treated with 2000 IU of HCG intramuscularly and Tranexamic acid at 10 mg/kg orally, accompanied by supportive therapy with iron and multivitamins. The animal exhibited improvement with symptoms regression by the fifth day.

Ovarian cysts, usually arising from mature or atretic follicles, fail to ovulate and remain in the ovary, hence hindering the resumption of folliculogenesis and later leading to sub-fertility in the Felines (Gharagozlou *et al.*, 2014) [3]. Elevated serum estrogen levels result in persistent activation of estrogen receptors, ultimately causing fluid retention in the uterus and expansion of the uterine horns. A follicular cyst in both ovaries may have contributed to fluid build-up by stimulating estrogen receptors. Cystic endometrial hyperplasia (CEH) arises from an aberrant uterine response to recurrent progestational stimulation during the luteal phase of the estrous cycle potentially exacerbated by estrogen (Rangasamy *et al.*, 2017) [7].

In cases of follicular cysts, medical intervention aims to induce ovulation or luteinization with the administration of gonadotropin-releasing hormone (GnRH) or human chorionic gonadotropin (hCG) (Ortega-Pacheco *et al.*, 2012) [6]. Therapeutic management presents clinical dilemmas about conservative versus surgical interventions. Despite hormonal therapy employing gonadotropin-releasing hormone analogs (GnRH) or human chorionic gonadotropin (hCG) demonstrating success rates of around 63% in specific studies, the potential for recurrence and the prevalent presence of uterine pathology often necessitate surgical intervention (Domrazek *et al.*, 2025) [1]. The current investigation indicated that the animal well responded to HCG treatment, as also reported by Ortega-Pacheco *et al.* (2012) [6], and the animal was observed for one year without any recurrence of symptoms.

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