



ISSN (E): 2277-7695

ISSN (P): 2349-8242

NAAS Rating: 5.23

TPI 2022; SP-11(12): 1135-1137

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www.thepharmajournal.com

Received: 03-10-2022

Accepted: 11-11-2022

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A rare case of cystic endometrial hyperplasia and uterine adenocarcinoma in a female dog: A case report

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Abstract

A seven-year-old female spitz dog was referred with the history of bleeding from vagina since a month and was treated by a local veterinarian. The case was diagnosed as cystic endometrial hyperplasia based on the ultrasound examination and ovariohysterectomy was carried out under general anaesthesia. Histopathological examination of the uterus confirmed the case as cystic endometrial hyperplasia with uterine adenocarcinoma.

Keywords: Dog –cystic endometrial hyperplasia – adenocarcinoma - ovariohysterectomy

Introduction

Cystic endometrial hyperplasia (CEH) is an abnormality of uterine growth and arising from the endometrial glandular epithelium where there is cystic distension of the endometrial glands (Schlafer 2012) [10]. Hormonal influence during the oestrous cycle of the female dog induces changes in the endometrium including glandular proliferation and secretion (Chen *et al.*, 2006) [4]. Progesterone and oestrogen create irritation to the uterine endometrium which causes endometrial trauma (De Bosschere *et al.*, 2002) [6]. Older bitches are likely to get some degree of CEH (Bigliardi *et al.* 2004) [2] and whilst Verstegen *et al.*, (2008) [13] suggested that all age group dogs can get CEH. Uterine adenocarcinoma is very rare in domestic animals except rabbits and cattle (MacLachlan *et al.* 2003) [8]. Canine endometrial carcinomas are rare (Pires *et al.*, 2010) [9] and little is known regarding carcinogenesis (Cave *et al.*, 2002) [3]. Mostly older intact female dogs were affected with adenocarcinoma.

Case History and Clinical Observations

A seven year old female spitz dog was brought to the Veterinary Clinical Complex, Veterinary College and Research Institute, Theni, Tamil Nadu with a history of frequent vaginal bleeding since a month and was treated by a local veterinarian. On clinical examination, the animal was active and all the physiological, haematological and biochemical parameters were within the normal limits. Ultrasonographic examination of the uterus revealed small anechoic area along with thickened uterine wall (Fig.1). Based on the ultrasonography, the case was diagnosed as cystic endometrial hyperplasia (CEH) and ovariohysterectomy was decided upon. Under Atropine @ 0.02 mg/kg BW s/c and Xylazine @ 1.1 mg/Kg BW i/m premedication and ketamine @ 5 mg/kg plus diazepam @ 0.5mg/kg i/v general anaesthesia, midventral incision was made and ovariohysterectomy was carried out following standard operating procedures (Fig.2). Post operatively the animal was given Inj. Intacef @ 25 mg/kg BW for 5 days and Inj. Melonex @ 0.2 mg/kg BW for 2 days and the wound was cleaned and dressed with povidone iodine solution daily. The cutaneous sutures were removed on 8th post-operative day and the animal recovered uneventfully.

Treatment and Discussion

On gross examination, the uterus showed cobblestone appearance with thickened endometrium and distended cystic glands (Fig.3). The tissue sample was preserved in 10% formalin and sent for histopathological examination. Histopathological examination revealed the presence of multiple variable sized cystic areas lined by single to multi layered round to cuboidal cells with round to oval vesicular nuclei contained prominent nucleoli and coarse chromatin. The uterine endometrium had undergone degeneration and the underlying stroma appeared oedematous and markedly haemorrhagic.

Mitotic figures, endometrial hyperplasia and haemorrhages were also observed (Fig.4). Based on the histological observations the case was confirmed as cystic endometrial hyperplasia with uterine adenocarcinoma.

In cystic endometrial hyperplasia, hypertrophy of endometrium with islets of anechoic foci represents dilated cystic glands (Devi *et al.*, 2021) [7]. Gross examination of the uterus gives a cobblestone appearance by thickened endometrium with distended cystic glands (Sridevi, 2015) [11] as also observed in the present case. Among the uterine tumors, leiomyoma and leiomyosarcoma are the predominant tumours (Cave *et al.*, 2002) [3]. Uterine adenocarcinomas are rare in female dogs and extremely rare in spayed female dogs (Baldwin *et al.* 1999) [1]. Cave *et al.*, 2002 [3] reported that the clinical signs associated with uterine adenocarcinoma depend on the tumour size, presence of metastatic disease, and concurrent illness including mucometra or pyometra. Dogs with uterine adenocarcinoma may show anorexia, vomiting, tenesmus, stranguria, dullness, respiratory difficulty and bloody vaginal discharge (Cho *et al.*, 2011) [5]. Recurrence of tumour is common in uterine adenocarcinoma even after surgical removal (Ul Soo Choi, 2013) [12]. But in the present case the recurrence was not observed even after one year of ovariectomy due to timely intervention.



Fig 1: ultrasonography images of anechoic cystic area with endometrial hyperplasia of uterus



Fig 2: surgical removal of ovary and uterus



Fig 3: gross lesion of cystic endometrial hyperplasia in the uterine lumen

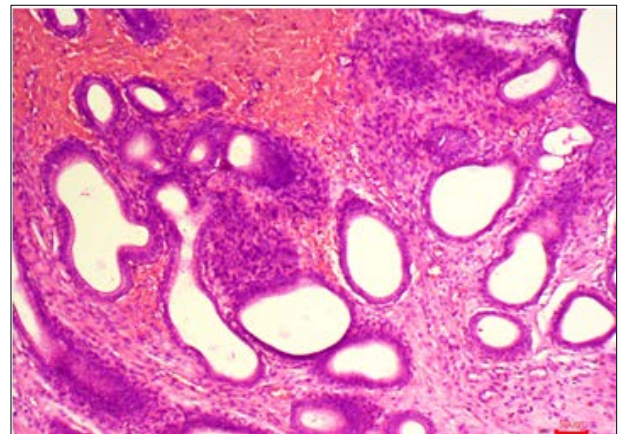


Fig 4: Histopathology lesion of cystic endometrial hyperplasia with uterine adenocarcinoma: presence of multiple variable sized cystic areas lined by single to multi layered round to cuboidal cells with round to oval vesicular nuclei contained prominent nucleoli and coarse chromatin with mitotic figures

Acknowledgement

The authors thank The Dean, Veterinary College and Research Institute Theni, Tamil Nadu for the facilities provided.

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