

## CASE REPORT

# Ovarian Papillary Cystadenoma with Pyometra Cystic Endometrial Hyperplasia Complex in a Bitch

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Canine pyometra is a diestral disorder and a more common condition in older bitches (>7 years) that is often life-threatening. Cystic endometrial hyperplasia (CEH) is a subclinical condition characterized by the proliferation of endometrial glands resulting in the formation of fluid-filled cysts with luminal uterine contents (Schlafer and Gifford, 2008), and this allows bacterial proliferation in the uterus at diestrus under the influence of progesterone which results in the formation of pyometra (Verstegen *et al.*, 2008). The concurrent occurrence of Pyometra-CEH complex with an ovarian tumor is rare and often taken as a severe threat to act immediately. In the present case, the concurrent occurrence of ovarian papillary cystadenoma with pyometra-CEH in a bitch is reported and discussed.

## CASE HISTORY AND CLINICAL OBSERVATIONS

An 11-year-old intact Spitz bitch was brought to Small Animal Obstetrics and Gynaecology ward, Department of Clinics, Veterinary College and Research Institute, Namakkal with a history of lethargy inappetence, abdominal distension, vomiting, and serosanguineous foul-smelling vaginal discharge for 10 days. History revealed that the animal had not been bred so far, and the owner noticed the proestrual discharge 2 months back. The physiological parameters were within normal range, and abdominal palpation revealed a distended uterus. Vaginal examination revealed serosanguineous foul-smelling discharge with multiple nodules in the vaginal passage, and the cytology of the nodules revealed negative for transmissible venereal tumor (TVT). Radiography showed an unclear uterine border, and ultrasonography revealed multiple sacculations in the uterus with irregular endometrial borders and cysts suggestive of pyometra with cystic endometrial hyperplasia. Hematology revealed leucocytosis, and serum biochemistry indicated normal renal function. The bitch was administered with 5% Dextrose Normal saline and Ringer's Lactate, antibiotic (Ceftriaxone @ 20 mg/kg b.wt. and Metronidazole @ 20 mg/kg b.wt.) therapy was followed for five days. Since the bitch was diagnosed with cystic endometrial hyperplasia with pyometra, surgical removal (ovario-hysterectomy) was decided.

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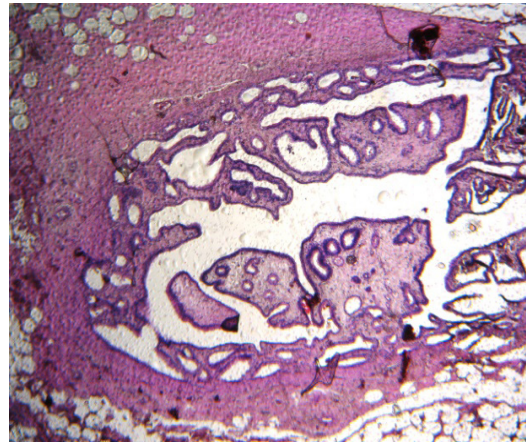
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## TREATMENT AND DISCUSSION

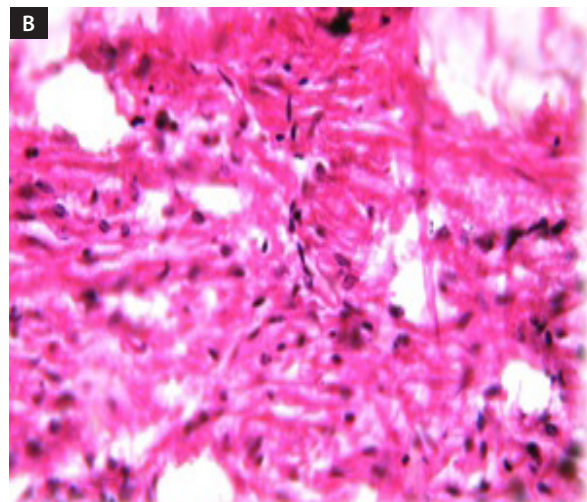
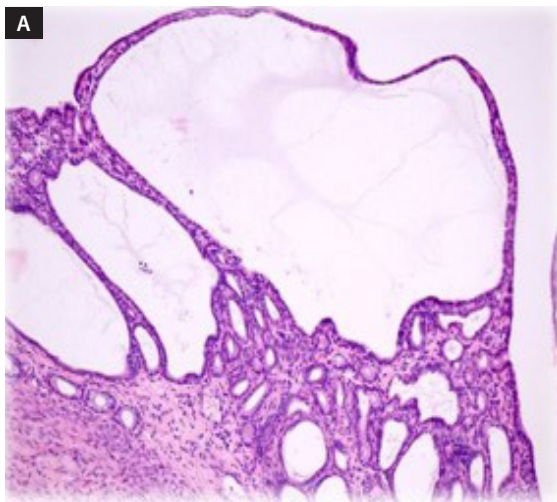
The bitch was premedicated with atropine @ 0.04 mg/kg b.wt. by s/c route and sedated using xylazine @ 1 mg/kg b.wt. by i/m route. General anesthesia was induced with diazepam @ 0.5 mg/kg b.wt. and propofol @ 6 mg/kg b.wt. i/v and maintained with propofol @ 2 mg/kg b.wt. i/v. By mid ventral approach, ovariohysterectomy was performed with standard surgical procedure. A thorough examination of the reproductive organs revealed an enlarged left ovary with multiple cysts on its surface (Fig. 1). The pus-filled uterus along with the normal right and enlarged left ovaries was removed. Postoperatively, the bitch was treated with Ringer's Lactate (10 ml/kg), and antibiotics (Ceftriaxone @ 20 mg/kg b.wt. and Metronidazole @ 20 mg/kg b.wt.) i/v for five days. The skin sutures were removed on 10<sup>th</sup> postoperative day. Grossly, the left ovary was enlarged, and the cross-section revealed



**Fig. 1:** Lobulated left ovary (Ovarian tumour)



**Fig. 2:** Histological section of the ovarian tumour showing cystic changes with papillary projections



**Fig. 3(A and B):** (A) Histology of uterine epithelium showing endometrium with fluid filled cyst; (B) Histology of uterine epithelium showing mononuclear cells infiltration in submucosa

an irregular surface with multiple cysts. The histopathology revealed cystic changes with papillary projections, and the papillary epithelial layer was lined by bland cuboidal type of cells (Fig. 2). Based on the histopathological examination, the condition was diagnosed as papillary cystadenoma of the ovary. The endometrial surface was irregular with folds and thickened with polyps. The histopathology of the uterine horns revealed a fluid-filled cystic endometrial layer with mononuclear cells infiltration in endometrial submucosa suggestive of cystic endometrial hyperplasia (Fig. 3a and Fig. 3b). Based on the clinical and pathological examinations, the case was confirmed as ovarian papillary cystadenoma with pyometra-CEH complex.

Even though the ovarian tumor was benign in the present case, its increased hormonal influence might have resulted in a continuous proliferation of glandular epithelium of endometrium, thus resulting in cystic endometrial hyperplasia and subsequently the pyometra as suggested by Patnaik and Greenlee (1987). A similar suggestion was given by Solongo-Gallego and Masserdotti (2016), who

reported that the pyometra could be established due to secondary hormonal dysfunction produced by functional ovarian tumors. The treatment options for ovarian tumors and the CEH-pyometra complex were limited, and ovario-hysterectomy was the only option in the present case owing to the presence of CEH. The ovarian tumor was identified only during a surgical procedure. Hagman (2012) suggested ovario-hysterectomy as a rapid therapeutic intervention after the diagnosis of pyometra to prevent a fatal outcome.

The present study concluded that the papillary cystadenoma of a single ovary in bitch could result in cystic endometrial hyperplasia and subsequent pyometra and ovario-hysterectomy was the most effective treatment option.

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