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Severe Focal Cystic Endometrial Hyperplasia in a Bitch

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Abstract : A 9-years-old female Collie dog was presented with history of abdominal enlargement, anorexia and constipation. On radiographic and ultrasonographic examinations, intra-abdominal mass was identified. On cytologic findings of the mass, no cancer cell was observed. Exploratory laparotomy was performed to diagnose and remove the mass. A large, single, spheroid mass weighing 9.5 kg (40 × 25 × 18 cm) was located in the middle section of the right uterine horn. Based on the results of histopathological examination, the mass was diagnosed as a cystic endometrial hyperplasia (CEH). This is rare case of severe focal CEH without pyometra in a bitch.

Key words **:** cystic endometrial hyperplasia, focal, dog.

Introduction

Cystic endometrial hyperplasia (CEH) is a non-neoplastic disturbance of the endometrial gland. It is a common disorder of the canine uterus and may result in infertility (1,7). In many cases of CEH, secondary bacterial infections can occur, which cause pyometra. In the dog and cat, non-diffuse forms of endometrial hyperplasia are more common than diffuse, the severely affected areas often segmental, but structurally they are similar (6). In the bitch, a focal, sterile and cystic endometrial hyperplasia has only been reported in late oestrus (3).

This report describes the clinical signs, diagnostic examinations, gross pathology, histopathology and successful surgical treatment of a focal, sterile and cystic endometrial hyperplasia in a bitch.

Case

A 9-year-old, intact female, Collie was presented due to rapid abdominal enlargement. The owner reported that the bitch had a regular 6-monthly estrus cycle and had an abortion 2 years ago. Constipation had been occurred for 2 days at the time of presentation. She had never received any hormone therapy.

Physical examination revealed severe depression, gait disturbance and dyspnea. Gross examination of the abdomen revealed severe enlargement with tension. The vulva was swollen. Complete blood count (CBC) and the serum chemistry profiles were within reference ranges.

On abdominal radiographs, there was a soft tissue mass with defined margins extending overall the abdomen cavity, and severe abdominal distension due to the mass was evident. There was cranial displacement of the liver and lateral displacement of intestines. It was difficult to image and evaluate the other abdominal organs because of the mass (Fig 1A). An overall large mass was evident in the abdominal cavity during the abdominal ultrasonographic examination. The mass consisted of many cysts and was filled with hypoechoic content (Fig 1B). On computed tomography (CT) examination, the mass was isodense, and there was no contrast enhancement and no evidence of organ metastasis. Cytologic findings of the mass did not reveal cancer cells. Exploratory laparotomy was planned.

On exploratory laparotomy, a single, large and spheroid mass was located at the middle section of the right uterine horn and was responsible for the abdominal enlargement. This was removed by ovariohysterectomy and the patient made a complete recovery.

The mass (Fig 2A) weighted 9.5 kg. On gross examination, the spheroid mass was 40 × 25 × 18 cm in size, grey-pink in color with engorged uterine vessels. The mass was filled with multiple cysts (Fig 2B). Dark-red ovarian cysts are observed in both of ovaries (Fig 2A). Microscopically, the endometrium was moderately thickened by numerous cystic and hyperplastic haphazardly arranged glands. The cystic glands were lined with crowded and variably multilayered epithelium (Fig 3). Based on the results of histopathological examination, the mass was diagnosed as cystic endometrial hyperplasia.

Discussion

CEH is clinically the most important pathologic condition

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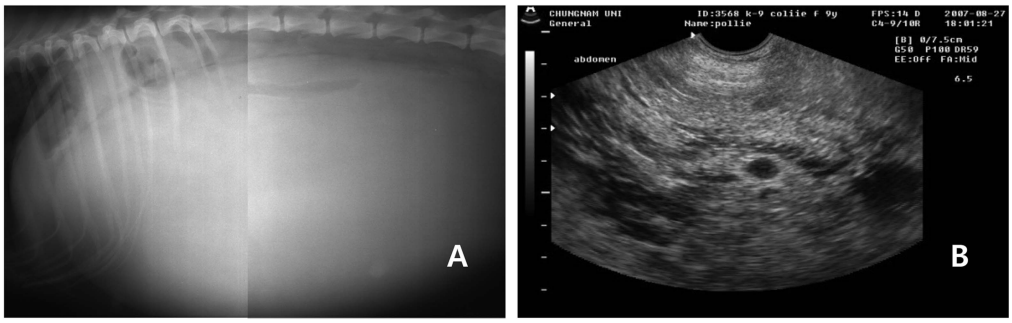

Fig 1. Cranial displacement of the liver and lateral displacement of intestines is observed in abdominal radiograph (A, right lateral view). Abdominal ultrasonography of the mass revealed many cysts, irregular surface and hypoechoic content (B).

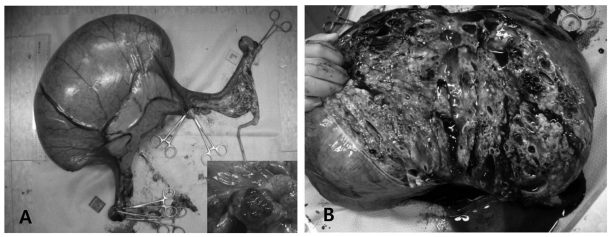

Fig 2. Gross pathologic finding. The mass is $40 \times 25 \times 18$ cm in size, grey-pink in color with engorged uterine vessels (A) and dark-red ovarian cysts are observed in both of ovaries (the right bottom of fig A). The dissected mass is filled with multiple cysts (B).

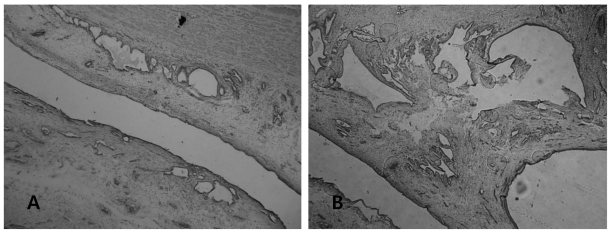

Fig 3. Histopathological finding of the mass (A and B, $\times 40$, H&E). The endometrium is moderately thickened by numerous cystic and hyperplastic haphazardly arranged glands. The cystic glands are lined with crowded and variably multilayered epithelium.

in the uterus of the bitch. Indeed, the disease is recognized as one of the common causes of illness and death in this species (1). During the estrus cycle, the canine uterus undergoes a number of morphologic changes under the influence of progesterone and estrogen (1). CEH is an abnormal response of the bitch's uterus to these ovarian hormones (2). CEH can be induced by administration of progesterone or estrogens in the bitch (4). However, spontaneous CEH in the bitch most often is the result of a heightened sensitivity of the endometrium to stimulation by endogenous progesterone (5). CEH may also develop spontaneously during the luteal phase of the estrus cycle of middle-aged and elderly bitches, and bitches that repeatedly have been under the influence of high concentrations of endogenous progesterone (3). The progesterone effect of conversion of the endometrium to its secretion mode depends on estrogenic priming of the endometrial cells to produce intracellular receptors for progesterone, and disorder of the duration and timing of the priming may give rise to endometrial hyperplasia (3). Progesterone exposure has been suggested as the initial step in development of CEH (9). However, in this case, there is no evidence of clinical correlation between progesterone and CEH because of sex steroid hormone measurement was not performed.

Endometrial cysts of the bitch generally arise from endometrial glandular epithelium and myometrium. CEH frequently becomes inflamed and infected, and the condition may progress to development of pyometra, with possible life-threatening systemic illness (5). Most bitches with CEH have no clinical signs, except in CEH with pyometra. Generally, cystic hyperplasia-pyometra complex is associated with more and severe systemic signs of illness due to the bacterial infection and following immune response, while often the only sign of CEH is failure to conceive (8). This case revealed no signs related with pyometra. The characteristics of this case were focal and sterile cyst and the large size of mass (40 cm in diameter and 9.5 kg in weight). In the bitch, only one case of the rapid development and extreme size of CEH has been reported (3).

The diagnosis of CEH in bitches is best made with ultasonography, radiology and analysis of hormone. However, definitive diagnosis of CEH requires histopathological confirmation. The histopathological diagnosis of CEH was defined by hyperplasia of the endometrium in combination with endometrial cysts without any inflammatory changes (4). The CEH is usually unresponsive to medical therapy, and ovariohysterectomy is the accepted treatment (8). In this case, CEH was successfully treated with surgical excision without any complications.

Secondary bacterial infections occur in many cases of CEH causing pyometra. However, in this case, the diagnosis of focal, sterile, cystic endometrial hyperplasia was made from gross pathology and histopathology. The focal nature of the condition, and the rapid development and extreme size of the spheroid mass are unusual finding. Histopathology is necessary to confirm the diagnosis.

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개에서 발생한 국소성 거대 낭상자궁내막증식증 1예

이재연 · 신범준 · 박지영 · 이영원 · 박성준 · 조성환 · 김명철 · 정성목[1]

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요 약 : 9 년령 암컷 콜리견이 복부 팽만, 식욕 부진 및 변비를 주증으로 본원에 내원하였다. X-ray, 초음파 및 CT 검사를 통하여 복강내 연부조직종괴를 확인하였으나 세포학적 검사에서 종양 세포는 관찰 할 수 없었다. 탐색적 개복술을 계획하였다. 크고 둥근 모양의 종괴가 우측 자궁각에 위치하는 것을 확인하고 난소자궁적출술을 실시하였다. 종괴의 크기는 40 × 25 × 18 cm였으며 무게는 9.5 kg 이었다. 조직학적 검사를 통해 낭상자궁내막증식증(CEH)으로 진단 하였다. CEH는 자궁 내용물이 감염되거나 자궁 축농증으로 이어짐에도 불구하고 임상 증상이 없는 경우가 많으므로 정확한 진단이 어렵다. 본 증례는 자궁 축농증을 동반하지 않은 매우 큰 크기의 국소성 낭상자궁내막증식증의 드문 예이다.

주요어 : 낭상자궁내막증식증, 국소성, 개