

Gartner's Duct Cyst in a Maltese Bitch

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말티즈 암캐에 있어 Gartner's Duct 낭종례

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요약 : 2001년 4월 19일에 11살 된 말티즈 암캐의 비정상적 자궁에 대한 검사의뢰가 들어왔다. 육안적 검사에서 얇은 막으로 된 다양한 자궁 낭종이 관찰되었다. 그 수는 5개이며 그중 2개는 자궁체의 장막면에 위치하고 있었으며 7~8 mm 정도의 직경을 가지고 있었다. 나머지 3개는 직경 1~2 mm 정도의 크기이며 자궁각의 장막면에 위치하고 있었고, 절개시 모든 낭종들은 장액성 액체들로 가득 차 있었다. 병리조직학적 검사에서는 모든 낭종들이 자궁의 장막하에 존재하고 있었다. 낭종의 상피세포들과 이들의 위치는 모두 Gartner's duct와 동일한 것들이었고, 따라서 Gartner's duct cyst로 진단하게 되었다.

Key words : uterine, cyst, Gartner's duct, bitch

Introduction

Generally, many cases of cystic endometrial hyperplasia in dogs have been reported¹. However, there have been only a few reports on uterine serosal cysts and Gartner's duct cyst in dogs^{3,7}. During normal embryonic development of uterus, the caudal portion of the Wolffian ducts may persist close to the myometrium of the uterus and the muscular wall of the vagina. This is referred to as Gartner's duct or canal. A longitudinal duct of Gartner's duct may be present in the tunica serosa of the cervix of uterine on one or both sides^{6,7}. However, the presence of Gartner's duct is rare because this duct degenerates during the course of normal embryonic development². Here we report a case of Gartner's duct cyst in a Maltese bitch.

Materials and Methods

The abnormal uterus of an 11-year-old Maltese bitch was submitted from a local animal hospital for histopathological diagnosis on April 19, 2001. This abnormality was accidentally found during ovariectomy.

For histopathological observation, specimens was fixed immediately in 10% neutral buffered formalin, processed routinely and embedded in paraffin. Sections were cut to 4 μm in thickness and stained with hematoxylin and eosin (H&E).

Results

Grossly, five thin walled uterine cysts were identified.

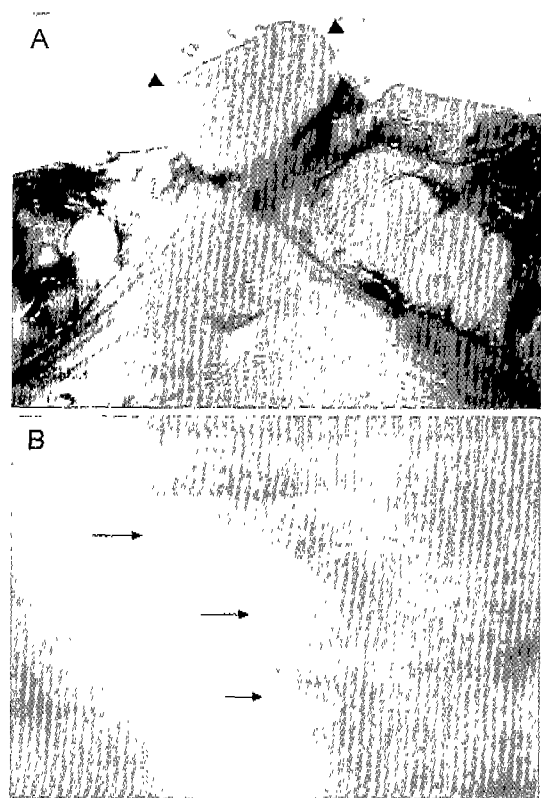


Fig 1. Uterine cysts on gross examination. A, cysts (arrow head) are located on the serosal surface of uterine body. B, cysts (arrow) are located on the serosal surface of uterine horn

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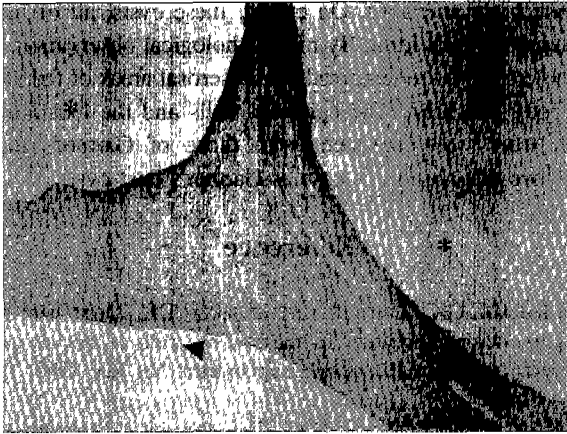


Fig 2. Cysts (*asterisk*) are located below the serosal surface (*arrow head*). H-E stain, $\times 13$.

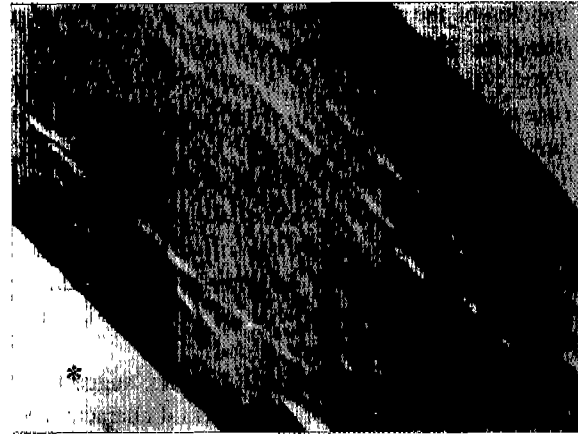


Fig 4. Longitudinal section through uterus with cyst (*asterisk*) below the serosal surface (SS) contains three muscular layers; inner and outer layers (*arrow head*) are longitudinal muscle bundles and middle layer (*arrow*) is circular. H-E stain, $\times 66$.

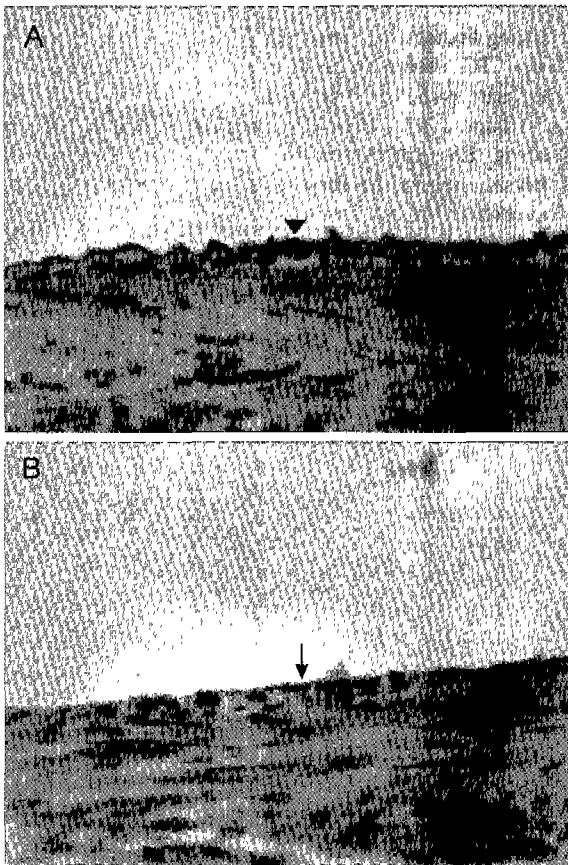


Fig 3. Epithelium of cysts. A. cyst is lined by simple cuboidal or low columnar epithelium (*arrow head*) with elongated ovoid nuclei lying near apex. H-E stain, $\times 132$. B. cyst is lined by squamous-type epithelial cells (*arrow*). H-E stain, $\times 132$.

Two of them were found on the serosal surface of the uterine body and the others were located on the serosal surface of the left uterine horn (Fig 1). No other visible lesion was present in either inner or outer layers of the uterus except a

little endometrial hyperplasia. Histopathologically, on cutting these cysts, all of them contained serosal fluid. Cysts of the uterine body, measuring 5-8 mm in diameter, and other cysts of the uterine horn, measuring 1-2 mm in diameter, were beneath the uterine serosa. All of these cysts were restricted on subserosal areas of the uterine body and horn (Fig 2). They were consisted of variable sized, duct-like structures. Some cysts were lined by simple cuboidal or low columnar epithelium with elongated nuclei lying near the apex whereas the others were lined by squamous-type epithelial cells (Fig 3). The lumen of cysts, which contained serous fluid or traces of mucus in a more or less state, was round or slightly oval. These cysts were separated from the true muscular tunic. The stroma between the cystic spaces was fibromuscular or prominent of smooth cells without evidence of tumor-like cells or hemorrhage. Cysts contained three muscular layers; inner and outer layers are longitudinal and middle layer is circular (Fig 4). In the uterine body and horn, a thick endometrium and developed endometrial glands were observed. Hemorrhagic regions were evident in the endometrium beneath the surface epithelium.

Discussion

Gartner's duct is derived from remnants of the vaginal portion of the mesonephros. In cases of incomplete regression of these ducts, cysts can be developed due to secreting activity. Those cysts are usually asymptomatic⁴. Ludwig⁶ described that the duct was normally found only in the form of short tube or cyst and consisted of a thin internal longitudinal muscle layer, a slightly broad circular layer and an outer longitudinal muscle layer, which connected with the stratum subserosum and the stratum vasculare. He also observed that the duct was always located below the muscu-

lar bundles of the tela subserosa. Lumen of the duct may vary and the simple columnar epithelium of the duct are very narrow and the nucleus is an elongated ovoid lying near the apex. So far, a case of Gartner's duct cyst in a bitch has not yet been reported in Korea.

Cystic endometrial hyperplasia/pyometra in the bitch has been described as being associated with the abnormal response of the bitch's uterus to ovarian hormones such as estrogen and progesterone^{1,5}. These cysts also contains serosal fluid but the location and cause of the cyst is different those of Gartner's duct cyst.

In our report, histopathological findings suggested that this bitch was in the state of estrus period characterized by thickened endometrium, developed endometrial glands and hemorrhage beneath epithelial cells. Moreover, we found that the epithelial cells and locations of the cysts were well consistent with those of Gartner's duct, which were formed by incomplete regression of Gartner's duct. However, age of occurrence and pathogenesis responsible for this still remains unclear.

Conclusions

The abnormal uterus of an 11-year-old Maltese bitch was submitted for histopathological diagnosis on April 19, 2001. On gross examination, five thin walled uterine cysts were identified. These cysts were located on the serosal surface of

uterine body and horn. On cutting these cysts, all of them contained serosal fluid. By histopathological observation, all of these cysts were restricted on subserosal areas of the uterine body and horn. The epithelial cells and the location of cysts were well consistent with those of Gartner's duct. Thus, we diagnosed this case as Gartner's duct cyst.

Reference

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