

Case of Ovarian Teratoma in an Old Bitch

Chul-Ho Park, Jun-Tae Park, Sang-Ho Lee, Ki-Seok Oh and Chang-Ho Son[†]

College of Veterinary Medicine, Chonnam National University, Gwangju 500-757, Korea

ABSTRACT

A 11-year, 9-month-old female Shih-tzu was referred for evaluation of the body conditions. According to the physical examination and ultrasonography, the left ovarian mass was detected. For the removal of ovarian mass, an ovariohysterectomy was performed. Grossly, the ovarian mass was full of hairmatrix on the cut surface of the mass. Histopathological findings revealed a characteristic of teratoma, such as laminated keratines, hair, sebaceous glands, neuron tissue, differentiated bone and cartilage. The ovarian mass was well-differentiated components of 2 germ layers, and diagnosed as a mature teratoma.

(Key words : ovary, teratoma, canine)

INTRODUCTION

The fertilized ovum differentiates into extraembryonic and embryonic tissues in mammal. Abnormal growth of embryonic cell lines leads to development of germ cell tumors (Dillberger and Altman, 1987). Teratomas are a kind of germ cell tumors and are solid tumors derived from two or three germ layers-ectoderm, mesoderm and endoderm (Johnston *et al.*, 2001; Yamaguchi *et al.*, 2004; GülÇubuk *et al.*, 2012). The incidence of ovarian teratomas are rare in domestic animals (Johnston *et al.*, 2001; Yamaguchi *et al.*, 2004). Ovarian teratomas are commonly found in young animals, and the mean age at diagnosis is 6.5 years, with a range of 20 months to 13 years (Johnston *et al.*, 2001; Yamaguchi *et al.*, 2004).

This report describes a case of ovarian teratoma in an old bitch.

CLINICAL CASE

A 11-year, 9-month-old female Shih-tzu weighing 5.1 kg was referred for evaluation of the body conditions. The bitch had a history of treatment of thrombocytopenia one month ago.

The bitch's abdomen was not appeared distended, but physical examination revealed a firm, small-sized palpable mass in the abdominal cavity. Abdominal ultrasound showed a small solid mass in the left ovary in size of about 3.0 × 2.5 cm. The left ovary was enlarged and has a hyperechogenic parenchyma, and distal acoustic shadow (Fig. 1). Hematological and bioche-

mical parameters were within normal limits.

For the surgical removal of the neoplastic ovary, complete ovariohysterectomy was performed. The ovarian tumor was encapsulated, solid and its cut surface consisted of hairs and sebaceous materials (Fig. 2). The right ovary was macroscopically normal.

Specimens were fixed in 10% formalin and routinely processed, cut at about 3~5 µm in thickness, and stained with hematoxylin and eosin (H & E) to be evaluated under light microscopy. Histopathologically, the left ovarian tumor showed cutaneous developments including the laminated keratines, sebaceous gland and hair, central nervous development including

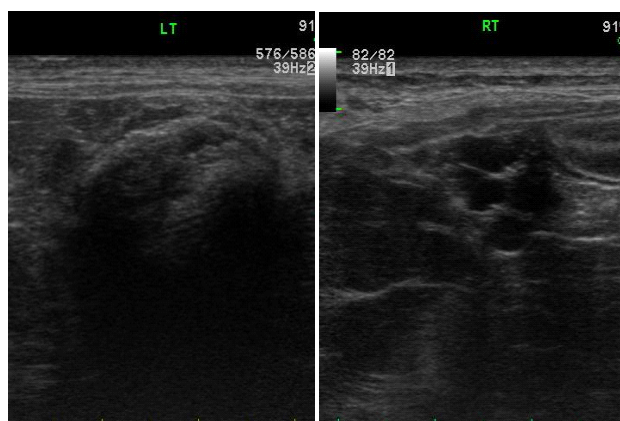


Fig. 1. The ultrasonographic images of the left and right ovary. The left ovary (LT) was seen as a enlarged, hyperechogenic parenchyma and distal acoustic shadow. The right ovary (RT) was observed normal structure with small ovarian cysts.

[†] Correspondence : E-mail : chson@jnu.ac.kr

the formation of multiple neurons with neuropil, and bone differentiation (Fig. 3).

On the basis of these histopathological findings, ovarian mass was considered as teratoma derived from the left ovary.

DISCUSSION

Canine ovarian neoplasia is uncommon. Reported incidences of ovarian tumors in all dogs with neoplasia are 0.5~6 per cent and overall incidence of germ cell tumors (dysgerminoma and teratoma) among the three types of ovarian tumors in dogs is 20 per cent and germ cell tumors are reported to occur with equal frequency (Johnston *et al.*, 2001).

Teratomas most commonly occur in young animals (Wilson *et al.*, 1985; Yamaguchi *et al.*, 2004) and Mean age at diagnosis with teratoma is 6.5 years, with range of 20 months to 13 years (Johnston *et al.*, 2001). In this case of a 11-year, 9-month-old dog was relatively older than the median age.

The most common clinical sign of teratomas is abdominal distention (Johnston *et al.*, 2001). but there is no clinical sign observed in some cases of ovarian teratoma (Wilson *et al.*,

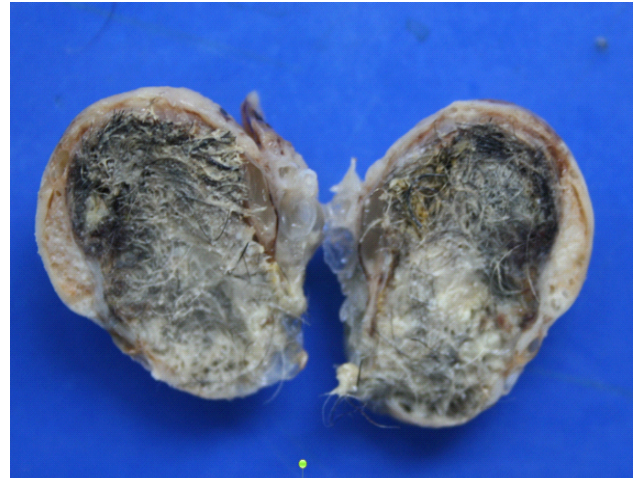


Fig. 2. Cut surface of the ovarian mass was filled with hair matrix; Formalin-fixed specimen.

1985; Dillberger and Altman, 1987). This case also did not observe the symptoms associated with teratoma.

According to the WHO histological classification in domestic animals, ovarian teratomas are classified as mature (benign), immature (malignant) on the basis of their cellular morpho-

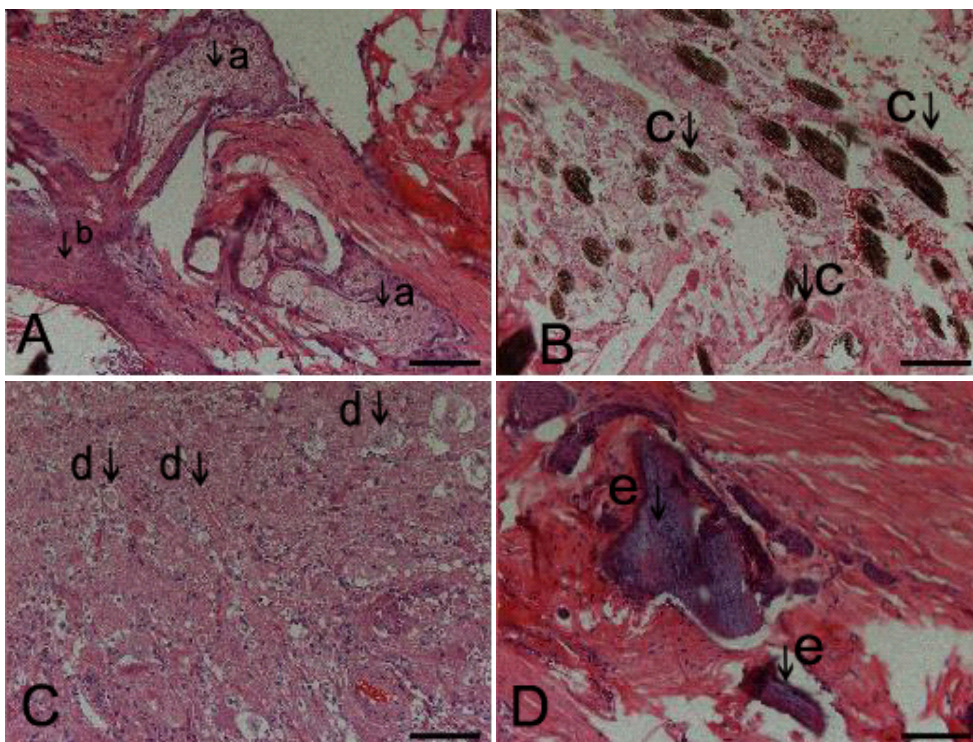


Fig. 3. Histologic section of various tissues from different germ layers in the ovarian mass. A and B: The elements of dermis. a-sebaceous gland, b-epidermis, c-hair. C : Central nervous tissue development including the formation of multiple neurons (d) with neuropil. D : Differentiation and calcification of the bone and cartilage (e).

logy, and are derived from more than one germ layer (GülÇubuk *et al.*, 2012). Canine ovarian teratomas are usually well differentiated and benign tumors (Shin *et al.*, 1996; Nagishima *et al.*, 2000; Yamaguchi *et al.*, 2004; Blaszak *et al.*, 2009). In the present case, ovarian teratoma was composed of mature two layers of ectoderm and mesoderm. Tissues of tumor were well differentiated, and there were not observed immature or malignant components. Therefore, the present case was diagnosed as mature ovarian teratoma.

REFERENCES

- Blaszak B, Walkowski M, Ibbs M and Jaskowski JM. 2009. Teratoma adultum in a bitch: a case report. *Vet. Med.* 54: 379-381.
- Dillberger JE and Altman NH. 1987. A canine ovarian germ cell tumor with extraembryonic differentiation. *Vet. Pathol.* 24: 96-98.
- GülÇubuk A, Altun ED, Bozkurt ER, Sontaş BH, Haktanir D and Turk J. 2012. Ovarian teratoma in a dog. *Vet. Anim. Sci.* 36: 573-576.
- Johnston SD, Root Kustritz MV and Olson PNS. 2001. *Canine and Feline Theriogenology*. Saunders, Philadelphia. pp. 202-203.
- Nagashima Y, Hoshi K, Shibazaki A, Fujiwara K, Konno K, Machida N and Yamane Y. 2000. Ovarian and retroperitoneal teratoma in a dog. *J. Vet. Med. Sci.* 62: 793-795.
- Shin TY, Lee BC, Kim DY, Kweon OK and Hwang WS. 1996. Ovarian teratoma in a Korean Jindo dog. *Korean J. Vet. Clin. Med.* 13: 74-76.
- Yamaguchi Y, Sato T, Shibuya H, Tsumagari S and Suzuki T. 2004. Ovarian teratoma with a formed lens and nonsuppurative inflammation in an old dog. *J. Vet. Med. Sci.* 66: 861-864.
- Wilson RB, Cave JS, Copeland JS and Onks J. 1985. Ovarian teratoma in two dogs. *J. Am. Anim. Hosp. Assoc.* 21: 249-253.

(접수: 2013. 11. 03/ 심사: 2013. 11. 04/ 채택: 2013. 12. 19)