



OVARIAN THECOMA IN AN ASYMPTOMATIC BITCH: A CASE REPORT

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We describe a theca cell tumor case report. The theca cell tumor (thecoma) is a tumor derived from fibrous collagen of theca cells, which surround the tertiary follicles of the ovaries. It is classified as a tumor of the gonadostromal tissue, which has the constituents of the endocrine apparatus of the ovary.¹

In Veterinary Medicine primary, ovarian tumors are considered rare, affecting mainly older animals (except for teratomas).¹ They are classified into three groups according to their histological origin: epithelial cells (papillary adenoma, adenocarcinomas), germ cells (disgerminomas and teratomas) and gonadal stromal cells (granulosa cell tumor, thecoma and luteoma).^{1,2} From these tumors, granulosa cell tumor is the most common one, occurring in about 50% of canine cases.¹

The clinical findings usually result from space occupation by the mass: abdominal distention, vomiting, anorexia, weight loss, ascites and back pain. If the tumor is functional, the secretion of hormones (progesterone, testosterone, estrogen and inhibin) can produce ventral alopecia, gynecomastia, myelosuppression, abnormal estrous cycles, and changes in behaviour (aggression, masculinization, nymphomania).¹⁻³

Case Report

History and clinical signs

A clinically healthy 10-year-old, nulliparous bitch, Labrador retriever, was presented for vaccinations and deworming. The last estrus cycle occurred 6 months ago and was longer than usual.

Physical examination

Palpation of an intrabdominal mass, in the left flank: non painful, globose, mobile, about 6 cm in diameter, with soft rubber consistency and no palpable lymph nodes.

Diagnostic tests and results

✓ **Blood analysis** (complete blood count, serum biochemical and coagulation tests) were normal.

✓ **Abdominal ultrasound** revealed a structure located in the middle to caudal abdomen with an irregular echogenic appearance, undefined dorsal limit, suggestive of a mass in the left ovary (Figure 1).



Figure 1. Ultrasonographic image of the left abdominal mass (arrows).

✓ **Thoracic radiographs** were unremarkable.

✓ **Exploratory laparotomy** was performed to evaluate *in situ* the abdominal mass. The size of the left ovary was increased, without adhesions to organs or abdominal wall (Figure 2). Ovariohysterectomy was performed.

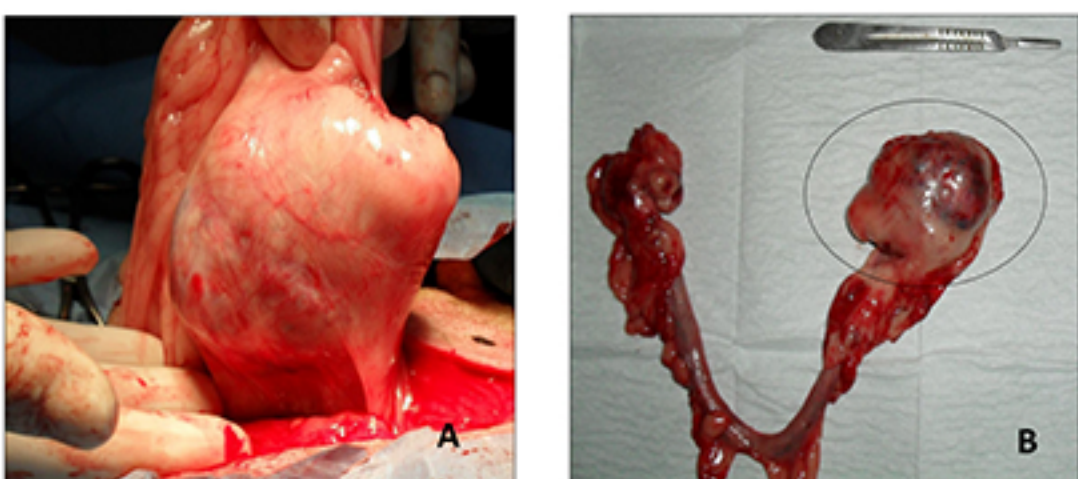


Figure 2. A - Exposure of the left ovary. B - The left ovary (circle) was approximately 3 by 6 cm. The contralateral ovary had the expected normal size.

✓ **Histopathological diagnosis** was consistent with thecoma (Figures 3 and 4).

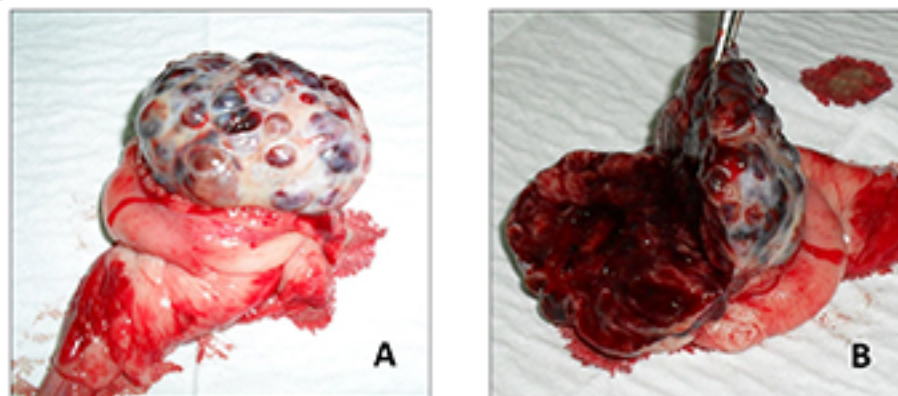


Figure 3. The left ovary. A - After cutting the ovarian bursa: a granular heterogeneous aspect with hemorrhagic foci and white solid areas. B - Cross-section of the hemorrhagic foci.

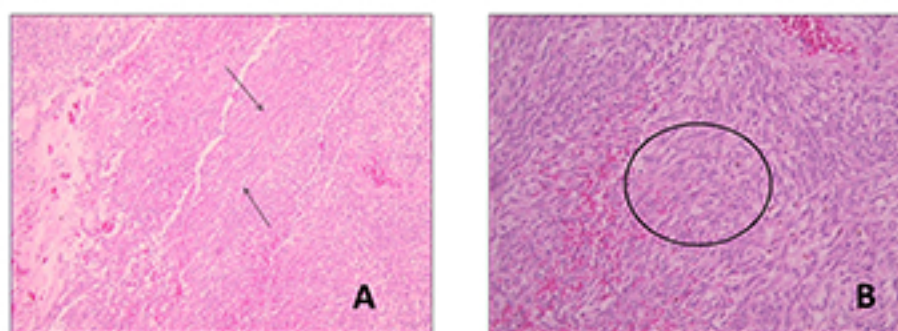


Figure 4. A - Proliferation of cells with round to spindle nuclei (arrows), H&E; x100. B - Undefined pale and vacuolated cytoplasm (circle), H&E; x200. The neoplastic cells resemble the theca interna cells arranged in interlacing bundles associated with extensive fibrino-hemorrhagic areas and edema. The cells showed low to moderate citonuclear atypia.

✓ **Immunohistochemical panel** only possible for two general cytoskeletal markers, was concordant with the expected for a derived "sex cord-stromal tumor" (Figure 5).

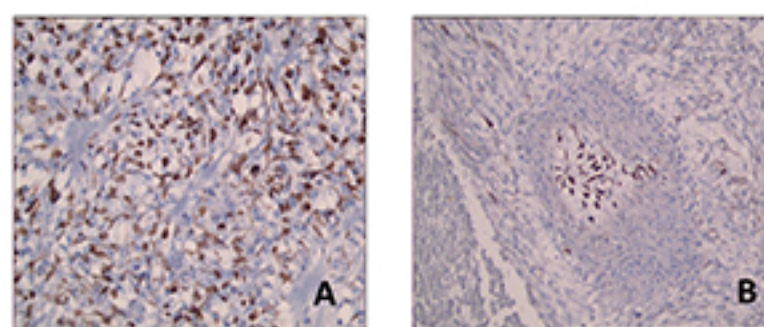


Figure 5. A - Positive immunoreaction for vimentin (V9 Cell Marque) x400. B - Focal positive immunoreaction for Cytokeratins AE1/AE3 (Cell Marque) x400. EnVision™-detection system peroxidase/DAB (DAKO); Mayer's haematoxylin counterstaining.

Follow-up

The animal recovered well from surgery. Vaccination and deworming were performed three weeks after surgery. The bitch has remained clinically normal one year after removing the thecoma.

Discussion

There are few reported cases of thecoma in small animals.²⁻⁵ It is considered a benign tumor and its complications are related to excessive growth of the mass and/or changes induced by hormone production.

Histologically, it is often difficult to differentiate if there is only involvement of theca cells. For this reason, immunohistochemistry evaluation, although expensive and rarely used in clinical practice, is an important tool for establishing immunophenotyping of tumor cells.

Other markers would be needed for immunophenotyping characterization, the immunohistochemical study would be completed with the CK7 and inhibin-alpha markers.

In conclusion, to our knowledge, and according to the literature this is the third report of an ovarian thecoma in a bitch.^{4,5} Although rare, the thecoma should be part of the differential diagnosis of asymptomatic females with palpable abdominal mass, with surgery as the treatment of choice.