

Case 11

Dermic mass aspirate from a Cat

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Cytological examination:

Smears from the mass were moderately cellular and of good quality with a faint gray-lilac necrotic background admixed with variably sized black granules. A mixed population of cells was present with a prevalence of large macrophages (20-25µm) characterized by abundant bluish cytoplasm often filled with variably sized melanin black granules (Figure 1). Very few aggregates of small epithelial cells of basal appearance were also present (Figure 2).

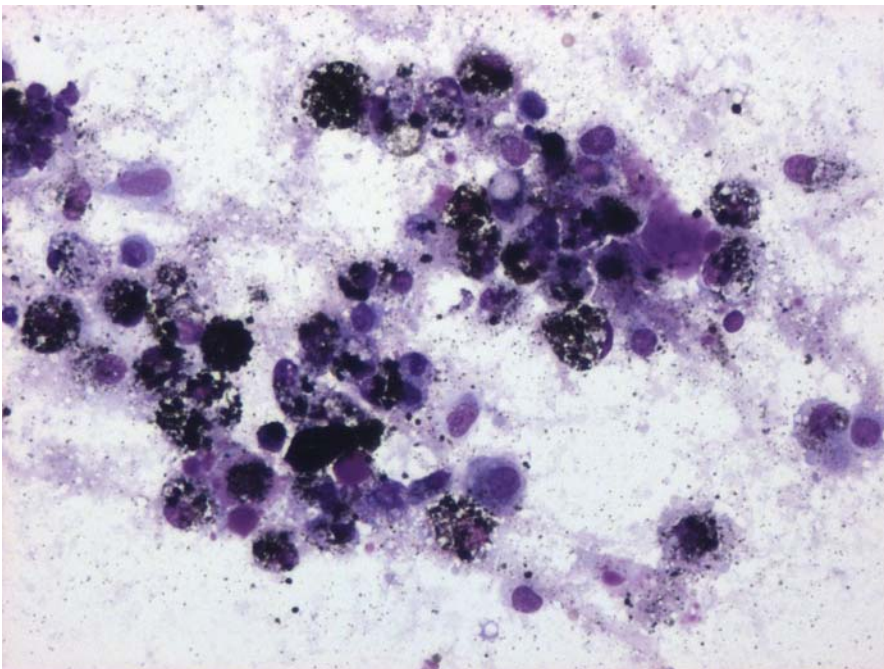


Figure 1. FNA of a thoracic cutaneous mass of a cat. Within a necrotic background, numerous macrophages in phagocytosis of melanin are present. May-Grunvald Giemsa, 20x.

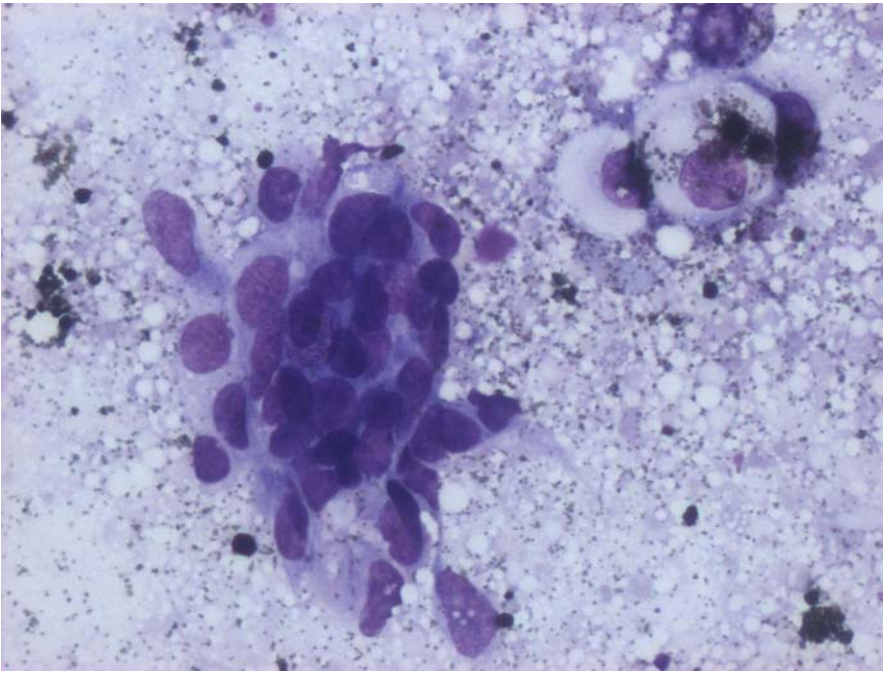


Figure 2. FNA of a thoracic cutaneous mass of a cat. A cluster of basal epithelial cells with small amount of bluish cytoplasm are present. May-Grunwald Giemsa, 40x.

Interpretation:

The neoplasia is composed of a dual cell population including basaloid epithelial cells and pigmented cells. The differential diagnosis considered includes pigmented variants of trichoblastoma, pilomatricoma, matrical carcinoma, basal cell tumor and melanocytic neoplasia. The epithelial pigmented tumors are usually characterized by the presence of epithelial cells. In contrast, preparations obtained from melanocytic tumors should not contain groups of epithelial cells.

A cytological diagnosis of benign pigmented epithelial tumor (most likely pigmented trichoblastoma) was made.

Additional test results

Histologic evaluation of the cutaneous mass revealed a dermic/subcutaneous tumour. There was no association with the overlying epidermis. The tumor, 0.8 cm in diameter, was multilobular, multicystic, well demarcated, moderately infiltrative, highly cellular and supported by moderate fibrous stroma. The tumor was composed of lobules of small basaloid epithelial cells with sparse fibrous stroma and several large cystic areas. The tumoral cysts were lined by multilayered epithelium composed of epithelial basaloid cell, often melanized (30%) (Figure 3, 4). There were also interspersed melanophages. The epithelial basaloid cells were characterized by elevated N/C ratio, indistinct cellular border, scant eosinophilic cytoplasm, round to ovoid nuclei with dense chromatin, inconspicuous nucleoli and few mitoses (0-1x HPF) (Figure 5). Necrotic debris and melanophages accumulate within the lumina.

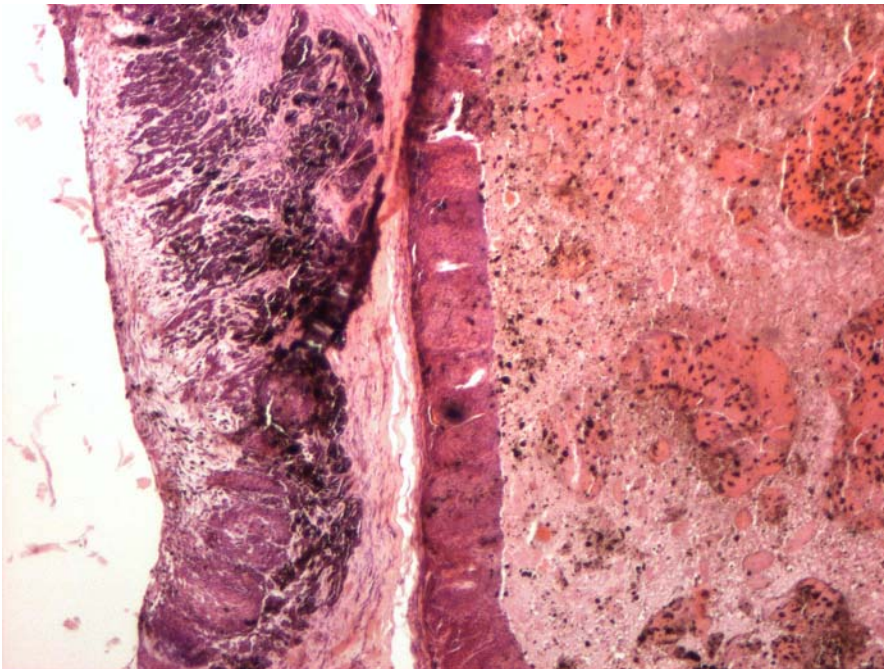


Figure 3. Large tumoral cysts lined by multilayered epithelium with central cystic degeneration and necrosis. Hematoxylin-Eosin, 4x

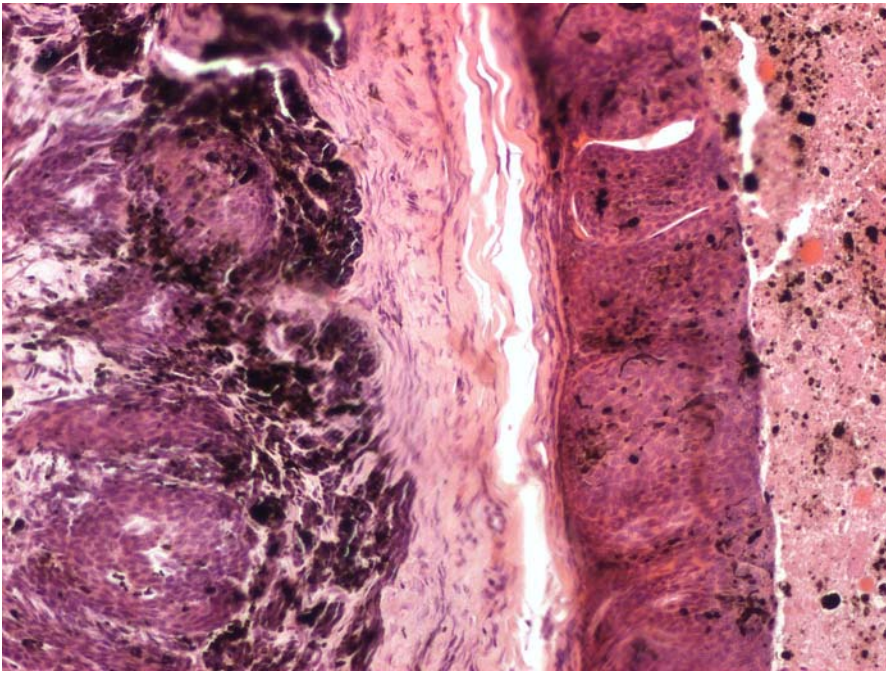


Figure 4. Areas of heavy pigmentation of cystic wall. Hematoxylin-Eosin, 10x

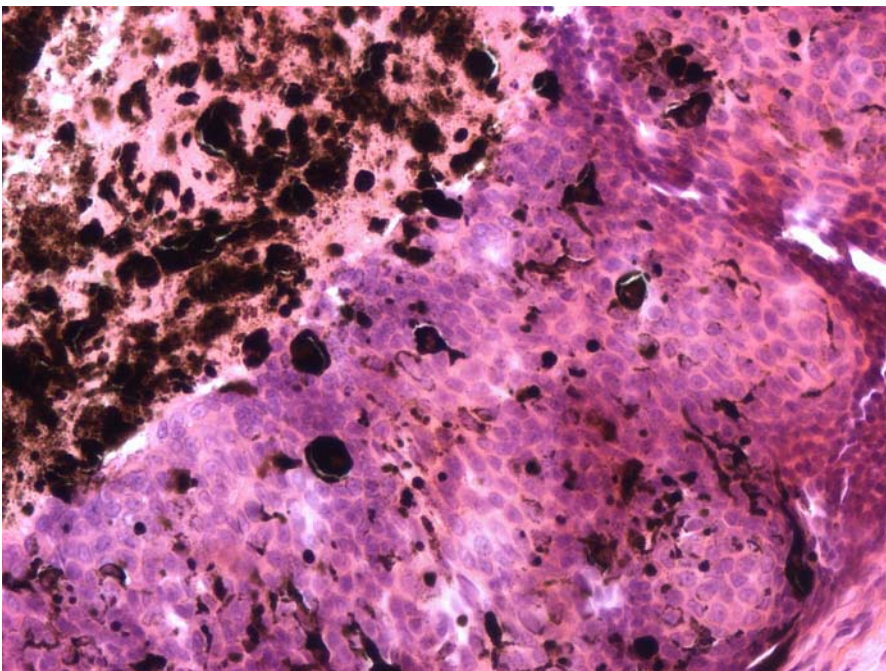


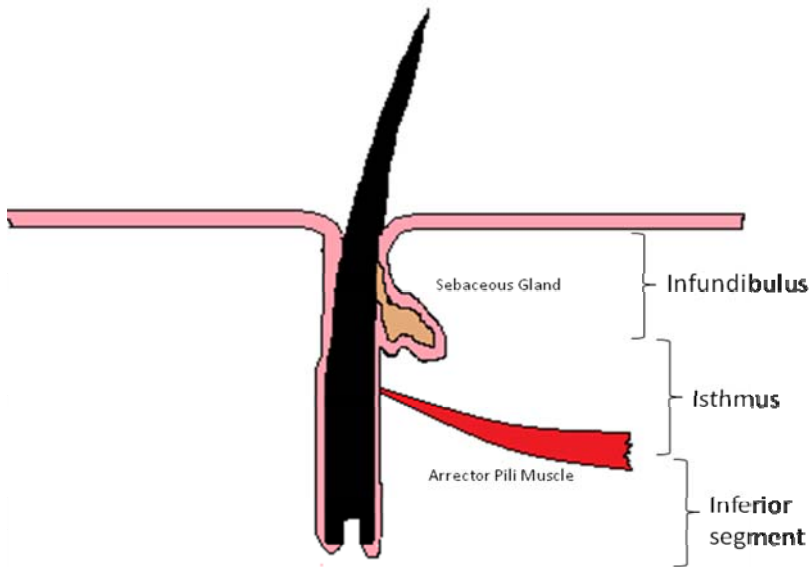
Figure 5. Cyst lined by a wall composed by basaloid epithelial cells often melanized. Hematoxylin-Eosin, 20x.

Definitive diagnosis:

The histologic diagnosis was pigmented variant of cystic trichoblastoma of the thoracic skin.

Discussion:

Hair follicles can be divided transversely into three levels: the upper portion (infundibulum) extends from the entrance of sebaceous duct to the follicular ostium; the middle portion (isthmus) extends from the insertion of arrector pili muscle to the sebaceous duct; the inferior segment extends from the papilla to the insertion of arrector pili muscle ¹.



Follicular tumors are neoplasms derived from hair follicles. They are most common in dogs, less frequent in cats ¹ (Incidence: 2,6⁰% in dogs and 2% in cats ²). The classification of follicular tumors recapitulates the normal architecture of the hair follicles.

In WHO classification, trichoblastoma is “a benign neoplasm derived from or reduplicating the primitive hair germ of embryonic follicular development” ³, previously classified as a basal cell tumor. In cats, trichoblastomas are usually solitary, dome-shaped, firm nodules less than 2 cm in diameter; alopecia and secondary ulceration are frequent; the lesion is often pigmented and may be confused clinically with melanocytic neoplasms⁴.

References:

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3. Goldshmidt MH, Dunstan RW, Stannard AA, et al.: **Histological Classification of Epithelial and Melanocytic Tumors of the Skin, 2nd edition, vol.III**. Armed Forces Institute of Pathology, Washington, DC, 1998.
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