

Case of the Month March 2023

Signalment: 13yr old neutered male Shetland sheepdog

Clinical history: The patient was presented for an evaluation of multiple “vesicles” associated with diffuse erythema and alopecia over forehead and dorsal neck. The dog has a long history of atopic dermatitis poorly controlled on Apoquel with multiple episodes of recurrent pyoderma. Initial diagnostics included skin (too numerous to count neutrophils with 2+ cocci) and ear (3+ rods, 1+ cocci and occasional yeasts) cytology.

On dermatological examination there were multiple cyst-like formations associated with mild to moderate erythema and alopecia. Such lesions were mainly localized on the dorsal neck and forehead. Both ear pinnae were also markedly erythematous with crusts and mild lichenification. The trunk had patchy alopecia and erythema. Few epidermal collarettes were also present in the axillary and inguinal regions. Both ear canals were erythematous with moderate thick ceruminous debris with both tympanic membranes only partially visible.

Three skin 6mm punch biopsies of the cyst-like formation were taken for histopathological assessment.

Figure 1

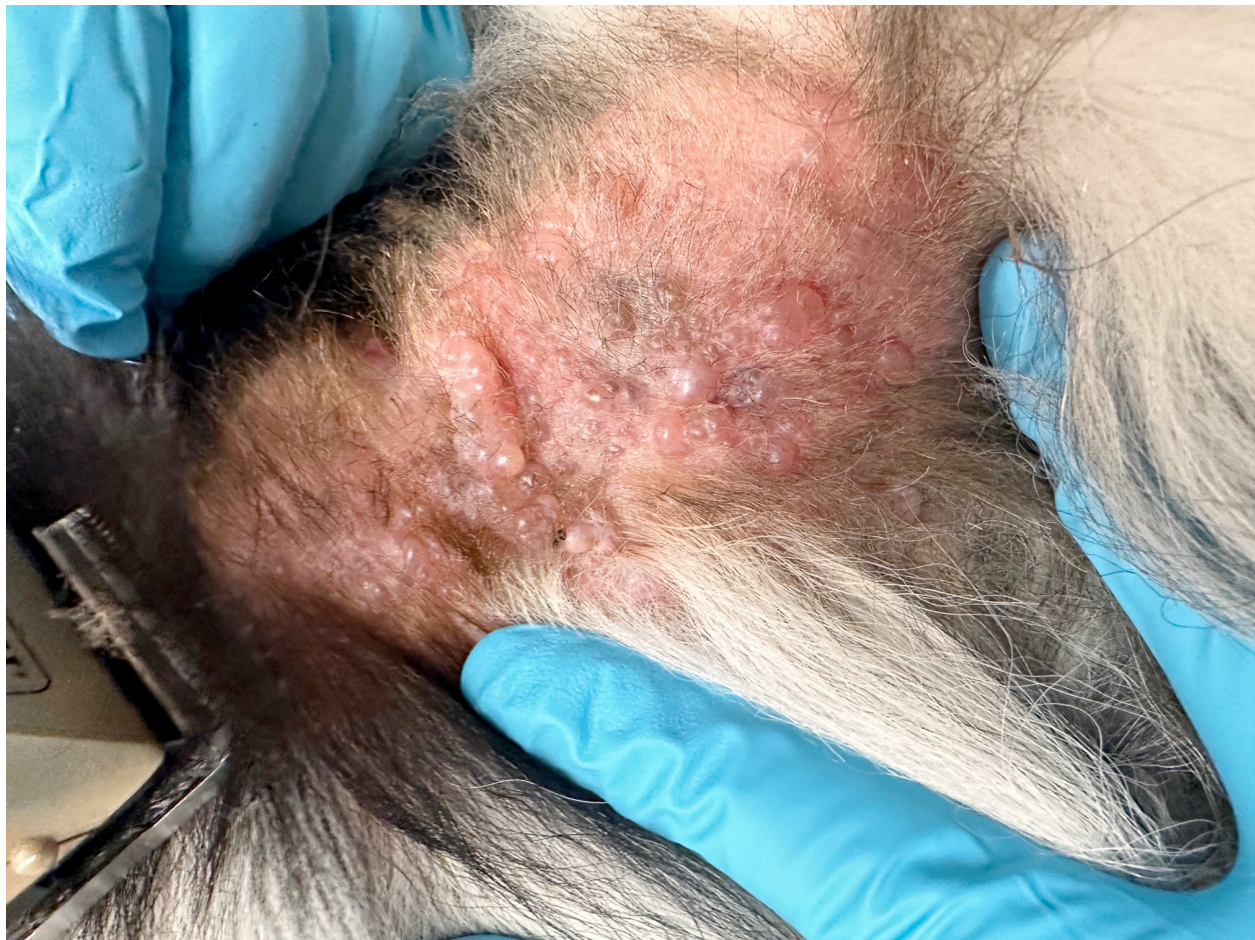


Figure 2

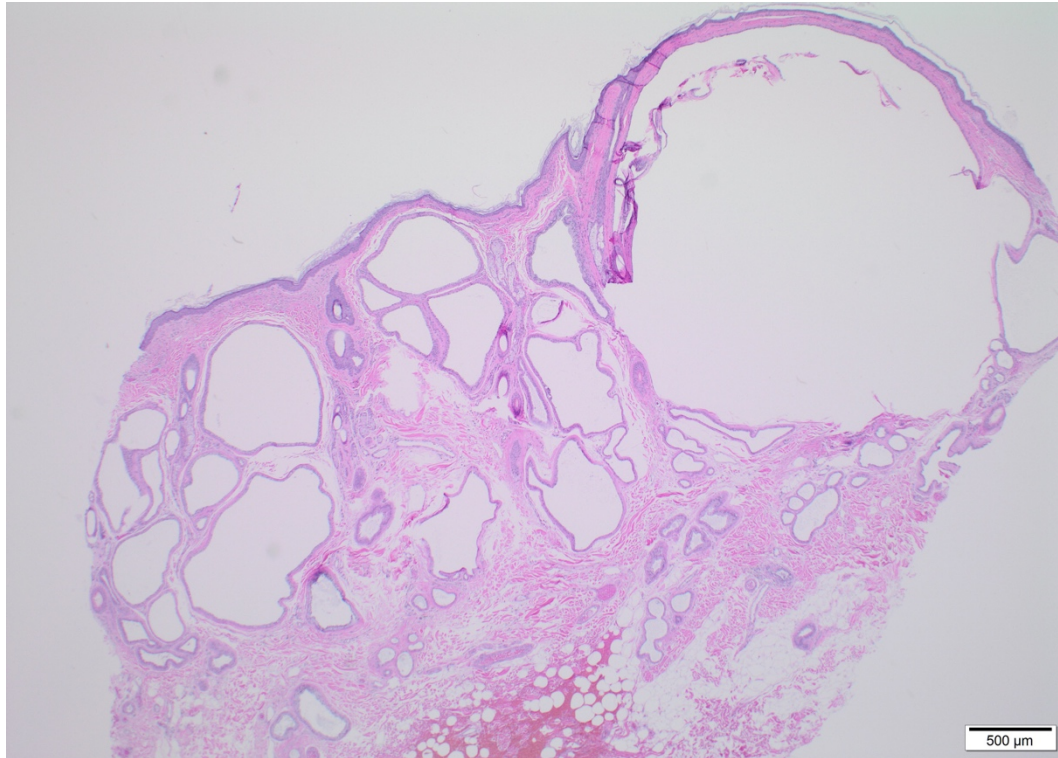
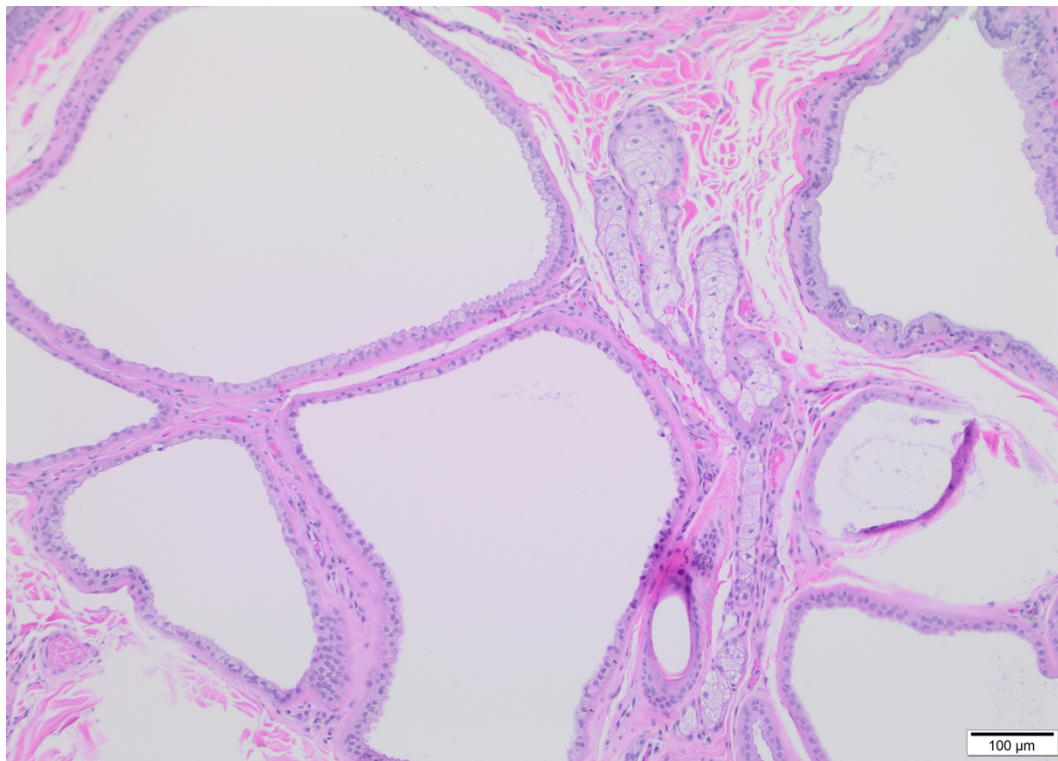


Figure 3



Which of the following is the most likely diagnosis?

- A. Hamartomas
- B. Canine apocrine cystomatosis**
- C. Follicular cysts
- D. Multicentric apocrine cystadenoma

Histopathologic description

All submitted tissue is examined and all specimens have similar features to varying degrees. The dermis is expanded by extensive clusters of cystically dilated sweat glands. These simple cysts occasionally contain small amounts of amphophilic material (secretion) and are lined by a single layer of low cuboidal epithelium. The cysts separate and surround adnexal structures. Additionally, there is mild to moderate mastocytic, eosinophilic, and lymphoplasmacytic perivascular dermatitis.

Morphological diagnosis

Apocrine cystomatosis (cystic hyperplasia of sweat glands).
Mild to moderate, mastocytic, eosinophilic, and lymphoplasmacytic perivascular dermatitis.

Comments

The clinical and histological findings of this case are consistent with canine apocrine cystomatosis, previously known as cystic hyperplasia of sweat glands. In this case, there is also evidence of perivascular dermatitis typical of allergic/atopic dermatitis compatible with the clinical history. The feline version of canine apocrine cystomatosis (also known as ceruminous glands cystomatosis) is much more common and characterized by cyst-like structures in the periauricular region extending to the ear canals. Although less common cysts have been observed also on the periocular, perioral, and perineal regions of affected cats. Canine apocrine cystomatosis is a rare and unique non-neoplastic condition in dogs characterized by multiple clusters of cystically dilated sweat glands.

The etiology of this condition is unknown. However, congenital conditions, gland duct obstruction, glandular hyperplasia with retention of the content of dilated glands or senile degenerative changes have been hypothesized at the base of this condition. Affected animals are middle-aged or older with lack of breed or sex predisposition. Clinically, they are characterized by numerous, solitary or grouped, tense to fluctuant bullae or vesicles with translucent and brownish appearance and a smooth surface. Cysts usually contain clear, watery and acellular fluid and measure up to 3 cm in diameter and mainly localized on head and neck. Although a generalized form, described in a Pekingese has been recently described.

Histologically, these cysts are characterized by an inner layer of glandular epithelial cells and an outer layer of myoepithelial cells. Although rare, the transition from large non-neoplastic cystomatosis to neoplastic cystadenoma may be possible. Generally, the lining epithelium is characterized by strong

cytoplasmic positivity for pan-cytokeratin and marked cytoplasmic positivity of myoepithelial cells that surrounded the wall for α -SMA.

Traditionally, complete excision is expected to be curative although depending on the extent and/or location of the lesion(s), it may not always be feasible. More recently, the use of chemical ablation with trichloroacetic acid, CO₂ laser ablation, cauterization and cryosurgery have also been described as alternative methods. Nevertheless, additional lesions may also develop *de novo*.

Because of the hypothesized possibility of a neoplastic transformation such lesions should be monitored overtime to and if a rapid enlargement of the lesions occur a surgical removal followed by histopathological evacuation is recommended.

References

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