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Cutaneous neoplasias in cats are for 80% malignant (in dogs only 50%). Skin tumours make up 20-30 % of all neoplastic diseases in cats. Squamous cell carcinoma, basal cell tumour, fibrosarcoma and mast cell tumour represent around 80% of all the feline skin neoplasias (fig 1).

Talking about the skin tumours in cats, 2 clinical approaches can be done:
The "lumps" and the cutaneous neoplasias that present as dermatitis.

I. The lumps

I.A Epithelial neoplasias

BASAL CELL TUMOUR
Basal cells neoplasia: very common in cats occurring more in older cats.
Patch, often pigmented (0,5-3 cm) to well demarcated dome-shaped lesion or "cyst".
Good prognosis; the tumour remains strictly localized.
Treatment: excision

SQUAMOUS CELL CARCINOMA
Keratinocytic neoplasia, also called epidermoid carcinoma.
When the tumour is restrictive to the epithelium, one can add the sufixe "in situ" (to oppose to the dermal extension).
Neoplasias associated to UV stimulation (actinic keratosis: white haired cats has 14 times more chance to develop the tumour than pigmented cats) or to a papillomavirus infection.
The more affected sites are: nose, tips of ears, eyelids, lips.
Lesions: erythema, scaling, crusts, ulcers.
Metastatic extension rare and slow to lymph nodes and other organs (lung).
Treatment: full excision (amputation), radiotherapy

IB Adnexal neoplasias
(sebaceous, sweat glands and hair follicles)
Uncommon in cats

CERUMINOUS GLAND TUMOUR
Adenoma or adenocarcinoma (metastasis to lymph nodes in 15-20%)
Clinical expression: chronic supurative otitis sometime associated with medium ear infection and nervous signs (Horner’s syndrome, facial paralysis, vestibular ataxia).
Treatment: focal excision to total ear canal ablation with tympanic bulla osteotomy -TECABO-
IC Melanocyte neoplasias

MELANOMA
Melanomas are more often diagnosed to the eyes (and eyelids) and rarely in the oral cavity or the skin. Metastasis are very frequent (60-100% of cats).

ID Mesenchymal neoplasias

FELINE FIBROSARCOMA
Incidence of fibrosarcoma is correlated with vaccination (rabies vaccination?). Aluminium has been found in macrophages in some fibrosarcoma (aluminium hydroxide is the main adjuvant used in many vaccines). The role of viral onco genes FeLV or Feline sarcoma virus (FeSV) has been eliminated following studies using PCR tools. Frequency estimations in Northern America have reported 20 cases out of 100,000 cats. In Europe, 0.4 cases out of 100,000 cats.

Clinically, classically, feline fibrosarcoma are characterized by non-painful subcutaneous firm, nodular or multinodular cutaneous lesions. Tumours are preferentially located at the injection site: Interscapular area, dorsal side of the neck: 40-49.5%, Thorax/flanks: 25-29%, Loins and back: 13-14%.

The speed of evolution of fibrosarcomas is greatly variable. Small-size nodules may persist as such for quite a long time; inversely, other masses may double in size within a very short period, which would show that tumoral growth accelerates alongside consecutive excisions. In the late stage of the tumours some necrosis and large ulcers can be observed. Metastasis occurs in 10-15% of cases (lymph nodes and lung).

The prognosis depends on the local extension of the tumours (sometimes very aggressive).

Treatment: very wide excision, radiotherapy. Non-specific immunomodulators has been widely used twenty years ago in the United States (Acenaman® - an Aloe vera extract, ...) but are now abandoned due to their low efficiency and little specificity.

MALIGNANT FIBROHISTIOCYTOMA
Malignant fibrohistiocytomas, representing 60% of the "feline fibrosarcoma complex". These tumors are polymorphous and behave like tumoral cells of mesenchymatous appearance, associated with other tumoral cells of histiocytic appearance, all of which contained in a fairly abundant collagenic stroma. Osseous metaplasias, giant multinucleated cells, or myxoid stroma form part of their polymorphism.

FIBROMATOSE
Fibromastoses is a rare subcutaneous mesenchymal tumour, characterized by a highly differentiated fibroblastic proliferation, associated with dense collagenic stroma.

This tumour is difficult to manage because post-surgical recurrences are very common.

IE Round cells tumours

MAST CELL TUMOUR
Mast cell tumours (Mct) seems to be one of the more common neoplasia observed in cats (usually old cats). Two forms of disease are reported independently: cutaneous form and visceral form (rare). Classically Mct on the skin are divided in two categories: solitary or multiple masses. It was reported than solitary forms can mainly be considered as the begin form (only 15% of these tumours show a tendency to recur or spread after surgical excision).

Multiple masses form can be share in two types:
- Multiple classical Mct must be considered as a severe condition (low survival time; especially if some evidences of systemic extension exist).
- A variant of multiple Mct has bee reported: the histiocytic Mct (cells have a sparsely granular cytoplasm). This form is usually observed in young cats (less than 4 years with a breed predisposition in Siamese) and often regress spontaneously within 2 years of detection. This variant must probably considered as a form of mastocytosis (resembling to the human mastocytosis).

Head and neck are the most common localizations for the neoplastic development.

A differential diagnosis must be done including eosinophilic granuloma and mastocytosis (urticaria pigmentosa).

Treatments: surgery, chemotheraphy (CCNU-Lomustine, vinblastine...).

Prognosis: good for solitary form without lymph node extension and histiocytic form; variable for solitary form with lymph node extension, guarded for multiple form, bad for visceral form.

LYMPHOMA
If the lymphoma is the most common malignancy in cats (one third of all tumours), the cutaneous localization is rare. As it is reported in dogs, the cutaneous lymphoma can be divided in epitheliotropic (always T cell) or non epitheliotropic (T or B cell).

EPITHELIOTROPIC LYMPHOMA
Only few reports has been published. It is then quite complicated to give the general clinical aspect of the disease: patches, plaques or masses sometimes ulcerated. The phenotype of neoplastic lymphocytes remains also unclear. It is report to be CD3+ (Tcell), CD4- and CD8 – (VK Affolter personal communication).

The epitheliotropic lymphoma must be differentiated from the feline lymphocytosis.
I F The nerve and vascular neoplasias

II The cutaneous neoplasias that present as dermatitis

II.1 FELINE MULTICENTRIC SQUAMOUS CELL CARCINOMA IN SITU (Bowenoid carcinoma)
Uncommon disease.
Multiple multifocal, scaling, hyperpigmented, alopecic plaques
Head and neck more often affected
Disease associated to a viral induction (papilloma virus) often secondary to an immunodeficiency (FeLV, FIV, ...).
Possible presence of demodex (d cati)
Treatments:
Surgery, retinoid (acitretin 2 mg/kg/day),
Local treatments: imiquimod, local acyclovir (avoid the oral ingestion)

II.2 “MILIARY” MAST CELL DERMATITIS
Multiple crusted popular dermatitis evoking military dermatitis (early stage multifocal mastocytoma). See histiocytic mast cell tumour.

II.3 FELINE LYMPHOCYTOSIS
Skin lesions are variable: usually solitary lesions.
The most frequent lesions are alopecia, erythema, and scaling. Less commonly, single or multiple nodular lesions, ulcers or excoriations.
Histologically the epitheliotropism (T cell) is less marked than in the epitheliotropic lymphoma.
Studies on the clonality of the lymphocytes involved in the disease suggest that this dermatitis could be considered as a low-grade indolent lymphoma.

II.4 FELINE PARANEOPlastic ALOPECIA
See lecture L Ordeix (Feline paraneoplastic syndrome)

II.5 PARANEOPlastic EXFOLIATIVE DERMATITIS (Thymoma associated)
See lecture L Ordeix (Feline paraneoplastic syndrome)

II.5 Cutaneous Metastasis

CUTANEOUS METASTASES OF MAMMARY ADENOCARCINOMAS

DIGITAL METASTASES OF PULMONARY ADENOCARCINOMAS
Rare disease
Destructive lesions on the digits associated with asymptomatic or symptomatic (dyspnea, coughing) bronchogenic or squamous cell carcinomas.
Multiple digits of multiple paws show swelling, ulcerations and onychomadesis that may lead to lameness (occasionally, only one paw or one digit is affected).
In classical cases, digit histopathology reveals infiltration by tubular structures containing ciliated and mucous cells (but often, the cells are no more ciliated. The most obvious characteristic is then a mucus production producing some secretion vacuoles). Thoracic radiographs (lobar, nodular and/or interstitial pattern) followed by pulmonary histopathology further confirm the diagnosis. Since life expectancy is about 2 months, amputation of the affected digits and/or lung lobectomy are not recommended.