C.A.B.T.S.G.

INTERNATIONAL VETERINARY BEHAVIOUR MEETING

DAY TWO

SESSION TWO

ANXIETY AND ITS ROLE IN BEHAVIOURAL DISORDERS.

CHAIR:

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Anxiety In Cats

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Introduction
Anxiety has been defined as an emotional state accompanied by behavioural and autonomous reactions analogous to fear, when there is the least change in the internal or external environment. Anxiety leads to disorganisation of self-control and to loss of adaptability. Anxiety is not only the anticipation of danger, and it is not fear even if one may observe behavioural sequences found in fear: inhibition, escape and avoidance, fear aggression, and displacement activities. Anxiety and maladjustment are pathologies. Anxiety is a kind of a chaos of the cognitive and emotional spheres.

Clinical signs and symptoms
In this model, cat anxiety will be divided in three groups based on the invalidation in time: paroxysmal, intermittent and permanent anxieties. The specificities for each of these groups will be given for the presence, the absence or the modification of several specific parameters: defence aggression, inhibition, scanning behaviour, displacement activities (for example lick-alopoeia), (facial, urinary and scratching) marking behaviours, etc.

<table>
<thead>
<tr>
<th>Anxiety</th>
<th>Invalidation</th>
<th>Primary organ.S.</th>
<th>Defence aggress</th>
<th>Displacement act.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paroxysmal-fit</td>
<td>in fits</td>
<td>++++</td>
<td>0/(+)</td>
<td>0</td>
</tr>
<tr>
<td>Intermittent</td>
<td>periodical</td>
<td>+++</td>
<td>+++</td>
<td>+</td>
</tr>
<tr>
<td>Permanent</td>
<td>continued</td>
<td>0/+</td>
<td>0/+</td>
<td>+++</td>
</tr>
</tbody>
</table>

Table 1. Clinical signs and symptoms

<table>
<thead>
<tr>
<th></th>
<th>Dopaminergic system</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diarrhoea of the large intestines</td>
<td></td>
</tr>
<tr>
<td>Dyspepsia (rare)</td>
<td></td>
</tr>
<tr>
<td>Emotional urination</td>
<td></td>
</tr>
<tr>
<td>Ptyalism*(frequent)(hypersalivation)</td>
<td>Dopaminergic system</td>
</tr>
<tr>
<td>Tachycardia (tachypnea)-rare</td>
<td>Noradrenergic system</td>
</tr>
</tbody>
</table>

Table 2. Primary organic symptoms.

<table>
<thead>
<tr>
<th>Irritation and fear aggressions</th>
<th>(Pageat, May 1996)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irritation aggression:</td>
<td>Threat with squat body posture, passage from sitting position to ventral decubitus: hiss, mydriasis, hair bristled up, ears down, slaps, simulations of attack</td>
</tr>
<tr>
<td>Social spacing</td>
<td></td>
</tr>
<tr>
<td>Irritation aggression:</td>
<td>Threats with crouched body posture, passage to sitting to lateral or dorsal decubitus, all claws and teeth bared: no simulations of attack.</td>
</tr>
<tr>
<td>Contact rupture</td>
<td></td>
</tr>
<tr>
<td>Fear aggression</td>
<td>Short threatening phase, no control of the bites and scratches, autonomous response.</td>
</tr>
</tbody>
</table>

Table 3. Irritation and fear aggressions.
Displacement activities.

Alopecia, as a consequence of excessive self-licking, are the most frequent, then bulimia and potomania.

Extensive alopecia is only a symptom of anxiety. Treatment will be different if it is a displacement activity or a stereotypy. The dyssymetry (predominance on the left part of the body) observed in dogs is not found in cats.

<table>
<thead>
<tr>
<th>Kinds of alopecia</th>
<th>Symptom of:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Simple localised alopecia, anxiety, on a precise spot (sometimes an old scar, the spot of an old pain,...)</td>
<td>Intermittent anxiety, Permanent anxiety</td>
</tr>
<tr>
<td>Alopecia (or lick granuloma) on the tip of the tail</td>
<td>Permanent anxiety, stereotypy, involutive depression</td>
</tr>
<tr>
<td>Multiple localised alopecia</td>
<td>Intermittent and permanent anxieties</td>
</tr>
<tr>
<td>Extensive alopecia</td>
<td>Intermittent anxiety, Permanent anxiety, stereotypy, chronic depression, atrophy</td>
</tr>
</tbody>
</table>

Table 4. Alopecia

Territorialisation.

This is the building and maintenance of territorial fields. These fields are in an unstable equilibrium in a constantly variable environment. Territorialisation asks for a constant adaptation of the different markings. A loss of adaptability signals a pathological state (anxiety, depression).

<table>
<thead>
<tr>
<th>Anxiety</th>
<th>facial marking</th>
<th>urinary spraying</th>
<th>Scratching</th>
<th>Avoidance marking</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paroxysmal-Fit</td>
<td>=</td>
<td>=or+</td>
<td>=</td>
<td>=or+</td>
</tr>
<tr>
<td>Intermittent</td>
<td>++ or --</td>
<td>+or-</td>
<td>* or =</td>
<td>+ (anal sacks)</td>
</tr>
<tr>
<td>Permanent</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>+(perspiration)</td>
</tr>
</tbody>
</table>

Table 5. Clinical signs and symptoms* multiple places in the familiar surroundings

Other peculiarities of cat anxiety. They are summarised in tables 6 and 7.

<table>
<thead>
<tr>
<th>Anxiety</th>
<th>Inhibition</th>
<th>Exploration</th>
<th>Rolling Syndrome</th>
<th>Skin Syndrome</th>
<th>predatory agg.*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paroxysmal-Fit</td>
<td>=</td>
<td>=or+</td>
<td>=</td>
<td>=</td>
<td>or + same h.</td>
</tr>
<tr>
<td>Intermittent</td>
<td>++or--</td>
<td>Hypervigilance</td>
<td>+</td>
<td>+</td>
<td>variable hour</td>
</tr>
<tr>
<td>Permanent</td>
<td>++</td>
<td>partial -</td>
<td>+or0</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

Table 6- Clinical signs and symptoms. *on people (owners)

<table>
<thead>
<tr>
<th>Anxiety</th>
<th>Flehmen</th>
<th>Sleep</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paroxysmal-Fit</td>
<td>=</td>
<td></td>
</tr>
<tr>
<td>Intermittent</td>
<td>++</td>
<td>Insomnia*-Hypersomnia</td>
</tr>
<tr>
<td>Permanent</td>
<td>partial--</td>
<td>Insomnia*-Hypersomnia</td>
</tr>
</tbody>
</table>

Table 7. Clinical signs and symptoms. *Insomnia with normal sleep patterns, with awakenings every 1 to 2 hours.

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Classification of clinical pictures of anxieties

Different clinical pictures have been recognised and standardised in French-speaking Europe.

| Anxieties usually first diagnosed in kittens or in adolescence | Deprivation syndrome  
|---------------------------------------------------------------|---------------------------------------------------------------|
|                                                               | Separation anxiety (rare)  
|                                                               | The cat-toy syndrome  
| Anxieties from a somatic affection                            | Algic (painful) states anxiety  
|                                                               | Anxiety in hyperthyroidism  
| Substance related anxieties                                   | Hallucinosic eidolies  
| Anxieties usually diagnosed in adults                        | Deterritorialisation anxiety  
|                                                               | Anxiety in close surroundings  
|                                                               | Cohabitation anxiety  
|                                                               | Deritualisation anxiety  
|                                                               | Anxiety syndrome (unspecified)  

Table 7. Anxiety disorders. Several of these anxiety disorders will be described.

Cat anxiety syndrome (unspecified)

Description.

This section groups anxiety clinical cases not described elsewhere in specific classifications.

Aetiology.

Anxiety disorders result from external factors (evolution from a phobia, paradoxical communication, inescapable situation, ...) or from internal factors (hormonal imbalance, painful disease, ...).

Evolution.

Paroxysmal anxieties are stable. Intermittent anxieties evolve to hyperaggression (instrumental conditioning from defence aggression), permanent anxiety (increase of inhibition), dysthymia. Permanent anxieties are stable or evolve towards chronic depression.

Diagnosis.

It is based on the appearance of the symptoms described in the tables.

Differential diagnosis.

Cat Anxiety Syndrome (unspecified) has to be differentiated from other specific anxiety disorders. Intermittent anxiety must be differentiated from somatic diseases. Permanent anxiety has to be differentiated from chronic infectious diseases. A diagnosis of organic disease (hyperthyroidism, ...) does not exclude an anxiety disorder.

Prognosis.

It is generally favourable. It is reserved for intermittent anxiety because of instrumentalisation of defence aggression and the rupture of the human-animal bond.

Treatments.

Drug treatment will be individually defined according the symptoms. One can use the following model of brain aminergic neurotransmission to define the drugs of choice.
<table>
<thead>
<tr>
<th>System</th>
<th>Symptoms</th>
<th>Psychotropic drug</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA++</td>
<td>hypervigilance, soft faeces, mydriasis, flehmen,...</td>
<td>propranolol, lithium, F3, pheromones</td>
</tr>
<tr>
<td>DA++</td>
<td>diarrhoea, aggression</td>
<td>tiapride, sulpiride, selegiline</td>
</tr>
<tr>
<td>DA--</td>
<td>inhibition, lack of exploration, lack of social initiative, dysorexia, stereotypy (extensive alopecia), hyposomnia, insomnia,...</td>
<td>sélégiline, F3 pheromones</td>
</tr>
<tr>
<td>5HT--</td>
<td>licking alopecia, anorexia, bulimia, insomnia, inhibition (aggression),...</td>
<td>clomipramine, trimipramine, fluoxetine, paroxetine, F3 pheromones</td>
</tr>
<tr>
<td>Other</td>
<td>starting from noise</td>
<td>trioxazine, benzodiazépine, F3 pheromones</td>
</tr>
</tbody>
</table>

Table 8. Drug choice with the aminergic neurotransmission model

Behavioural therapy.
It will be adapted to each case: habituation, desensitisation, counterconditioning, ...

Deprivation anxiety
This syndrome is very similar to the one described in dogs. Cats that have lived their development in poorly stimulating surroundings may not adjust in richer environments when adult. But people find it normal for a cat to be fearful, so they do not consult for it.
There are two main disorders.
Intermittent deprivation anxiety in cats not socialised to people or forced to live with them: you may find anorexia in the presence of people, feeding at night, limited scanning fields, hypervigilance, hyposomnia, fear aggression on people manipulating the cat, ...
Permanent deprivation anxiety in cats not imprinted to the external environment, acquired at a very young age, with imprinting and hyperattachment to one owner: infantilism, sucking on owner and woollens, separation anxiety.

Deterritorialisation anxiety (DTA)
Description.
Anxiety with alteration of facial marking and production of urinary marking. This is the main reason for consulting.
Pathogenic and symptoms.
The disruption of the territorial appeasing markings leads to increased facial marking (appeasing), scratching and urine spraying (excitement). There are two stages. 1- reactive urine spraying on limited spots from a excited or fearful cat. 2- increased urine spraying in anxious cats. In this case, the owners have frequently punished the cat (long) after the spraying sequence. There is also deritualisation.

Evolution.
This may lead to instrumental spraying and general soiling.
Treatment.
F3 analogous pheromones (Feliway©) will easily treat reactive deterritorialisation. Psychotropic drugs will be needed for deterritorialisation anxiety.
Therapy.

Reterritorialisation may be necessary. Putting the cat in a small room with the help of F3 pheromones for a week may help appease him, before scanning the larger surroundings.

Anxiety in closed surroundings
Description.
Cats may not adapt easily to a life in small, closed, areas. They may develop anxiety accompanied by redirected predatory aggression on people.
Pathology and symptoms.
A favourable factor may be the development of the kitten in a stimulating environment (outside, access to external environment) before shutting him inside a hyposensitizing apartment. 90% of the cats shut in closed surroundings may present fits of hyperactivity with or without predatory aggression redirected on people’s ankles or hands. These behavioural sequences may become stereotypic.
Evolution.
From a reactive desire of activity due to a hyposensitizing environment, the cat may become anxious and hyperaggressive (instrumental conditioning of aggressive sequences). There is no spontaneous cure. A first stage may be helped by enrichment of the environment (moving decoys to redirect hunting behaviour, frequent meals). Hyperesthesia may lead to lick alopecia.
 Diagnosis.
Anxiety - fits of hyperactivity - rolling skin syndrome - irritation aggression - hypervigilance, primary organic symptoms (salivation, diarrhoea), secondary organic symptoms (alopecia), avoidance markings (and perspiration) - hyposensitizing living environment for a cat rear ed up in a more stimulating environment.
Treatment.
If the enrichment of the environment is not sufficient, drugs will be necessary.
Therapy.
Stimulating objects and decoys. Frequent meals.

Cohabitation anxiety
Description.
Cats who have to live together may present different patterns of degradation of their emotional states and communicative skills. Two cats (at least) are acting a drama in 3 stages, with the frequent involuntary help of the owners.
Aetiology.
It may be the arrival of a new cat, but also the return of a cat that has been hospitalised, anaesthetised, that is sick, old, confused, ...
Evolution.
There is a passive and an active cat.
1- Aloofness: in the first stage, both cats are increasing the distance between themselves and their own fields.
2- Skirmish: in the second stage, the moving (escaping) passive cat is attacked by the active one and followed; the passive cat activity fields are invaded by the active cat.
3- Obsession: the hypervigilant, hypersensitive, hyperactive cat (rolling skin syndrome, tail restlessness, redirected aggression on objects and people moving around, localised alopecia.)
is invading the isolation fields of the passive, inhibited, fear-aggressing, self-licking (extensive alopecia) cat.

Differential diagnosis.

It is very important to find out if one or both cats are not suffering from anything else than anxiety, like dysthymia, hormonal imbalance, ...

Treatment.

It will vary with each stage.

1- F3 pheromones.

2- clomipramine, fluoxetine, tiapride, sulpiride, for the active cat. Selegiline, clomipramine, trimipramine, for the passive cat.

3- Selegiline for both cats. P. Pageat has described a therapeutic protocol with hospitalisation of both cats in separate but contiguous cages (with an increasing opening between the cages), with F3 pheromones, selegiline treatment. There are positive results in 76% of the cases.

Other anxiety disorders

Several clinical pictures of anxieties may be briefly presented: anxiety in hyperthyroidism, after the use of ketamin, in algic states, separation anxiety, and deritualisation anxiety.

Conclusions

Anxiety is not fear, it is not phobia. It is a pathology; fear is not. Clinical observation has lead several authors to describe peculiar anxiety disorders and treat them effectively.

References


