

Characterization of pruritus in canine atopic dermatitis, flea bite hypersensitivity and flea infestation and its role in diagnosis

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Background – In dogs, flea infestation (FI), flea bite hypersensitivity (FBH) and canine atopic dermatitis (CAD) have been mainly characterized by their lesions but never by their pruritus. In clinical practice, many of these dogs exhibit only pruritus.

Hypothesis/Objectives – The purpose of this study was to evaluate the characteristics of pruritus in these dermatoses and their potential usefulness for diagnosis.

Animals – Dogs included were selected from the Oniris clinical data. Cases were selected in which the dogs had only one of the three dermatoses diagnosed. The diagnosis of CAD was based on Prélaud's criteria and positive intradermal tests except flea; for FBH by compatible clinical signs and a response to an intradermal test with flea allergen; and for FI by the presence of fleas. Moreover, in each group, other primary pruritic skin diseases were excluded.

Methods – Location, behavioural manifestations, seasonality and quantification of the pruritus were evaluated. The statistical analysis used chi-squared test with a *P*-value <0.05.

Results – Three hundred and forty-six dogs were analysed, 91 with CAD, 110 FI and 145 FBH. The period (season) of onset was not statistically different either for each dermatosis or among the three dermatoses. Some locations were highly specific for one dermatosis as follows: ventral abdomen/medial surface of thigh (chewing) and radius/carpus/tibia/tarsus (chewing) in FI; back/dorsolumbar area (chewing) and tail (chewing) in FBH; and paws (chewing/licking) and face/neck (rubbing) in CAD.

Conclusions and clinical importance – Some features of pruritus could be suggestive of the causal disease, with possible diagnostic value in pruritic dogs.

Introduction

Pruritus is the major complaint in canine dermatology. It is associated with most dermatoses either as the initial feature of the disease (primary pruritus) or as a complication of many initially nonpruritic conditions (seborrhoea, infections, noninflammatory alopecia, etc.). Principal primary pruritic diseases include those caused by ectoparasites (except demodicosis), allergic diseases and some neoplastic diseases, such as epitheliotropic lymphoma. Flea infestation (FI), flea bite hypersensitivity (FBH) and canine atopic dermatitis (CAD) are the three major dermatoses observed in the group of primary pruritic dermatoses in France. These three dermatoses are clinically quite well defined. Clinical signs associated with FI are variable and depend on the number of fleas and the tolerance of the host for direct skin irritation. Non-allergic individuals can harbour a variable number of fleas

with little or no clinical response and a variable degree of pruritus.¹ Canine FBH is characterized by a pruritic and papular dermatitis with, in chronic cases, alopecia, crusts, hyperpigmentation and lichenification. Lesions are typically localized to the lumbosacral area, base of the tail and caudomedial thighs.² Canine atopic dermatitis is mainly diagnosed on epidemiological and lesional criteria, which when combined together (Willemse's criteria, Prélaud's criteria and Favrot's criteria), allow a diagnosis with good sensitivity and specificity.^{3–5}

These conditions, however, become difficult to differentiate if pruritus is the only complaint and other clues, e.g. fleas or lesions of FBH, are absent. Pruritus is often described as simply present or absent, although additional attributes, such as intensity, frequency, behavioural manifestations and location, may have diagnostic value.

The aim of this study was to compare different features of pruritus associated with FI, FBH and CAD and to estimate their diagnostic specificity and sensitivity.

Materials and methods

Criteria for the diagnosis of CAD, FI and FBH

The selection of the cases was carried out to ensure that dogs were affected by only one dermatosis.

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Cases of CAD were diagnosed on the basis of excluding other primary pruritic skin diseases, the fulfilment of at least three of Prélud's criteria⁴ and having positive responses to intradermal testing with aeroallergens. These dogs had no evidence of flea infestation or clinical signs compatible with FBH. In addition, all dogs (and in-contact animals) were treated for fleas every 4 weeks and there was no change in the pruritus. These dogs did not have positive reactions to intradermal testing (IDT) with a whole-body flea extract (ARTU flea antigen; Destaing Laboratories, Grasse, France). Finally, adverse food reactions were excluded as a cause of pruritus by feeding a restricted diet for at least 6 weeks without any improvement.

Flea bite hypersensitivity was diagnosed on the basis of compatible skin lesions at typical body locations,² by excluding other primary pruritic skin diseases and/or a strong immediate or delayed positive response to flea allergen on intradermal testing. Skin test reactions were observed at 20 min postinjection, and for delayed responses between 24 and 72 h.

Flea infestation of dogs was diagnosed by exclusion of other primary pruritic skin diseases (that is, cases that did not fulfil Prélud's criteria, had negative skin scrapings and adhesive tape test results); these animals had fleas present and were pruritic. Each dog was included when other parasitic or allergic skin diseases had been ruled out and where there was no immediate or delayed response to the intradermal injection of the flea allergen.

Study population

Cases were selected from the databank of the dermatology clinics of Oniris (Nantes, France) of dogs examined between 2007 and 2010 (first opinion and referral cases). For every clinical case, all epidemiological, clinical and diagnostic information was collected on the day of consultation, scored and recorded in a standardized method established by one of the authors (P.J.B.).

Data available for pruritus included the following information.

- 1 Onset of pruritus compared to the onset of skin lesions: primary, secondary, or unknown. Primary pruritic skin diseases were defined as those that clearly began with a pruritic conditions without skin lesions, then lesions progressively developed. Secondary pruritic diseases were those that clearly began with skin lesions followed by the development of pruritus. Unknown described cases for which the clinician with the help of owners could not determine whether the pruritus was primary or secondary.
- 2 Estimated intensity of pruritus: 1 (low), 2 (medium) or 3 (high).
- 3 Estimated frequency of pruritus: 1 (low), 2 (medium) or 3 (high).
- 4 Global quantification of the pruritus by owners on a scale from 0 (normal dog) to 100 (the most pruritic dog that owners could imagine).
- 5 Date of onset of pruritus.
- 6 Presence or absence of seasonality; if seasonal, then the season(s) associated with pruritus.
- 7 Location(s) of pruritus: head, pinnae, neck, back, dorsolumbar area, tail, thorax, flank, humerus, radius/ulna/carpus, digits and

interdigital areas (paws), thigh (lateral and caudal sides), thigh (medial side), tibia/tarsus, ventral abdomen, axillary area, perianal area and others (described). For statistical analysis, these localizations were grouped into nine zones: (1) face/neck; (2) pinnae; (3) lateral thorax/axillary area; (4) ventral abdomen/medial thigh; (5) back/dorsolumbar area; (6) caudal/medial thigh/perianal area; (7) tail; (8) paws; and (9) radius/carpus/tibia/tarsus.

- 8 For each location with pruritus, the behavioural manifestation observed was noted, as follows: scratching, chewing, licking or rolling/rubbing.
- 9 Pinnal pedal reflex was tested, and the hair coat was searched manually and via flea comb for ectoparasites.

Other criteria recorded were also analysed in this study, as follows: age, sex, breed and otitis externa (present or absent).

Statistical analysis

Descriptive statistics, chi-squared test and Student's unpaired *t*-test were used to compare dermatoses for each criterion. The results were considered statistically significant with a *P*-value <0.05. For significant results, sensitivity and specificity were calculated.

Results

Dogs

The cases were selected between September 2006 and July 2010. Of 2584 dogs, 475 were diagnosed with CAD, 346 with FBH and 243 with FI. After review of the medical records, dogs with only one dermatosis (FI, FBH or CAD) were included. Data analysis was performed on 91 dogs with CAD, 145 with FBH (seven of 145 on the basis of a strong positive reaction to flea allergen alone) and 110 with FI.

Gender distribution is shown in Table 1, and no statistical difference was found among or between the three groups. Breed distributions, the mean age at first consultation and the mean age at the onset of dermatitis are also shown in Table 1. Statistical differences were observed between FI and CAD and between FBH and CAD for both age of onset and age at first consultation.

Pruritus data

All data about pruritus (onset, seasonality, pinnal pedal reflex, intensity, frequency and global quantification) are shown in Table 2.

Of these different data, only some showed statistical differences between groups. Dogs with FBH or CAD had a significantly greater proportion of primary pruritus than dogs with FI. Moreover, dogs with FBH or CAD had pruri-

Table 1. Epidemiological data

Parameter	FI	FBH	CAD
Mean age at onset of dermatitis (years)	5.3*	5.8*	2.7
Mean age at consultation (years)	5.7*	6.2*	4.6
Male/female	44/66†	78/67†	36/55
Main represented breeds (number of cases)	Labrador retriever (16) poodle (14) cavalier King Charles spaniel (7) cocker spaniel (5) bichon frise (4) beagle (4)	Mixed breed (23) Labrador retriever (15) German shepherd (9) poodle, golden retriever, Pyrenean shepherd, Newfoundland (7 of each)	West Highland white terrier (14) Labrador retriever (13) boxer (12) French bulldog (10) German shepherd (6)

Abbreviations: CAD, canine atopic dermatitis; FBH, flea bite hypersensitivity; FI, flea infestation. Statistical analysis (Student's unpaired *t*-test):

**P* < 0.05, statistical difference; †no statistical difference compared with CAD.

tus that was significantly more intense and frequent than dogs with FI. The global quantification of pruritus by owners on a scale from 0 to 100 also showed a significantly higher score for dogs with FBH or CAD compared with dogs with FI.

The distribution of the dates of onset as an indicator of seasonality was not statistically different, either for each dermatosis separately or among the three dermatoses. Moreover, seasonality was noticed only in 9% of FI (70% spring, 20% summer and 10% autumn), 21% of FBH (17% spring, 68% summer, 12% autumn and 3% winter) and 15% of CAD (64% spring and 36% summer; Table 2).

The body location of pruritus for the dogs and corresponding frequencies are reported in Table 3 and Figure 1. Some locations were statistically more frequently affected in one of the three dermatoses, as follows: abdomen and medial side of thighs (58.2%) in FI; back and dorsolumbar area (69%) and tail (11.7%) in FBH; and paws (81.3%), face and neck (57.1%), lateral thorax and axillary areas (29.7%) in CAD. Some manifestations were statistically more frequently observed in one of the three conditions, as follows: chewing (80.7%) in FBH; and scratching (90.1%), licking (57.1%) and rubbing (14.7%) in CAD.

For each location with pruritus, the behavioural manifestations observed were analysed. Some behaviour–location combinations were statistically more frequent in one of the three conditions, as follows: chewing the radius/carpus/tibia/tarsus (12.7%) and chewing of the ventral abdomen/medial thigh (26.4%) in FI; chewing of the dorsolumbar area/back (63.4%) and chewing of the tail (11%) in FBH; and rubbing of the face/neck (12.1%),

chewing paws (57.1%), licking paws (49.5%) and chewing and licking paws (25.3%) in CAD.

Sensitivity and specificity

Sensitivity and specificity were calculated for the pruritus data. Only sensitivity and specificity of body location ($\pm$ behavioural manifestation) with statistical differences are reported in Table 4.

The key elements of the characteristics of pruritus for each of the three dermatoses are summarized in Table 5 and Figure 2.

Discussion

In this study, the presence of primary pruritus was found to be a sensitive diagnostic finding for CAD and FBH, but not for FI. This study found that 84% of dogs with CAD and 81% of dogs with FBH were reported by their owners to have primary pruritus. Regarding CAD, the percentage in this study was higher than previously reported in another study where a primary pruritus was observed in 61% of the cases.⁵ In our study, FI was reported as primary pruritic in only 64% of dogs. The presence of primary pruritus, therefore, seems to be highly sensitive for CAD and FBH but not for FI. Flea infestation can be characterized especially by a primary but sometimes also by a secondary pruritus (14% in FI compared with 2 and 3% in FBH and CAD, respectively).

The pinnal pedal scratch reflex has been found to correlate with a diagnosis of scabies in 43–82% of cases.^{6,7} In one study, the pinnal pedal reflex had a sensitivity of 81.8% and a specificity of 93.8%.⁷ Rarely, data on the pinnal pedal reflex are reported for other pruritic skin dis-

Table 2. General data on pruritus (percentage)

Parameter	FI	FBH	CAD	Statistically significant
Onset of pruritus (primary – secondary – unknown)	64 – 14 – 22	81 – 2 – 17*	84 – 3 – 13*	CAD versus FI, FBH versus FI
Seasonal pruritus	9	21†	15†	None
Positive pinnal pedal reflex	4	1†	6†	None
Intensity of pruritus (mild – moderate – severe)	19 – 39 – 42	6 – 34 – 60*	13 – 25 – 62*	CAD versus FI, FBH versus FI
Frequency of pruritus (mild – moderate – severe)	29 – 40 – 31	17 – 33 – 50*	9 – 34 – 57*	CAD versus FI, FBH versus FI
Quantification of pruritus (owners)	54 (5–100)	69‡ (10–100)	64‡ (10–100)	CAD versus FI, FBH versus FI

Statistical analysis (chi-squared test): * $P < 0.05$, statistical difference; †no statistical difference compared with FI. Statistical analysis (Student's unpaired t -test): ‡ $P < 0.05$, statistical difference.

Table 3. Locations of pruritus (as percentages)

Location	FI	FBH	CAD	Statistically significant
Face/neck	24.5*	15.9	57.1†	CAD > FI and FBH
Pinnal (all cases)	36.4*	26.2	48.4*‡	None
Pinnal (only cases without otitis)	22.7	23.4*	30.8*‡	None
Lateral thorax/axillary area	16.4*	9	29.7†	CAD > FI and FBH
Ventral abdomen/medial thigh	58.2†	27.6	38.5*	FI > CAD and FBH
Dorsum/dorsolumbar area	24.5†	69†	4.4	FBH > FI and CAD, FI > CAD
Caudal/medial thigh/perianal area	6.4*	9*§	0	FBH > CAD
Tail	4.5*	11.7†	0	FBH > FI and CAD
Digits/interdigital areas	21.8	27.6*	81.3†	CAD > FBH and FI
Radius/carpus/tibia/tarsus	12.7*§	6.2*	0	FI > CAD

For one location, statistical analysis (chi-squared test) compared two values in sequence (*no statistical difference; † $P < 0.05$, statistical difference) and, if necessary, the extreme values (‡no statistical difference; § $P < 0.05$, statistical difference).

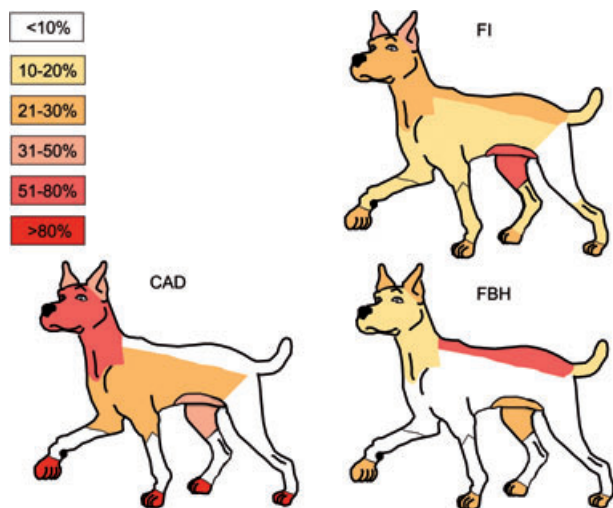


Figure 1. Silhouettes of locations of pruritus in flea infestation (FI), flea bite hypersensitivity (FBH) and canine atopic dermatitis (CAD). The percentages express the frequency of pruritic observations for each area.

eases. Studies by Bourdeau *et al.*⁶ and Mueller *et al.*⁷ both reported a low positive response rate of 4 and 6.2%, respectively, in the control group. In our study, only a few dogs had a positive pinna pedal reflex in each of the three diseases. Based upon the findings in this study, the absence of a pinna pedal reflex is another useful diagnostic finding for differentiating FBH, FI or CAD from other primary pruritic diseases, such as sarcoptic mange; the sensitivity was 99, 96 and 94% and specificity 4, 3 and 9%, respectively.

The intensity and frequency of the pruritus were significantly greater in FBH and CAD compared with FI. Flea

infestation is less commonly associated with a high intensity and/or high frequency of pruritus than CAD and FBH. The quantification of pruritus by owners on a scale from 0 to 100 highlighted this difference; FI was significantly less pruritic than FBH or CAD.

Surprisingly, only 9 and 21% of owners of dogs with FI and FBH, respectively, observed an association between seasons and their dog's dermatosis, with mainly spring for FI and summer for FBH. The lack of seasonality was confirmed by the similar distribution of onset of the dermatosis with seasons. This information given by the owners also appears, in part, in the results of our previous studies on this subject.^{8,9} Our observations of fleas on dogs carried out between 1996 and 2011 showed that, in the west of France, fleas are perennial parasites in dogs, with a minimal prevalence of 5% in winter and a peak at the end of the summer (around 20%). Thus, in the west of France and probably in other areas with a similar climate, flea-associated diseases cannot be excluded on the sole basis of the season of onset. For CAD, the seasonality was only 15%, a percentage similar to that reported in different studies and textbooks on CAD.^{5,10}

The location of the pruritus differed and was significantly more common in some areas for each of the three dermatoses. For FI, two locations were most common, the ventral abdomen/medial thigh and radius/carpus/tibia/tarsus areas. Primary pruritus localized to the radius/carpus/tibia/tarsus had a low sensitivity of 13% and a high specificity of 96%. For FBH, the back/dorsolumbar area and the tail had a sensitivity of 69% and a specificity of 85%. The tail had a low sensitivity of 12% but a high specificity of 97%. For CAD, three areas were noted: face/neck, lateral thorax/axillary area and paws. Primary pruritus of the paws had a sensitivity of 81% and

Table 4. Sensitivity and specificity of pruritus data (as percentages)

	FI	FBH	CAD
Primary pruritus	Sensitivity, 64; specificity, 18	Sensitivity, 81; specificity, 27	Sensitivity, 84; specificity, 6
Absence of pinna pedal reflex	Sensitivity, 96; specificity, 3	Sensitivity, 99; specificity, 3	Sensitivity, 94; specificity, 9
Presence of pruritus	Dorsum/ dorsolumbar area: Tail :	Sensitivity, 69; specificity, 85 Sensitivity, 12; specificity, 97	Paws: Sensitivity, 81; specificity, 75 Lateral thorax/ axillary area: Sensitivity, 29; specificity, 88
Absence of pruritus			Caudal/medial thigh/perianal area: Sensitivity, 100; specificity, 0 Radius/carpus/ tibia/tarsus: Sensitivity, 100; specificity, 0 Tail: Sensitivity, 100; specificity, 0
Combination of one behavioural manifestation for one body location	Chewing of ventral abdomen/medial thigh: Sensitivity, 32; specificity, 88 Chewing of radius/ carpus/tibia/tarsus: Sensitivity, 13; specificity, 96	Chewing of dorsum/ dorsolumbar area: Sensitivity, 63; specificity, 88	Rubbing of face/neck: Sensitivity, 12; specificity, 99 Chewing of paws: Sensitivity, 57; specificity, 81 Licking of paws: Sensitivity, 49; specificity, 91 Chewing and licking of paws: Sensitivity, 25; specificity, 97

Only sensitivity and specificity of statistical differences of pruritus for one location ($\pm$ behavioural manifestation) are reported.

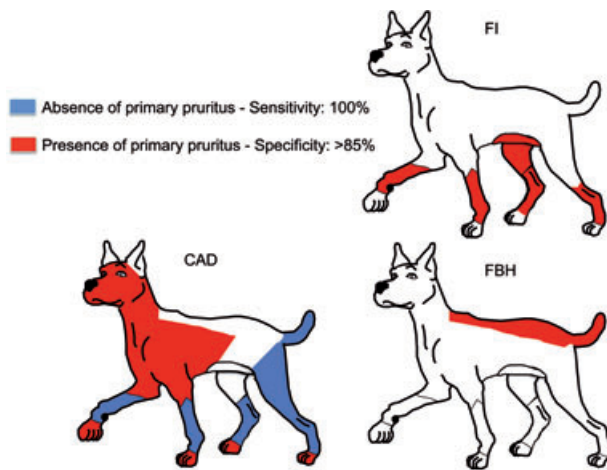


Figure 2. Silhouettes of key areas of FI, FBH and CAD with presence or absence of primary pruritus. High sensitivity = 100%. High specificity >85% (location ± manifestation).

a specificity of 75%. For the lateral thorax/axillary area, a sensitivity of 29% and specificity of 88% were found. In contrast, some locations were never primarily pruritic in CAD, namely the caudal/medial thigh/perianal area, radius/carpus/tibia/tarsus areas and tail. These locations might be used to exclude CAD (100% sensitivity) as the only dermatosis in those cases presenting with primary pruritus in these areas.

The comparison of the silhouette of pruritic areas in CAD with one of the lesional areas published by Wilhem *et al.*¹¹ shows that the more pruritic areas are also the more lesional areas, namely face/neck, pinnae, lateral thorax/axillary areas, ventral abdomen and paws. Differences were observed, however, when comparing the present study with that of Wilhem *et al.*¹¹ Notably, with respect to the caudal and medial sides of the thigh and the radius/carpus/tibia/tarsus areas, pruritus was absent in these areas in the 91 dogs with CAD observed in the present study, whereas lesions were present in more than 20% of the dogs reported by Wilhem *et al.*¹¹ This difference could be explained by extension to the neighbouring nonpruritic areas. A second possibility could be the inclusion in the study of Wilhem *et al.*¹¹ of dogs with CAD and a concomitant flea infestation causing lesions on these sites (despite a rigorous antiparasitic treatment as an exclusion criterion).

In spite of the high percentage of pruritus observed on the pinnae, this site was not considered as suggestive for

any of the three dermatoses, and no statistical difference was observed among the three dermatoses.

Some combinations of a location and manifestation(s) of pruritus also seemed able to differentiate among the three dermatoses because, despite moderate sensitivities, they had a very high specificity. In CAD, the combination of rubbing on the face/neck was highly specific (99%) but with low sensitivity (12%), chewing on paws (sensitivity, 57%; specificity, 81%), licking of paws (sensitivity, 49%; specificity, 91%) and chewing and licking of paws (sensitivity, 25%; specificity, 97%). In FBH, chewing on the back/dorsolumbar area had a specificity of 88% with a sensitivity of 63%. In FI, chewing of the ventral abdomen/medial thigh had a high specificity (88%) but a moderate sensitivity (32%), while chewing of the radius/carpus/tibia/tarsus area had a specificity of 96% and sensitivity of 13%.

The choice of IDT reactivity with a flea extract as a criterion for inclusion or exclusion of the FBH and FI group in this study needs to be considered. In the FBH group, the use of a strongly positive reaction to flea allergen as the only criterion of inclusion, without typical lesions on typical locations, could decrease the accuracy of the diagnosis for dogs included in this study. In fact, normal dogs could have a positive reaction.^{12–14} Previous studies observing positive immediate intradermal flea antigen reactivity in normal dogs reported a percentage of 19–39%. However, in one of these studies, only dogs with FBH had a strongly positive reaction to flea antigen.¹³ Thus, in our study, the combination of positive reaction to flea allergen and strength of the reaction limited the inclusion of false positives as FBH cases. Moreover, only seven dogs were included on this criterion alone. In contrast, 33–73% of dogs with clinical FBH can be negative to IDT using a commercial whole-body flea extract.¹⁵

It remains difficult to propose simple explanations for the differences in the location of pruritus between FBH and FI. More studies are needed to evaluate possible variations of sensitivity of various skin areas in FBH as observed in the distribution of lesions in CAD. Indeed, in CAD, regardless of the routes of exposure to allergens (inhalation, ingestion or transcutaneous), the lesions always occur in the same locations (face, feet, ears and ventral abdomen).¹⁶

Primary pruritus is a very common clinical situation, for which no simple or single diagnostic tool is currently available. The results, with statistical differences associated with high specificity, obtained in this study could be used

Table 5. Key points for pruritus observed in cases with FI, FBH and CAD

FI	FBH	CAD
Primary (64%) or secondary (14%) pruritus	Primary pruritus (81%)	Primary pruritus (84%)
Pinnal pedal reflex: rare (4%)	Pinnal pedal reflex: rare (1%)	Pinnal pedal reflex: rare (6%)
Low or medium intensity (60% of cases)	High intensity (>60% of cases)	High intensity (>60% of cases)
Low or medium frequency (>60% of cases)	High frequency (>50% of cases)	High frequency (>50% of cases)
Pruritus of ventral abdomen/medial face or thigh (especially chewing)	Pruritus of dorsum/dorsolumbar area (especially chewing)	Pruritus for paws (chewing and/or licking)
Pruritus of radius/carpus/tibia/tarsus (especially chewing)	Pruritus of tail (especially chewing)	Rubbing of face/neck
		Absence of primary pruritus on tail
		Absence of primary pruritus on the lateral and caudal sides of thigh
		Absence of primary pruritus on radius/carpus/tibia/tarsus

as key points during consultation. To the best of authors' knowledge, there was no information available in the veterinary literature about the characterization of pruritus. This study shows that important information can be obtained from a closer characterization of the pruritus, potentially with direct consequences for the diagnostic methods employed when attempting to determine the aetiologies involved.

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Résumé

Contexte – Chez le chien, l'infestation par les puces (FI), l'hypersensibilité aux piqûres de puces (FBH) et la dermatite atopique canine (DAC) ont été principalement caractérisées par leurs lésions mais jamais par leur prurit. En pratique clinique, nombreux sont les chiens qui ne manifestent que du prurit.

Hypothèses/objectifs – Le but de cette étude était d'évaluer les caractéristiques du prurit de ces dermatoses et leur utilité potentielle pour le diagnostic.

Sujets – Les chiens inclus ont été choisis à partir des données cliniques d'Oniris. Les cas ont été recrutés parmi ceux qui présentaient au moins une des trois dermatoses diagnostiquées. Le diagnostic de CAD reposait sur les critères de Prélud et les tests intradermiques à l'exception des puces ; le diagnostic de FBH reposait sur les signes cliniques compatibles et une réponse aux allergènes de puce ; enfin, le diagnostic de FI reposait sur la présence de puces. En outre, dans chaque groupe, toute autre dermatose prurigineuse primaire a été exclue.

Méthodes – La localisation, les manifestations comportementales, la saisonnalité et la quantification du prurit ont été évaluées. Les analyses statistiques ont utilisé un test de chi-deux avec une *P*-value <0.05.

Résultats – Trois cent quarante six chiens ont été analysés, 91 avec une CAD, 110 avec une FI et 145 avec une FBH. La période (saison) d'apparition n'était pas statistiquement différente pour chaque dermatose ou parmi les trois dermatoses. Certaines localisations étaient hautement spécifiques pour une des dermatoses telles que : abdomen ventral/ surface médiale des cuisses (mordillements) et du radius/carpe/tibia/tarse dans la FI ; dos/zone dorso-lombaire (mordillements) et queue dans la FBH ; coussinets (mordillements/léchage) et face/cou (grattage) dans la CAD.

Conclusions et importance clinique – Certaines caractéristiques du prurit pourraient suggérer la cause de la maladie avec une possible valeur diagnostique chez les chiens prurigineux.

Resumen

Introducción – en perros, la infestación por pulgas (FI), la hipersensibilidad a la picadura de la pulga (FBH) y la dermatitis atópica (CAD) han sido caracterizadas principalmente por sus lesiones pero nunca por su nivel de prurito. En la práctica clínica, muchos de estos perros exhiben solamente prurito.

Hipótesis/objectivos – el propósito de este estudio era evaluar las características del prurito en estas dermatosis y de su utilidad potencial para el diagnóstico.

Animales – los perros incluidos fueron seleccionados de los datos clínicos de Oniris. Se seleccionaron casos en los cuales los perros tenían solamente uno de las tres dermatosis diagnosticadas. El diagnóstico de

CAD se basó en los criterios de Prélaid y las pruebas intradérmicas positivas con excepción de las pulgas; para el diagnóstico de FBH nos basamos en signos clínicos compatibles y la respuesta al alérgeno de las pulgas; y para el diagnóstico de FI nos basamos en la presencia de pulgas. Por otra parte, en cada grupo, se excluyeron otras enfermedades pruríticas primarias de la piel.

Métodos – se evaluaron la localización, las manifestaciones comportamentales, la estacionalidad y la cuantificación del prurito. El análisis estadístico utilizó la prueba chi-cuadrado con un valor de $P < 0,05$.

Resultados – se analizaron trescientos cuarenta y seis perros, 91 con CAD, 110 con FI y 145 con FBH. El período (estación) de inicio no fue estadísticamente diferente para cada dermatosis o entre las tres dermatosis. Algunas localizaciones fueron altamente específicas para una dermatosis según se indica: vientre/superficie interna del muslo (morderse) y radio/carpo/tibia/tarso (morderse) en FI; área dorsolumbar/espalda (morderse) y cola (morderse) en FBH; y garras (morderse/lamerse) y cara/cuello (frotarse) en el CAD.

Conclusiones e importancia clínica – algunas características del prurito podrían ser sugestivas de la enfermedad causal, con posible valor diagnóstico en perros pruríticos.

Zusammenfassung

Hintergrund – Bei Hunden wurden Flohbefall (FI), Flohbisshypersensibilität (FBH) und die canine atopische Dermatitis (CAD) hauptsächlich durch ihre Hautveränderungen, jedoch niemals durch ihren Juckreiz charakterisiert. In der klinischen Praxis zeigen viele dieser Hunde nur Juckreiz.

Hypothese/Ziele – Das Ziel dieser Studie war es, die Charakteristika des Pruritus bei diesen Dermatosen und ihren möglichen Nutzen bei der Diagnose zu evaluieren.

Tiere – Die verwendeten Hunde wurden von den klinischen Oniris Daten ausgewählt. Es wurden Fälle ausgewählt, bei denen die Hunde nur mit einer der drei Dermatosen diagnostiziert worden waren. Die Diagnose der CAD basierte auf Prélaid's Kriterien und einem positiven Intradermaltest ohne Floh; die FBH wurde durch kompatible klinischen Zeichen und eine Reaktion auf Flohallergen diagnostiziert und für FI war das Vorkommen von Flöhen ausschlaggebend. Darüber hinaus wurden in jeder Gruppe andere primäre juckende Hauterkrankungen ausgeschlossen.

Methoden – Es wurden die Lokalisation, die Manifestationsweisen, die Saisonalität und die Quantifizierung des Pruritus evaluiert. In der statistischen Analyse wurde der Chi-squared Test mit einem P -Wert von $< 0,05$ verwendet.

Ergebnisse – Es wurden 346 Hunde analysiert, 91 mit CAD, 110 mit FI und 145 mit FBH. Der Zeitpunkt (Saisonalität) des Beginns der Erkrankung war weder für eine einzelne Dermatoase, noch für alle drei Erkrankungen im Vergleich statistisch signifikant. Manche Lokalisationen waren sehr spezifisch für eine einzelne Dermatoase und werden im Folgenden aufgeführt: ventrales Abdomen/mediale Oberfläche der Oberschenkel (benagen) und Radius/Karpus/Tibia/Tarsus (benagen) bei FI; Rücken/dorsolumbare Gegend (benagen) und Schwanz (benagen) bei FBH; und Pfoten (benagen /lecken) und Gesicht/Hals (reiben) bei CAD.

Schlussfolgerung und klinische Bedeutung – einige Merkmale des Pruritus sind auf die Ursache der Erkrankung hinweisend und bei juckenden Hunden diagnostisch möglicherweise wertvoll.

要約

背景 – 犬において、ノミ寄生 (FI)、ノミ刺傷過敏症 (FBH) と犬アトピー性皮膚炎 (CAD) は主にそれらの病変は特徴を有するが、痒みには特徴はない。臨床の現場では、これらの犬の多くが痒みだけを示す。

仮説/目的 – この研究の目的はこれらの皮膚疾患における痒みの特徴とそれを診断に応用できる可能性を評価することである。

供与動物 – Oniris 臨床データベースから犬を選択した。選択症例は3つの皮膚疾患のうち1つのみ診断されたものであった。CAD の診断は Prélaid の基準に基づき、皮内試験でノミ以外が陽性であること; FBH では矛盾のない臨床症状とノミアレルゲンへの反応; FIではノミの有無。さらに、それぞれの群で、他の原発性痒痒性皮膚疾患を除外した。

方法 – 発症部位、行動的な兆候、季節性、定量化した痒痒を評価した。統計学的な解析はカイ二乗検定を P -value < 0.05 で使用した。

結果 – 346 頭の犬が選択され、そのうちアトピー性皮膚炎は91頭、FI は 110 頭および FBH は 145 頭であり、それらを解析した。発症期間 (季節) はそれぞれの皮膚疾患や 3 つの皮膚疾患間で統計学的に差はなかった。いくつかの発症部位は以下のようにそれぞれの皮膚病疾患で非常に特徴的であった; FI では腹部腹側/大腿部 (咬む) と橈骨の内側/手根骨/脛骨/足根 (咬む), FBH では背部/腰背部 (咬む) と尾 (咬む) で、CADでは肢端 (咬む/舐める) と顔面/頸部 (擦る)。

結論と臨床的な重要性 – , 痒痒を示す犬では、痒痒の特徴は原因疾患を示唆することがあり、診断的な価値を有する可能性がある。

摘要

背景 - 临床中犬的跳蚤感染 (FI)，跳蚤叮咬过敏 (FBH) 和犬异位性皮炎 (CAD) 主要以病变为诊断特征，而不是瘙痒。但是许多患犬表现的症状只有瘙痒。

假设/目的 - 这篇研究的目的是评估这些皮肤病的瘙痒特征，及其对诊断潜在的帮助。

动物 - 从 Oniris 临床资料中挑选犬。挑选诊断为三者仅有一一的患犬病例。诊断 CAD 基于 Prélard's 标准和除跳蚤外的皮内试验阳性；诊断 FBH 通过临床症状和跳蚤过敏原反应；诊断 FI 通过发现跳蚤。此外，每组都排除其他原发瘙痒性皮肤病。

方法 - 评估位置，临床行为表现，季节性和量化瘙痒。卡方试验统计分析， $P < 0.05$ 。

结果 - 分析 346 只犬，91 只患 CAD，110 只患 FI，145 只患 FBH。起始阶段（季节）的发病在每种皮肤病或三种皮肤病间没有显著差异。在一种皮肤病中一些位置具有特异性：FI 为腹侧/大腿内侧的表面（啃咬）和桡骨/腕骨/胫骨/跗骨（啃咬）；FBH 为腰背部（啃咬）和尾（啃咬）；CAD 为爪部（啃咬/舔舐）和面/颈部（摩擦）。

结论和临床价值 - 有些瘙痒特征能提示疾病的原因，对于瘙痒犬具有诊断价值。