

## PSORIASIFORM-LICHENOID-LIKE DERMATOSIS DUE TO STAPHYLOCOCCAL INFECTION IN A SHIH TZU DOG

*Psoriasiform-lichenoidachtige dermatosis door een stafylokokkeninfectie bij een Shih Tzu hond*

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### SUMMARY

**A 19-month-old, male Shih Tzu dog was examined for psoriasiform lesions on the concave aspect of both ear pinnae. On histopathology a band-like superficial dermatitis with lympho-plasmacytic infiltrate was observed. A coagulase-positive hemolytic *Staphylococcus* (*S. intermedius*) was isolated from the skin lesions. Treatment with cephalexin resulted in complete resolution of the lesions. This case showed similarities with the psoriasiform lichenoid dermatitis in English Springer Spaniels.**

### SAMENVATTING

Een mannelijke Shih Tzu hond van 19 maanden werd onderzocht wegens psoriasiforme letsels op de concave zijde van beide oorschelpen. Een bandvormige, oppervlakkige dermatitis met lymfoplasmacytair celfiltraat werd op histopathologisch onderzoek aangetoond. Een coagulase positieve hemolytische *Staphylococcus* (*S. intermedius*) werd geïsoleerd uit de huidletsels. Een behandeling met cefalexine toonde een complete remissie van de letsels. Dit geval toont gelijkenissen met de psoriasiforme lichenoid dermatitis bij Engelse Springer Spaniels.

### INTRODUCTION

Psoriasiform lesions are erythematous scaling papules that may coalesce to form plaques, as seen in psoriasis in man. Histologically there is epidermal hyperplasia, which is characterized by accentuated, elongated rete ridges (Christophers *et al.*, 1987).

Lichenoid tissue reaction characterizes a band-like infiltrate of cells in the upper dermis, which often obscures the dermal-epidermal junction (Gross *et al.*, 1986). Lichenoid dermatosis is a rare, usually idiopathic skin disorder of dogs and cats (Scott, 1984; Scott, 1995; Scott *et al.*, 2000). It is characterized by asymptomatic, symmetric, erythematous, scaly to hyperkeratotic, flat topped papules (Scott, 1984). The cause and pathogenesis of most of these dermatoses are unclear (Scott *et al.*, 2000). However, a lichenoid tissue reaction in response to staphylococcal infection has been described (Scott, 1984).

A psoriasiform lichenoid dermatosis has been described in English Springer Spaniels. The dermatosis affects young Springer Spaniels (4 to 18 months) and

manifests as asymptomatic, generally symmetric, erythematous, lichenoid papules and plaques initially noted on the pinnae, in the external ear canal, and in the inguinal region. With time, the lesions become increasingly hyperkeratotic and spread to involve the face, ventral trunk, and perineal area (Gross *et al.*, 1986; Mason *et al.*, 1986; Burrows *et al.*, 1994; Scott *et al.*, 2000).

This paper describes clinical and histopathological features that are both psoriasiform and lichenoid and show similarities with the psoriasiform lichenoid dermatosis of English Springer Spaniel dogs.

### CASE REPORT

A 19-month-old entire male ShihTzu weighing 8.6 kg was presented with gradual onset of crusting lesions on the ear pinnae without pruritus. Over a period of four months, various topical medicaments containing a combination of antimicrobials and glucocorticosteroids led to only marginal improvement. Worse-

ning of the lesions followed administration of oral prednisolone at 1.2 mg/kg once daily for 14 days. A littermate living in the same household was not affected.

On physical examination the dog was in good health, alert and responsive. The lesions were restricted to the concave aspects of both ear pinnae; no abnormalities were seen on physical examination of both ear canals. The lesions consisted of psoriasiform erythematous papules and plaques, many of which were annular in configuration and covered with a thick brown/yellow crust (Figs. 1 and 2). No ectoparasites or dermatophytes were detected on microscopical examination of skin scrapings and plucked hairs. Dermatophyte culture of crusts was negative after 3 weeks inoculation on Sabouraud's dextrose agar. A heavy growth of a coagulase-positive haemolytic *Staphylococcus* (*S. intermedius*) and a sparse growth of *Malassezia pachydermatis* were obtained from one of the plaques. The *Staphylococcus* was sensitive to cephalixin. Routine hematology, blood biochemistry and

urinalysis were all within normal limits. The histopathology of excisional skin biopsies revealed hyperkeratosis with acanthosis of the epithelium. There was a dense interface mononuclear (lymphocytic and plasma cell) infiltrate but the basal layers did not have hydropic degeneration. The epithelial changes continued down the follicular external root sheath. No mites, bacteria, yeasts or dermatophytes were seen. These findings were consistent with a band-like superficial dermatitis with lympho-plasmacytic infiltrate (Figs. 3 and 4).

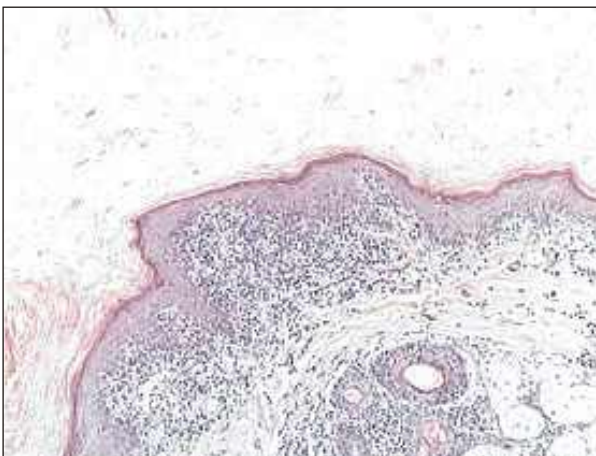
A presumptive diagnosis of psoriasiform-lichenoid-like dermatosis was made. All topical medication was stopped and the dog was treated with oral cephalixin (Ceporex, Shering-Plough Animal Health) at 15 mg/kg twice daily. After two weeks of cephalixin treatment there was a marked improvement of the lesions. Another 3 weeks of treatment showed a complete resolution of the lesions and the cephalixin was discontinued. Three years after the treatment was stopped, no recurrence has occurred.



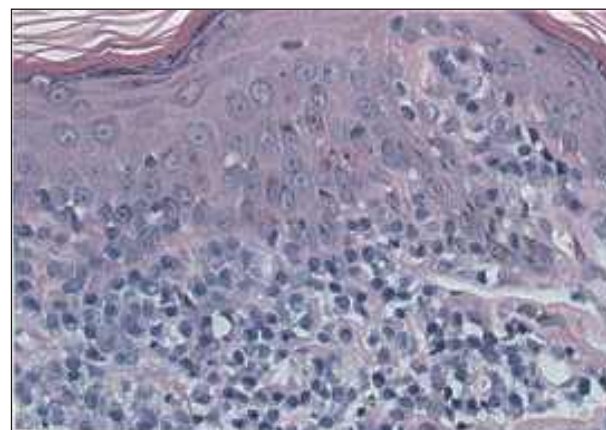
**Fig 1.** Psoriasiform crusting lesions on concave aspect of left ear pinna.



**Fig 2.** Same ear pinna after removing the crusts. Psoriasiform-lichenoid skin lesions.



**Fig 3.** Dense interface infiltrate and acanthosis of the epithelium (H&E, x100).



**Fig 4.** Band-like superficial dermatitis with lympho-plasmacytic infiltrate (H&E, x400).

## DISCUSSION

The asymptomatic, symmetric, erythematous, psoriasiform papules and plaques on the pinnae in this young dog showed similarities with the lichenoid psoriasiform dermatosis described in English Springer Spaniels. The lichenoid interface dermatitis seen on histopathology in this case can also be seen with various autoimmune disorders, epitheliotrophic lymphoma, toxic epidermal necrolysis, idiopathic lichenoid dermatosis (Scott, 1984; Scott, 1986), lichenoid keratoses (Anderson *et al.*, 1989) and mucocutaneous pyoderma (Ihrke *et al.*, 1995). The psoriasiform epidermal hyperplasia and lichenoid dermatitis were identical to those found in psoriasiform lichenoid dermatitis in Springer Spaniels. However, intraepidermal microabscesses and Munro's microabscesses were not present on histopathology. Four cases of lichenoid psoriasiform dermatosis in English Springer Spaniels treated with cephalexin showed an excellent response with complete resolution of lesions (Burrows *et al.*, 1994). It was proposed that affected Springer Spaniels develop a distinct and probably genetically programmed response to a superficial staphylococcal infection (Burrows *et al.*, 1994). A similar lichenoid tissue reaction in response to a staphylococcal infection was suspected in this case. Psoriasiform lichenoid dermatosis has been described in other breeds. Werner (2003) described three dogs of different breeds treated with microemulsified cyclosporine A that developed an antibiotic-responsive psoriasiform lichenoid dermatitis. A staphylococcal infection was suspected and all three cases responded to antibiotic treatment. Studies in human psoriasis have shown the potential of bacterial superantigens to trigger psoriasiform dermatitis (Boehncke *et al.*, 1997). In our case, the rapid resolution of the skin lesions during antibiotic therapy would be more consistent with staphylococcal infection than with spontaneous resolution of the lesions.

This report is of interest because it shows that other breeds can be affected by this condition. It is important to recognize psoriasiform lichenoid-like dermatosis as a clinical and histopathological reaction pattern, not as a definitive diagnosis. The search for trigger factors, such as the atypical staphylococcal infection in this case, is

essential for understanding the etiology and enabling investigation of the pathogenesis.

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## REFERENCES

- Anderson W.I., Scott D.W. (1989). Idiopathic benign lichenoid keratosis on the pinna of the ear in dogs. *Cornell Veterinarian* 2, 179-184.
- Boehncke W.H., Zollner T.M., Dressel D., Kaufmann R. (1997). Induction of psoriasiform inflammation by a bacterial superantigen in the SCID-hu xenogenetic transplantation model. *Journal of Cutaneous Pathology* 24, 1-7.
- Burrows A., Mason K.V. (1994). Observations of the pathogenesis and treatment of lichenoid-psoriasiform dermatoses. In: *Proceedings of the Annual Members' Meeting of the American Academy of Veterinary Dermatology and American College of Veterinary Dermatology* 10, 81.
- Christophers E., Krueger G.G. (1987). *Dermatology in General Medicine*, 3rd ed., New York: McGraw-Hill, 461-491.
- Gross T.L., Halliwell R.E., McDougal B.J., Rosencrantz, W.S. (1986). Psoriasiform lichenoid dermatitis in the Springer Spaniel. *Veterinary Pathology* 23, 76-78.
- Ihrke P.J., Gross T.L. (1995). *Current Veterinary Therapy XII*, W.B. Saunders, Co., 618-619.
- Mason K.V., Halliwell R.E., McDougal B.J. (1986). Characterization of lichenoid psoriasiform dermatosis of Springer Spaniels. *Journal of the American Veterinary Medical Association* 189, 897-901.
- Scott D.W. (1984). Lichenoid reactions in the skin of dogs: Clinicopathologic correlations. *Journal of the American Animal Hospital Association* 20, 305-317.
- Scott D.W. (1986). Idiopathic lichenoid dermatitis in a dog. *Canine Practice* 11, 22-25.
- Scott D.W. (1995). *Current Veterinary Therapy XII*, W.B. Saunders, Co. 614-615.
- Scott D.W., Miller W.H., Griffin C.E. (2000). *Muller and Kirk's Small Animal Dermatology*, 6<sup>th</sup> ed., Philadelphia: W.B. Saunders, 1130-1132.
- Werner A.H. (2003). Psoriasiform-lichenoid-like dermatosis in three dogs treated with microemulsified cyclosporine A. *Journal of the American Veterinary Medical Association* 223, 1013-1016.