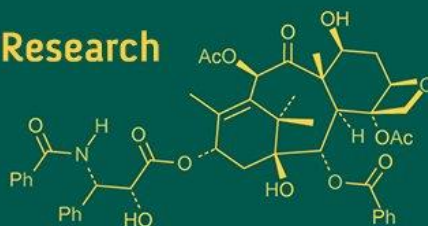


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Therapeutic management of generalized canine Demodicosis with Simparica® (Sarolaner): A case report

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Abstract

A young male dog was presented to the Teaching Veterinary Clinical Complex, DSVCKV, Anjora, Durg, with a history of progressive hair loss, erythema, scaling, crusting and itching for approximately one month. Dermatological examination revealed multifocal to generalized alopecia, erythematous skin lesions, follicular casts, crusts and mild secondary pyoderma, mainly involving the periocular region, muzzle, forelimbs, ventral abdomen and trunk. Deep skin scrapings were collected from multiple active lesions and examined microscopically after processing with liquid paraffin. Numerous cigar-shaped mites consistent with *Demodex canis* were observed, confirming generalized canine demodicosis. Haematological examination revealed mild anaemia and neutrophilic leukocytosis, suggestive of chronic inflammatory dermatitis with secondary bacterial involvement. The dog was treated with oral Simparica® containing sarolaner as the primary acaricidal therapy, along with systemic antibiotic support, antihistaminic medication, medicated bathing and nutritional supplementation. Marked reduction in pruritus and erythema was observed by day 14, while hair regrowth and clinical improvement were evident by day 28. Repeat deep skin scraping on day 56 was negative for live mites. The present case highlights the importance of early diagnosis by deep skin scraping and integrated therapeutic management for successful recovery in generalized canine demodicosis.

Keywords: Canine demodicosis, *Demodex canis*, dog, deep skin scraping, alopecia, Simparica, sarolaner, pyoderma, case report

Introduction

Canine demodicosis is a common parasitic skin disease of dogs caused by excessive proliferation of *Demodex* mites, most commonly *Demodex canis*. These mites normally inhabit hair follicles and sebaceous glands in small numbers, but clinical disease occurs when mite multiplication increases due to immature immunity, genetic predisposition, malnutrition, stress or underlying immunosuppression.

The disease may occur in localized or generalized form. Localized demodicosis is usually mild and may resolve spontaneously, especially in young animals. Generalized demodicosis is more severe and is characterized by widespread alopecia, erythema, scaling, crusting, follicular plugging, secondary bacterial infection and sometimes systemic illness. Adult-onset generalized demodicosis may be associated with underlying systemic diseases such as endocrinopathies, neoplasia or long-term corticosteroid administration.

Diagnosis is confirmed by demonstration of mites or their developmental stages in deep skin scrapings, hair pluck examination or skin biopsy in difficult cases. The present case report describes the diagnosis and therapeutic management of generalized demodicosis in a dog.

Case History

A young male dog, approximately eight months old and weighing 16 kg, was presented to the Teaching Veterinary Clinical Complex, DSVCKV, Anjora, Durg, with a history of progressive hair loss, redness of skin, scaling, crusting and itching for the past one month. The owner reported that the lesions initially appeared around the eyes and muzzle and gradually extended to the forelimbs, ventral abdomen and trunk. The dog had reduced appetite and dullness for the past few days. No previous complete acaricidal treatment had been given.

Clinical Examination

On general clinical examination, the dog was dull but responsive. Rectal temperature was 102.5 °F, heart rate was 104 beats/minute and respiratory rate was 34 breaths/minute. Mucous membranes were pale pink. Dermatological examination revealed multifocal to

generalized alopecia, erythema, scaling, crusting, follicular casts and comedones. Lesions were more prominent around the periocular region, muzzle, forelimbs, ventral abdomen and trunk. Mild pustules and epidermal collarettes suggested secondary bacterial pyoderma.



Fig 1: Dog affected with generalized demodicosis showing alopecia, erythema and greyish scaling over the head, neck and shoulder region before treatment.



Fig 2: Clinical view of affected dog showing hair loss and scaly dermatitis over the head, neck and dorsal body region before treatment.

Diagnostic Examination

Deep skin scrapings were collected from five active lesion sites, including periocular region, muzzle, forelimb, abdomen and trunk. The affected skin was squeezed gently to extrude follicular mites, and scraping was continued until mild capillary oozing was observed. Samples were placed

on glass slides with liquid paraffin and examined under low-power microscopy.

Microscopic examination revealed numerous elongated, cigar-shaped mites with short legs, morphologically consistent with *Demodex canis*. Adult mites, immature stages and eggs were observed, confirming active demodectic infestation.



Fig 3: Representative microscopic appearance of *Demodex canis* mite observed in deep skin scraping examination.

Skin cytology from pustular lesions revealed neutrophils and cocci, indicating secondary bacterial pyoderma.

Haematological examination showed mild anaemia and neutrophilic leukocytosis.

Table 1: Clinical observations recorded in the affected dog

Parameter	Observation
Species	Dog
Age	Approximately 8 months
Sex	Male
Body weight	16 kg
Duration of illness	Approximately 1 month
Main complaint	Hair loss, redness, scaling, crusting and itching
Lesion distribution	Periocular region, muzzle, forelimbs, abdomen and trunk
Skin changes	Alopecia, erythema, scaling, crusting, follicular casts and comedones
Secondary complication	Mild bacterial pyoderma
Diagnostic test	Deep skin scraping and skin cytology
Confirmatory finding	Adult and immature stages of <i>Demodex canis</i>
Final diagnosis	Generalized canine demodicosis

Table 2: Haematological findings before treatment

Parameter	Value	Interpretation
Haemoglobin	10.4 g/dl	Mild anaemia
PCV	32%	Mild reduction
TLC	$16.8 \times 10^3/\mu\text{l}$	Leukocytosis
Neutrophils	82%	Neutrophilia
Lymphocytes	14%	Relative lymphopenia
Eosinophils	2%	Within normal range
Platelets	$3.10 \times 10^5/\mu\text{l}$	Normal

Treatment

The dog was treated with oral Simparica® chewable tablet containing sarolaner at the recommended therapeutic dose according to body weight as the primary acaricidal therapy. The owner was advised to administer the drug once monthly and to return for regular clinical and parasitological follow-up.

For secondary bacterial pyoderma, amoxicillin-clavulanate was administered at 12.5 mg/kg body weight orally twice daily for 14 days. Chlorpheniramine maleate was given as antihistaminic support for pruritus. Medicated bathing with

chlorhexidine and benzoyl peroxide shampoo was advised twice weekly to reduce bacterial load, remove follicular debris and improve skin hygiene.

Supportive treatment included omega fatty acid supplementation, multivitamin-mineral preparation and nutritional correction. The owner was advised to avoid corticosteroids, maintain regular bathing, improve diet and return for follow-up examination at 14, 28 and 56 days.

Follow-up and Results

By day 14, pruritus and erythema were markedly reduced. Crusting and scaling had decreased, and the dog showed improvement in appetite and activity. By day 28, visible hair regrowth was observed in periocular and abdominal regions. Pustules and epidermal collarettes had resolved.

Repeat deep skin scraping on day 28 showed marked reduction in mite count. On day 56, deep skin scrapings from multiple sites were negative for live mites. The skin showed good hair regrowth and clinical recovery. No adverse effects were observed during the treatment period.

Table 3: Therapeutic response during follow-up

Parameter	Day 0	Day 14	Day 28	Day 56
Pruritus	Moderate	Mild	Minimal	Absent
Erythema	Marked	Reduced	Mild	Absent
Scaling/crusting	Marked	Moderate	Mild	Absent
Alopecia	Generalized	Present	Hair regrowth started	Marked hair regrowth
Pyoderma	Present	Reduced	Resolved	Resolved
Mite count in scraping	Numerous mites	Reduced	Few dead/occasional mites	Negative
General condition	Dull	Improved	Active	Normal

Table 4: Physiological parameters before and after treatment

Parameter	Before treatment	After treatment
Temperature	102.5 °F	101.4 °F
Heart rate	104 beats/min	86 beats/min
Respiratory rate	34/min	24/min

**Fig 4:** Dog after treatment showing marked clinical improvement with hair regrowth and reduction of alopecia, erythema and scaling.

Discussion

Canine demodicosis is an important dermatological condition in dogs and may be localized or generalized. In the present case, widespread involvement of the periocular region, muzzle, forelimbs, abdomen and trunk confirmed generalized disease. The clinical signs observed, including alopecia, erythema, scaling, crusting, follicular casts and secondary pyoderma, are characteristic of generalized demodicosis.

Deep skin scraping remains the most practical and reliable diagnostic method. In the present case, demonstration of adult mites, immature stages and eggs in deep skin scrapings confirmed active *Demodex canis* infestation. Skin cytology was also useful in identifying secondary bacterial pyoderma, which is commonly associated with generalized demodicosis.

The therapeutic response observed in the present case was satisfactory. Simparica® containing sarolaner was selected as the primary miticidal therapy because sarolaner belongs to the isoxazoline group and has been reported to be safe and highly effective in the treatment of generalized demodicosis in dogs. Reduction in pruritus and erythema by day 14 and negative skin scraping by day 56 indicated good clinical and parasitological recovery. The once-monthly oral administration also improved owner compliance compared with repeated topical applications or older treatment protocols.

Secondary bacterial infection was controlled with systemic antibiotic therapy and medicated bathing. Benzoyl peroxide is useful due to its follicular flushing activity, while chlorhexidine helps in controlling bacterial load. Supportive nutritional therapy was included to improve skin repair and immune response.

The present case emphasizes that generalized demodicosis should not be treated only as a mite infestation. Successful management requires miticidal therapy, control of secondary pyoderma, nutritional support, owner compliance and repeat skin scraping until parasitological cure is achieved.

Conclusion

The present case confirms that generalized canine demodicosis should be suspected in dogs showing progressive alopecia, erythema, scaling, crusting and follicular casts, especially when lesions involve the face, limbs and trunk. Deep skin scraping is an effective diagnostic method for confirmation. Oral Simparica® containing sarolaner, along with systemic antibiotic therapy, medicated bathing and supportive care, resulted in successful clinical and parasitological recovery. Regular follow-up and repeat skin scraping are essential to prevent relapse and ensure complete cure.

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Ethical Statement

The present report is based on routine clinical examination and therapeutic management of a naturally affected dog. No experimental procedure was performed. Owner consent

should be obtained before final journal submission wherever clinical photographs are used.

Conflict of Interest

The authors declare no conflict of interest.

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