

# Skin Diseases in Horses

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## KEYWORDS

• Equine • Skin • Dermatitis • Alopecia • Biopsy

## KEY POINTS

- Many skin lesions may require biopsy to definitively diagnose.
- Many skin lesions of horses are characterized by the formation of dermal nodular masses.
- Despite the frequency with which sarcoids are diagnosed, understanding of the development of sarcoids remains incomplete.

## INTRODUCTION

Skin disease in horses is a common and potentially challenging clinical problem. Information pertaining to skin disease is lacking in horses when compared with that in other companion animal species. Certainly, both horse-specific and location-specific patterns are present, but these can often be confounded by other factors. There are many possible ways in which to organize skin disease; in this article, they are organized based loosely on their most common clinical feature (**Table 1**). Space limits the number of conditions that can be described here, and those chosen were seen relatively frequently in a multiinstitutional study of equine biopsies.<sup>1,2</sup>

## USEFUL DIAGNOSTIC TECHNIQUES

### *Skin Scrapings*

Skin scrapings, although common in smaller companion animals, are often less useful in horses. Superficial scrapings may have limited results, whereas deeper skin scrapings may be useful for *Demodex equi* and *Rhabditis strongyloides*. Deep skin scrapings are done by squeezing the skin between the fingers, adding a drop of oil to the skin, and then using a scalpel to scrape across the skin. The collected material can then be examined on a microscopic slide. Scraping of the skin until capillary bleeding occurs increases the sensitivity of the test.

### *Acetate Tape Impressions*

Given the relatively low sensitivity of superficial skin scrapings, a simple alternative is the use of acetate tape. Clear tape when pressed to the skin of horses can collect

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<b>Nodular</b>	<b>Ulcerative</b>	<b>Alopecic</b>	<b>Scaling</b>
Sarcoid	Squamous cell carcinoma	Atopy	Dermatophytosis
Eosinophilic granuloma	Exuberant granulation tissue	Alopecia areata	Pemphigus foliaceus
Fungal Granulomas	Habronemiasis	Anagen/telogen effluvium	Dermatophilus
Cutaneous lymphoma	—	MEED	—
Mast cell tumors	—	—	—

surface debris and crusts. Clipping the skin is often useful for increasing material collection. Examples of pathogens detectable by this method are *Chorioptes bovis*, *Dermatophytosis gallinae*, *Trombicula* (chigger mites), *Oxyuris equi*, and dermatophytes.

### **Hair Plucking**

Useful information can be attained by microscopic examination of plucked hairs. Examination of the root of the hair can determine whether hairs are in the anagen or telogen stage of growth. Anagen hair bulbs are smooth and rounded, whereas telogen hair bulbs are rough and more pointed or irregular. Typically, hairs plucked should be a mixture of telogen and anagen.

Examination of the hair shaft can likewise be useful. Twisted or misshapen and irregular hair shafts suggest an underlying nutritional disorder. Fractured or clearly split hair shafts imply excessive grooming or self-trauma and are a good indicator of pruritus.

### **Fine-Needle Aspiration**

Unlike dogs and cats, fine-needle aspiration (FNA) is sparingly used in equine skin lesions. The usefulness of this technique seems to be primarily in the diagnosis of nodular skin lesions. Some masses such as sarcoids may exfoliate poorly, whereas the presence of neutrophils and eosinophils may be helpful in diagnosing inflammatory lesions. FNA can be quite useful in the diagnosis of mast cell tumors.

### **Biopsy**

Many skin lesions may require biopsy to definitively diagnose. Hints to improve biopsy success are included in **Box 1**. Biopsy should be performed if neoplasia is suspected, ulceration is persistent, treatment is unsuccessful, and lesions are spreading rapidly or the lesion is impairing the use of the animal.

Sampling the center of a skin lesion is important as biopsies from transitional zones between normal and affected skin may miss the lesion when sectioned for histologic processing. Inclusion of scale and crusts from lesion is vital because important diagnostic clues are present within the crusts in many lesions. As such, minimal sample site preparation is important so as not to disturb these superficial changes.

## **NODULAR SKIN DISEASES**

Many skin lesions of horses are characterized by the formation of dermal nodular masses. The nature of these masses may vary from condition to condition, but

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