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Staphylococcal folliculitis in a horse: A report

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Abstract

Staphylococcal bacterial infections are more common in equine practice. It causes infectious folliculitis particularly in summer. This is often due to poor hygienic practices by the farmers. Coagulase positive *Staphylococcus aureus* is the causative organism. A 8 year old, Kathiawari breed stallion presented with pruritus, self mutilated injury, alopecia over the nasal planum, periocular region, muzzle, mucocutaneous alopecia on the oral commissures over past 10 days. Direct impression smears showed abundant neutrophils with intracellular and extracellular cocci. Microbiological culture, isolation and biochemical examination confirmed the *Staphylococcus aureus* infection. The animal was treated with parenteral enrofloxacin and topical ofloxacin lotion for a period of 15 days. There was an uneventful recovery after 15 days of therapy. The owner was advised to practice hygienic practices. Unclean tack, rugs and poor grooming during hot and humid summer month was the reason for it. They were well treated with parenteral and topical quinolone group drugs.

Keywords: Staphylococcal folliculitis, horse, *Staphylococcus aureus*

Introduction

Bacterial infections are more common in dermatologic issues on veterinary practice. Staphylococci are common commensal bacterias of equine skin but are also important opportunistic pathogens. *Staphylococcus aureus* being the most common cause of staphylococcal disease in horses [1], despite *S. hyicus* and *S. pseudintermedius* have also been identified as equine pathogens [2]. Numerous different coagulase-negative staphylococci can be found in or on horses [1]. Staphylococci are opportunistic pathogens, and primary staphylococcal skin disease occurs rarely. Staphylococcal infection generally follows other skin trauma and/or systemic disease and may present as folliculitis, furunculosis or cellulitis [2]. Folliculitis have intact pustule, papule, or crusted papular lesion at the base of the hair and exhibit a 'goose bump' appearance. It is most common among fine-skinned breeds of horses (Thoroughbred, Standardbred, Quarter Horse) [3]. Risk factors for staphylococcal folliculitis, however, have been poorly explored in horses. Staphylococcal pyoderma most often occurs secondary to another underlying skin disorder but can exist as a primary infection as well. Recurrence of staphylococcal infection is frustratingly common in veterinary practice, and the reasons for such recurrence are too often elusive [4]. Enrofloxacin showed good clinical efficacy for infections in horse skin [5]. Further it also can be used for refractory cases of staphylococcal folliculitis [2]. Ridding work is usually not possible and affected horse behaves violently for palpation [6]. Even though Staphylococcal folliculitis was commonly present in clinical practice it was often under reported. Hence an effort was made to highlight this issue and to create awareness among farmers for hygienic practices.

Case History and Observations

A 8 year old, Kathiawari breed stallion presented to the out patient unit of Large Animal Clinical Unit, Madras Veterinary College, Chennai with the history of pruritus, self mutilated injury, alopecia over the nasal planum and periocular region, muzzle, mucocutaneous alopecia on the oral commissures (Fig 1), withers and scapular region (Fig 2) over 10 days period.



Fig 1: Scabs, crusts and exudation over the periocular region, nasal planum, nostrils and commissures



Fig 2: Alopecic exudation with crusts over the withers and scapular region

The animal had scabs and papular goose bumb follicular eruptions on clinical examination. Physical examination revealed that the animal had normal rectal temperature with other normal parameters. Whole blood examination revealed microcytosis, neutrophilia and leukocytosis. Direct impression smears showed abundant neutrophils with intracellular and extracellular cocci. Fecal and peripheral blood examination was negative for parasites. Impression smear stained with diffquick stain was negative for fungal infections. Cultural swabs are collected from intact pustules

by opening the pustule with a sterile needle and depositing the material onto a culture swab. Swabs were streaked into the nutrient agar and the colonies were stained in gram's stain. Based on these they were confirmed as clusters of cocci. This was further confirmed by mannitol salt agar and coagulase test. The same was also confirmed by biochemical test (triple sugar iron test). Based on the clinical and microbiological examination it was confirmed that the animal had folliculitis due to *Staphylococcal aureus* infection (Fig 3).

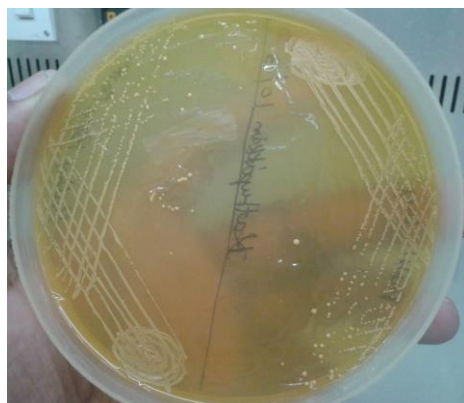


Fig 3: *Staphylococcal aureus* colonies from clinical sample

Treatment and Discussion

On the first two days, the animal was treated with povidone iodine rinse along with parenteral Enrofloxacin @ 7.5 mg/kg, bid, Chlorpheniramine maleate @ 0.5 mg/kg, bid, Flunixin meglumine @ 1 mg/kg, bid and Vitamin AD₃E @ 10 ml TD were given. On the third day, Ofloxacin lotion applied topically to augment the healing. Uneventful recovery was noticed after 15 days of therapy (Fig 4). Folliculitis can be caused by bacteria (staphylococcal and streptococcal species are commonest) or fungi (much more rarely). It is precipitated by rubbing due to dirty or ill-fitting harness, rugs or saddle cloths. The incidence is high in summer coincidental with hair shedding, humidity and increasing work with dirty or poorly maintained tack [5]. Poorly groomed horses have a higher tendency to develop the condition [6]. The abraded skin surface which provide a moist environment that facilitates bacterial replication and penetration into hair follicles and the surrounding tissue is the reason it [2]. The present clinical case might also due to poor grooming and hygienic practice by the owner. The presence of erect hair is the first sign associated with painful papules that may be more easily palpable than visible [6]. These may spontaneously regress or can enlarge and result in discharging ulcers or pustules [2]. There may be an extensive local edema and exudation [6]. Epidermal collarettes are occasionally seen. As the lesions become more chronic and spread they result in an expanding area of alopecia with hairs that are easily epilated and the lesions can be mistaken for dermatophyte infection [2]. The erected papules are not visible in our cases rather exudation with alopecia was noticed. This might be due to presentation of case in the latter stage. The *Staphylococcus* genus consists of a large number of different species, including minimally virulent commensals and important opportunistic pathogens. The predisposing factors which affect the body's normal immunologic or physical defenses are wounds, surgical

incisions, inflammatory skin conditions, immunosuppressive disorders (eg, Cushing's disease) and excessive moisture. Risk factors for staphylococcal folliculitis, however, have been poorly explored in horses. Bacterial culture and susceptibility testing is a key component of diagnosis and is crucial in guiding therapy [1]. The confirmation in our case is also by culture, isolation and biochemical analysis of staphylococcal isolates. Staphylococcal folliculitis is almost always a secondary problem, which involves diagnostic testing (eg, for Cushing's disease, allergies), environmental assessment (eg, stall, turnout areas), and evaluation of management (eg, blanketing, tack, uses that might result in skin trauma, bathing practices). Tack, rugs and similar should not be used over the lesions and should be thoroughly disinfected [2]. The owner was advised to regularly practice the hygienic practices. Skin washes with chlorhexidine or povidone iodine surgical scrub solutions are useful in controlling the spread of organisms responsible. Cold hydrotherapy may be beneficial in removing debris, reducing inflammation, and reducing edema. Hydrotherapy with povidone iodine rinse was given in our case also. Topical therapy is ideally performed daily for the first few days, with less frequent treatment as lesions start to resolve [1]. Topical therapy with Ofloxacin was continued in our case for a period of 7 days even after recovery. Analgesia using nonsteroidal anti-inflammatory drugs is essential [3]. Refractory cases should be treated with Enrofloxacin [2]. We use Enrofloxacin @ 7.5mg/kg once daily for two weeks. Complete recovery was noticed after 15 days of therapy. Awareness was created among the equine farmers for hygienic practices particularly in summer months. Unclean tack, rugs and poor grooming during hot and humid summer month was the reason for it. They were well treated with parenteral and topical quinolone group drugs.



Fig 4: After therapy with healed alopecic areas

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