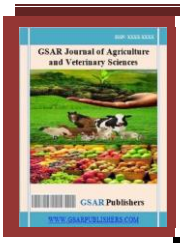

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Treatment of Traumatic Foot Ulcer in an Arabian Javelin Horse with Topical Propolis: A Case Report

By

Nezihe Gökhan
Malatya Turgut Özal University, Battalgazi Vocational School, Plant and Animal Production Department, Horse Breeding and Training Program, 3712025703, Malatya, TÜRKİYE. ORCID: 0000-0002-3541-2676

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Abstract

Ulcerative lesions of the distal limb are common disorders in sport horses and may adversely affect athletic performance by causing pain and lameness. Conventional treatment generally includes wound cleansing, antiseptic application, bandaging, and systemic antimicrobial therapy when necessary. In recent years, apitherapeutic products containing propolis have gained attention because of their antimicrobial, anti-inflammatory, antioxidant, and tissue regenerative properties. This case report presents the treatment of an ulcerative lesion on the right forelimb of an Arabian stallion actively used in javelin competitions with a propolis-based apitherapeutic pomade. Following clinical examination, the lesion was managed by routine wound cleaning, topical application of the propolis-containing pomade, regular bandage changes, and supportive care throughout the treatment period. The healing process was evaluated by monitoring local inflammation, exudation, granulation tissue formation, epithelialization, and improvement of lameness. Progressive clinical improvement was observed during follow-up, with a marked reduction in inflammation and exudate, followed by complete epithelialization of the lesion. Full clinical recovery was achieved within three weeks, and the horse returned to regular sporting activities without recurrence or signs of lameness. The findings indicate that propolis-based apitherapeutic pomade may be considered a promising supportive treatment for ulcerative limb lesions in sport horses by enhancing wound healing and reducing recovery time. Further controlled studies are required to confirm these findings in larger case series.

Keywords: *Apitherapy, Arabian Javelin horse, Foot ulcer, Propolis*

INTRODUCTION

Foot ulcers in horses are common foot pathologies, particularly in sport and performance horses, and can lead to lameness and loss of performance. Mechanical factors such as ground trauma, inadequate hoof care, poor hygiene, and sudden changes in direction can trigger ulcer formation (Kobluk at al 1995, O'Grady 2008, Ross 2011a). The most common clinical sign in horses with foot ulcers is lameness. Hyperemia, swelling due to exudate accumulation, and sometimes secondary infections causing a foul odor may be observed at the lesion site. Pain, warmth, and sometimes fistulas may also be observed on palpation of the foot (Ross 2011b). Traditional treatment includes wound cleansing, antiseptic applications, bandaging, and systemic antibiotic use. However, in recent years, increasing studies have shown that apitherapy-based practices also accelerate wound healing (Gökhan et al 2025). For example, honey, propolis, and royal jelly have become widely used in veterinary practice in recent years due to their wound-healing, antimicrobial, and anti-inflammatory effects. (Zhang et al 2018).

Bees use propolis to build and repair their hives. This substance is used to seal openings and cracks within the hive, smooth the interior walls, protect against outside animals such as snakes and lizards, and weather conditions (wind and rain), as well as to inhibit microbes and create a sterile environment. Therefore, the dense, resinous, and sticky structure of propolis is crucial for its protective function (Wagh 2013). This case report aims to describe the successful treatment of an ulcerative lesion that developed in the sole of the foot of an Arabian horse participating in the traditional equestrian javelin sport, using an ointment containing propolis.

*Corresponding Author: **Nezihe Gökhan.**

CASE PRESENTATION

Materials and Methods

A seven-year-old Arabian stallion actively used in the traditional Turkish equestrian sport of javelin (Cirit) was presented to the clinic with progressive lameness of the right forelimb. According to the owner, mild lameness developed following a sudden sharp turn during training and gradually worsened over the subsequent week. No previous history of hoof disease or orthopedic disorders was reported.

General physical examination revealed no systemic abnormalities. Orthopedic examination using nail examiner forceps revealed significant pain on the surface of the sole of the foot.

After thorough cleaning of the hoof, a well-demarcated ulcerative lesion approximately 1.5 cm in diameter was identified in the central region of the solea (solea ungulae) (Figure 1). The lesion was characterized by loss of the keratinized sole with exposure of the underlying corium. Mild localized hyperemia, edema, increased temperature, pain on palpation, and a small amount of serous exudate were observed. No purulent discharge, hoof wall separation, or evidence of deep digital infection was detected.

Based on the clinical findings, the lesion was diagnosed as a superficial traumatic solea ulcer.

Figure 1. Ulcerative wound in the sole (solea ungulae) region of the horse's right foreleg

Following diagnosis, loose necrotic horn surrounding the lesion was carefully removed by conservative debridement to facilitate drainage and topical treatment. Because the lesion was superficial, hoof wall integrity remained intact, and excessive mechanical pressure was not evident, corrective hoof trimming, therapeutic shoeing, or hoof block application was not indicated.

A 10% propolis ointment was prepared by mixing 10 mL of ethanolic propolis extract with 90 g of sterile petroleum jelly. This concentration was selected according to previous studies demonstrating antimicrobial and wound-healing efficacy of topical propolis formulations containing 5–10% propolis (Sforcin & Bankova, 2011; Wagh, 2013).

After cleansing the lesion, the ointment was applied directly to the ulcer every 48–72 hours for a total of three weeks (Figure 2). Following each application, the hoof was covered with a sterile gauze dressing and secured using a cohesive bandage. Dressings were replaced at each treatment session. Throughout the treatment period, the horse was maintained under strict stall rest and excluded from athletic activity.

Clinical healing was assessed at each dressing change using the following parameters: Ulcer diameter, presence of exudate, pain response to palpation, local heat, granulation tissue formation, epithelialization, lameness score.

No systemic antibiotics or non-steroidal anti-inflammatory drugs were administered during the treatment period.

Figure 2. Nail with propolis-containing pomade applied

Results

Clinical improvement was evident during the first week of treatment. Local inflammation and serous exudate gradually decreased, and palpable pain was significantly reduced. Healthy granulation tissue developed over the ulcer bed. By the end of the third week, complete epithelialization of the lesion and restoration of the sole surface had occurred. Local heat, swelling, pain, and exudate completely disappeared. The hoof test was negative, and the horse demonstrated normal weight-bearing ability without significant lameness during walking or trotting. At a one-month follow-up examination, the owner reported that the horse had fully returned to regular training, provided that lameness did not recur and athletic performance did not deteriorate.

DISCUSSION

Solea ulcers are common traumatic hoof lesions in athletic horses exposed to repetitive mechanical stress. Horses participating in traditional sports such as Turkish javelin (Cirit) may be particularly susceptible because rapid acceleration, abrupt deceleration, and sharp turning substantially increase compressive forces acting on the solea surface.

Standard treatment of traumatic solar ulcers includes removal of necrotic horn, establishment of adequate drainage when necessary, reduction of excessive mechanical pressure by corrective trimming or therapeutic shoeing, protection of the

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affected area, and prevention of secondary bacterial infection (O'Grady & Poupard, 2003; Dyson & Ross, 2011). In the present case, only conservative debridement was required because the lesion was superficial, localized, and not associated with excessive solar loading or deep tissue infection.

Propolis is a natural resinous product collected by honeybees from plant sources and contains numerous biologically active compounds, including flavonoids, phenolic acids, and aromatic esters. These constituents have been reported to possess antimicrobial, antioxidant, anti-inflammatory, and tissue regenerative activities (Sforcin & Bankova, 2011). Experimental and clinical studies have demonstrated that topical propolis promotes wound contraction, collagen synthesis, angiogenesis, and epithelial regeneration while reducing microbial contamination (Wagh, 2013; Martinotti & Ranzato, 2015).

Compared with conventional topical antiseptics, propolis may provide the dual benefit of limiting bacterial proliferation while simultaneously enhancing tissue repair. Such characteristics make it a potentially valuable adjunctive treatment for superficial hoof lesions.

Complete healing was achieved within three weeks using topical 10% propolis ointment combined with conservative debridement, protective bandaging, and stall rest. Although the favorable clinical outcome supports the potential therapeutic value of propolis, this report describes only a single case without a control treatment group. Therefore, definitive conclusions regarding comparative efficacy cannot be established.

Further prospective controlled clinical studies involving larger case populations, objective wound measurements, standardized lameness scoring systems, microbiological evaluation, and long-term follow-up are required to determine the clinical efficacy of topical propolis in equine hoof lesions.

CONCLUSION

This case demonstrates that topical application of a 10% propolis ointment, combined with conservative debridement, protective bandaging, and stall rest, resulted in complete healing of a superficial traumatic solar ulcer in an Arabian sport horse within three weeks.

Although conclusions are limited by the single-case design, the favorable outcome suggests that topical propolis may represent a safe, inexpensive, and practical adjunctive treatment for selected superficial hoof wounds in horses. Further controlled clinical trials are necessary before routine clinical application can be recommended.

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*Corresponding Author: **Nezihe Gökhan.**