EVALUATION OF THE THERAPEUTIC EFFECT OF CHLORAMPHENICOL SPRAY IN TREATMENT OF BOVINE DIGITAL DERMATITIS

Ghashghaii, A.
Assistant professor of surgery, School of Veterinary Medicine, Razi University, Kermanshah, Iran.
ghashghaii@yahoo.com

Abstract:
Bovine digital dermatitis is one of the most important infectious diseases of feet region in some dairy farms. Economic aspect of disease is important because of decreased milk yield, weight loss, impaired reproductive performance, increased number of cows culled, and cost of treatment and control. Many dairy farms in Iran have experienced this disease in 2 recent decades. Little is known about the cause and epidemiologic impact of disease. It is believed to be a multifactorial disease in which infectious agents (Spirochaets) are primarily involved. Many therapeutic methods have been experienced for treatment and control of disease such as copper sulfate and formalin foot bath, surgical removal of lesions and use of antibiotics as foot bath or by local spraying, that the latest has have more successful results. Several antibiotics have been used for this purpose. But there is no enough published information about the therapeutic effects and duration of treatment for some drugs such as chloramphenicol. So in this study the therapeutic effects of commercial chloramphenicol spray in cases of digital dermatitis were examined.

Twenty cows with clinical lameness due to digital dermatitis were chosen and divided to four equal groups (3 treatment groups and the fourth group as a control). After washing the affected feet with medium pressure running water in all groups, the heel and pastern area were sprayed with commercial chloramphenicol (contains 1% chloramphenicol palmitate) for one day in group 1, two days in group 2 and three days in group 3. In control group distilled water was sprayed in area for three days.

One week after the beginning of the treatment, cows were examined clinically. Lameness in all treated cows was abolished except the cows in control group. Examination of feet lesions showed complete improvement of disease in eight cows of groups 1 and 2 and all five cows in group 3. The improvement of disease in one cow in group 1 and one cow in group 2 was incomplete, because they were affected by severe atypical form of digital dermatitis with involvement of interdigital space.

Based on the results of this study, for treatment of sporadic cases of digital dermatitis with commercial chloramphenicol spray, one application of drug can be efficient in common forms of disease. But in more severe and complicated cases it may be necessary that the treatment to be continued for two to three days.
HEMATOLOGICAL STUDY OF CATTLE WITH LAMENESS

Khalafizadeh, J.1; Meimandi Parizi, A.1

1: Clinical Department, School of Veterinary Medicine, Shiraz University, Shiraz, Iran.
k_h_vet@yahoo.com
2: Graduated in School of Veterinary Medicine of Shiraz University, Iran.

Abstract:
Lameness in dairy cows is a major concern for producers. Lameness affects general condition of animals. This condition probably can alter hematological profile. There are few reports on hematological study of lame cattle. This study was conducted for hematological study of lameness in some farms of dairy and beef cattle. At first a questionair was completed for every farm on the basis of owner statements, history and clinical examination of cattle. From 1494 cattle were checked, 38 of them (2.5%) suffered from severe lameness. Blood samples were taken from all lame cases and 37 samples from healthy non-lame cattle as control. Blood samples were measured in laboratory for blood parameters including RBC, WBC, PMN, Hb and PCV. There was a decreased significatn difference (P<0.05) in Hb, PCV and RBC between lame cattle and control group. Increased significant difference (P<0.05) of WBC, neutrophil and monocyte were observed between lame cattle and control group. No significant difference was shown in lymphocyte and eosinophil between control and lame group.
DIFFERENTIATION OF HEEL PAIN FROM OTHER HOOF PAIN IN HORSES

Sardari, K. ¹; Alavi, S.M. ², Kazemi, H. ³, Saifi, H. ¹

¹: Faculty of Veterinary Medicine, Ferdowsi University, Mashhad, Iran. k_sardari@yahoo.com
²: Azad University, Bojnord, Iran
³: Faculty of Veterinary Medicine, Tehran University

Abstract:

Analgesia of the distal interphalangeal joint (DIP) and palmar digital nerves (PD) is commonly used diagnostically to localize pain originating from various region within the foot of horses. Results of diagnostic analgesia, however, can lead to misdiagnosis as been shown recently, analgesia of the DIP joint can attenuated lameness caused by solar heel pain in horses. Thirty-four horses with forelimb lameness referable to the hoof based on their response to the palmar digital nerves analgesia were divided into 2 groups based on their response to distal interphalangeal joint analgesic injection and hoof tester examination. Horses were showed heel pain by hoof tester examination and were profoundly improved by analgesia of the DIP joint were considered to have heel pain, whereas, all other horses were considered to have other causes of hoof pain. The responses to the application of hoof tester by Gibson’s method were compared between groups. The evaluation of the lameness graded as no differences, improved but the lameness noticeable, or profound improvement (>80% improvement). For DIP analgesia and hoof tester application, sensitivity, specificity and positive predictive values for heel pain were calculated.

<table>
<thead>
<tr>
<th>Test</th>
<th>Sensitivity %</th>
<th>Specificity %</th>
<th>Positive Predictive Value %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hoof tester (Sole)</td>
<td>25</td>
<td>81</td>
<td>54</td>
</tr>
<tr>
<td>Hoof tester (Heel)</td>
<td>34</td>
<td>69</td>
<td>53</td>
</tr>
<tr>
<td>DIP analgesia</td>
<td>100</td>
<td>85</td>
<td>87</td>
</tr>
</tbody>
</table>

According to this study DIP joint analgesia and hoof tester applications are not pathognomonic for differentiation of heel pain from other hoof pain in horses. The single most accurate diagnostic test was analgesia of the distal interphalangeal joint.
FIBROSARCOMA AND FIBROUS OSTEODYSTROPHY: COMPLICATION DUE TO ARTHRODESIS OF FETLOCK JOINT IN A HORSE.

Mahjoor, A. A.1; Dehghani, S.2

1: Department of Pathology, School of Veterinary Medicine, Islamic Azad University, Kauzeroun, Iran. Mahjoor@shirazu.ac.ir
2: Department of Surgery, School of Veterinary Medicine, Shiraz University, Shiraz, Iran.

Abstract:
A six year old Arabian stallion was presented with a disclosed right metacarpal bone from the fetlock joint due to an accident exhibiting a compound fracture. Following a complete clinical, paraclinical and radiological examination, it was decided to reduce the fracture and arthrodesis the fetlock joint. Under general anesthesia the cartilage of the distal metacarp and first phalange was curetted and the joint was fixed using a 15 cm, 14-hole conventional plate. The leg was bandaged and after recovery the horse received antibiotic, anti-inflammatory and supportive therapy daily. Every two weeks the joint was radiographed to assess the progress of arthrodesis. After two month, the wound broke down exposing the metal implants and the leg was not supported any more by animal. Euthanasia was induced and the animal was sent for autopsy evaluation. The implanted metal was surrounded by a thick layer of compact, hard mass. Muscle atrophy and subcutaneous edema was prominent in the affected limb. Histologically, there was two distinct portion. In one the normal constituents of the callus was not formed and the callous was composed of fibrous tissue and discrete islands of cartilage and woven bone. The central portion of the callus showed a cystic like degeneration. Most of the cortical bone was replaced by fibrous tissue. Formation of cysts and discrete osteoid formation that were not mineralized were the other characteristics in this portion. The overall picture of this portion was suggestive of fibrous osteodystrophy of metacarpal bone. The second portion was composed of fibroblasts arranged in a pinwheel pattern that had replaced cancellous and cortical bone. Some scattered giant cells were detected in this section. The neoplastic tissue had tended to replace the medullar cavity in one of the sections. There was no hemorrhage and osteoblasts were not detected in this portion. Therefore the microscopic findings were suggestive of fibrosarcoma in the metacarpal bone.
LAMINITIS IN HORSE, NORMAL PERSPECTIVE DIGITAL ANGIOGRAPHIC VIEW

Aliabadi, A.; Dehghani, S.; Varzandian, S.

1: Department of Veterinary Surgery, School of Veterinary Medicine, Shiraz University, Shiraz, Iran. aaliabadi@gmail.com
2: Department of Veterinary Surgery, School of Veterinary Medicine, Shiraz University, Shiraz, Iran.

Abstract:
One of most important diseases in equine industry is laminitis. This abnormality causes a tremendous economic loss to the horse owners. The objective of this study was to describe the vascular anatomy of the digital arteries of the fore leg and hind leg and their main branches in the equine foot and to quantify the diameter of these vessels by use of digital angiograms. The fore legs and hind legs of 4 Arabian horses were collected fresh (which were euthanised due to medical reasons). The radial artery and popliteal were dissected and catheterized. Heparinized saline was injected into them to flash the arteries of the possible blood clots. Iodinated contrast medium (Lipidol) was injected and radiographs were obtained in lateral, cranio-palmar and cranio plantar Position. The Palmar digital artery and plantar digital artery was characterized by complete filling and visualizing the terminal arch clearly. Their diameter was $2.0 \pm 0.7 \text{ mm}$ at the coronary region and $1.2 \pm 0.4 \text{ mm}$ at the entrance to the solar canal. The major arterial branches were composed of $12 \pm 5$ branch with a diameter of $1.0 \pm 0.6 \text{ mm}$. Digital angiography is useful for imaging small vessels.

The cranio palmar and cranio plantar view is more useful for the evaluation of terminal arch and solar braches, but two projections is necessary for complete examination of the foot. Digital angiography may be performed in clinical cases and research models for the examination of vascular perfusion of distal portion of the limb especially in laminitis cases.
CLINICAL AND ELECTROCARDIOGRAPHIC STUDY OF ANTIBIOTICS ADMINISTRATION VIA LIMB VEINS

Tabatabaei Naeini, A.; Seyedi, A.
School of Vet. Med, Shiraz University, Shiraz, Iran. tabatabaei_a@yahoo.com

Abstract:
Lameness and lesion of limb are most important problems in ruminants. Evidence shows that regional administration of antibiotics via limb veins has good effects for treatment of disorders in ruminants. The purpose of this study was to evaluate clinical response and electrocardiographic changes to regional administration of antibiotics via limb veins. For this study 10 clinically healthy male and female calves with 4-6 month age and 130-170 kg body weight were chosen. Each calf received 7 injections of antibiotics. Period between these injections was 7 days. First injection included normal saline injected via dorsal metacarpal vein (Group 1). The second, third and fourth injections included Gentamycin sulfate, Penicillin G-K and Pantrisol administered via dorsal metacarpal vein. (Groups II, III, IV). In each case body temperature, HR, RR and CRT were determined and ECG was taken before and immediately after injection, before and 0, 30, 60 min after tourniquet releasing. Fifth, sixth and seventh injections included Pantrisol, Penicillin G-K and Gentamycin sulfate administered via jugular vein (Group V, VI, VII). Vital signs were determined and ECG was taken before injections and 0, 20, 30, 60 min after injections. In some groups vital signs such as HR, RR and body temperature increased at first minute following injection and tourniquet releasing. Stress of injection and drug abrupt releasing in circulatory system are two factors that can produce this increase. The method of antibiotic administration that used in this had no side effects on vital signs and ECG parameters. The results of this study showed that limb intravenous regional antibiotic administration is one of the useful, safe and economical methods in treatment of lesions of limb in ruminants.
SOLE ULCER TREATMENT PROGNOSIS BY RADIOGRAPHY IN DAIRY CATTLE: IS IT POSSIBLE?

Hashemi, M.1; Nowrouzian, I.2; Veshkini, A.2; Azizi, S.1

1: Dept. of Clinical Sciences, Veterinary Faculty, Urmia University, Urmia, Iran.
2: Dept. of Clinical Sciences, Veterinary Faculty, Tehran University, Tehran, Iran.

Abstract:

Claw disorders (sole ulcer and white line disease) are the primary causes of lameness in most herds. The blood supplementation of corium is critical for sole ulcer repair and any vascular disorder must be resolved. Local irreversible bony changes, vascular thrombosis, periosteal new bone formation and tuberculum flexorium entheseophyte can interfere with normal corium blood supply and resulting to delay in sole ulcer healing. The aim of this study was to investigate the feasibility of radiography as a prognostic mean for evaluation of lameness therapy, which caused by sole ulcer. Eighteen dairy cows with sole ulcer were chosen from six dairy farms. The radiographs were taken in 4 directions: lateromedial, dorso-palmar (plantar), lateral (interdigital cassette technique), and dorso-palmar (plantar) oblique views. Sole ulcer healing and severity of lameness were scored following seventeen days of the standard treatment. Limb soundness was also evaluated at day 45 after the treatment. The radiographic findings derived from previous study were compared to the post-treatment clinical findings by U-test and K-square test. Scores of lameness, lameness-recovery, and lesion healing were 2(0-3), 1(0-2), and 3(2-4) (median, range), respectively, at day 17 post treatment. Forty five days after standard treatment, the lameness was seen in 8 cows (from 15 observed cows). Significant differences were detected in some of the radiographic findings of P3 regions at 17th day after treatment between both lameness- resolved and not resolved groups. Within lameness-resolved group (5 cows) no bony changes were seen on the P3 sole surface. The radiographic findings at day 45 after treatment were in accordance with the results seen at day 17 post-treatment. In the lameness-resolved group, on 45 day after treatment, the score of bony changes in sole surface and tuberculum flexorium were less than 2. Although the sole ulcer showed high apparent healing score, but limb soundness was seen only in 5 and 7 cows at 17th and 45th days after treatment, respectively. The results revealed that causes of lameness did persist in the studied cows in spite of apparently healed sole ulcer. The results of this study indicated that in cows suffering from sole ulcer, chronic bone changes on the pedal bone, sole surface (specifically near the flexorium tuber), and tuberculum flexorium, (specially with 3-4 severity scores) should be considered as factors to cause intractable lameness.
CLINICAL EVALUATION OF THE THERAPEUTIC EFFECT OF DICHLOROPHEN SPRAY IN TREATMENT OF DIGITAL DERMATITIS IN CATTLE

Ghashghaii, A.

Assistant professor of surgery, School of Veterinary Medicine, Razi University, Kermanshah, Iran.
ghashghai@yahoo.com

Abstract:
Digital dermatitis is one of the most important infectious diseases of feet region in dairy cows. Economic aspect of disease is important because of decreased milk yield, weight loss, impaired reproductive performance, increased number of cows culled, and cost of treatment and control. Since 1979 more than 80% of dairy farms in Iran have experienced this disease. Little is known about the cause and epidemiologic impact of disease. It is believed to be a multifactorial disease in which infectious agents are primarily involved. Some other predisposing factors are host skin defence mechanism, humudity, temperature, and housing. Many therapeutic methods have been experienced for treatment and control of disease such as copper sulfate and formalin foot bath, surgical removal of lesions and use of antibiotics as foot bath or by local spraying, that the latest has have better results. But residues in milk and meat and bacterial resistance must not be ignored as sequelae of the use of antibiotics. Because of these probelems, this study was performed to examine the therapeutic effects of commercial dichlorophen spray in sporadic cases of digital dermatitis.

Twenty cows with clinical lameness due to digital dermatitis were chosen and divided to four equal groups (3 treatment groups and the fourth group as a control). After washing the affected feet with medium pressure running water, the heel and pastern area were sprayed with commercial dichlorophen (contains dichlorophen 7.5% w/v) for one day in group 1, two days in group 2 and three days in group 3. In control group distilled water was sprayed in area for three days.

One week after the begining of the treatment, cows were examined clinically. Lameness in all treated cows was abolished except the cows in control group. Examination of feet lesions showed some improvement in group 1 and more improvement in group 2, but not completely, and signs of fresh lesions especially in periphery of the healed areas were observed. In group 3 improvements was complete and no signs of fresh lesions was observed. In controls no signs of healing were observed.

Based on the results of this study, for treatment of sporadic cases of digital dermatitis with commercial dichlorophen spray, it is recommended that this agent to be applied at least for three consecutive days.
RADIOGRAPHIC FEATURE OF SOLE ULCER IN DAIRY CATTLE

Hashemi, M.; Veshkini, A.; Nowrouzian, I.

1: Dept. of Clinical Sciences, Veterinary Faculty, Urmia University, Urmia, Iran.
2: Dept. of Clinical Sciences, Veterinary Faculty, Tehran University, Tehran, Iran.

Abstract:
Bovine lameness is a major health problem in dairy industry. Lameness accounts for tremendous economic cost due to lose in milk yield, weight and fertility. Sole ulcer is one of the primary causes of lameness in most herds. Bony changes in third phalanx can be followed by radiography. In this study, the radiographic appearance of the distal phalanx in 20 dairy cows with sole ulcer was presented.

Twenty cows from six dairy farms were chosen. Initially, the conditions were assessed clinically according to severity of ulcer, heel edema, grade and duration of lameness. The radiographs were taken in 4 directions: lateromedial, dorso-palmar (plantar), lateral (interdigital cassette technique), and dorso-palmar (plantar) oblique views. Radiographic findings were scored 1-4 based on the bony changes observed. The correlation between the radiological and clinical finding were determined by correlation coefficient test.

Ten radiographic changes were regularly noted in the ulcerated claw pedal bone: perivascular sclerosis (95%), vascular dilations (80%), extensor process enthesophyte (70%), solar margin irregularities (65%), tuberculum flexorium enthesophyte and P₃ torsion (35%), solar surface zigzag new bone formation (30%), solar surface bone proliferation (25%), dorsal wall bone proliferation and solar margin bone absorption (5%). The median and range for the ulcer severity, heel edema, and lameness score were 2 (1-4), 1 (0-4), and 2.5 (2-3), respectively. Mean of milk loss was 11±3.56 kg. There were many significant correlation coefficients between the regions of the pedal bone for bone changes scores. Between the P₃ regions, the most number of significant correlation coefficient was seen in sole surface, and the greatest strength of association was detected in tuberculum flexorium. Among the clinical findings, lameness duration had the most number of significant correlation coefficient in compare to the radiographic findings detected in P₃, whereas lameness score had the least number.

In the present study many of the radiological findings were supposed to be in relation to chronic laminitis. Many significant correlations of sole surface and tuberculum flexorium bone changes score with other regions of the pedal bone can be considered as origin of the sole ulcer in this point. The significant correlation between clinical and radiological findings show that in claws with sole ulcer, the lameness score is not an appropriate factor to predict the amount of bone changes, however the lameness duration, heel edema score, and severity of ulcer appearance can be a good prediction factor of bone changes in the pedal bone.