Oral Presentation

Some Radiological Measurements from the Hind Feet of Sound Dareh-shori Horses with Relevance to Laminitis and Founder

Roham Vali*1, Sahand Zakipour2

1Department of Clinical Sciences, School of Veterinary Medicine, Kazerun branch, Islamic Azad University, Kazerun, Iran.
2Graduated Student of Veterinary Medicine, Kazerun branch, Islamic Azad University, Kazerun, Iran.
E-mail: Rohamvali@gmail.com

Objective- In order to measure the relevant parameters with laminitis and founder in hind feet of healthy Dareh shori horses.

Design- Experimental study

Animals- 10 apparently healthy Dareh shori horses.

Procedures- After cleaning and washing the horses hooves, metal marker placement, the hooves were marked by the contrast, then hand-made block placed under the following limb, in order to take weight off on wooden block the other limb was elevated by someone else. all these exercise were accurated to get hindlimb placed vertically on the wooden block. lateral view radiograph were made to get the following measurements.

1-The distance between the top up the dorsal wall wire marker and the proximal limit of the extensor process of the distal phalanx (D-founder).
2-The thickness of hoof wall and under beneath soft tissues in place: proximal (STTp), Middle (STTM), Distal (STTD) and length of palmarcortical of p3 (pcl).
3-The thicknesses of hoof wall in the percent of length of palmarcortical of third phalang
4-Angles include: Hoof axis, P3 axis, the difference between p3 Axis and hoof Axis (H angle) p2 axis, the difference between p2 angle and p3 (R angle).

Results- The following values have been acquired: Founder Distance=5/99±2/65mm; Hoof wall thickness (STTP=16/75±2/12mm,STTM=16/42±2/43mm, STTD=16/21±3/85mm);PCL=59/9±5/8mm; STTP/PCL%=28/9±3/75mm;STTM/PCL%=27/51±4/24mm; STTD/PCL%=27/14±6/57mm.Values for angles: Hoof axis=53/99±5/22; p3 axis=53/38±2/7; H angle=0/66±4/19; p2 axis=49/16±4/73; R angle=4/21±4/14.

Conclusion and Clinical Relevance- Measurements of this study may differ with those reported from other breeds, so it can be used in the future as reference values for diagnosis of laminitis and founder in hind feet of Dareh shori horses.

Key Words- Radiological measurements, Hind feet, Dareh Shori horses, Laminitis

References

Oral Presentation

Forelimb Joint Lesions of the Racehorses Referred to Veterinary Teaching Hospital, Ferdowsi University: Radiographic Evaluation

Ali Mirshahi*1, Samaneh Ghasemi2, Masoud Rajabioun1, Kamran Sardari1

1Department of Clinical Sciences, Faculty of Veterinary Medicine, Ferdowsi University of Mashhad, Mashhad, Iran
2Resident of Surgery, Faculty of Veterinary Medicine, Ferdowsi University of Mashhad, Mashhad, Iran
Email: a.mirshahi@um.ac.ir

Objective- To describe of occurrence of the forelimb joint lesions in racehorses by radiographic imaging

Design- Case series study

Animals- 310 racehorses (Turkmen, Thoroughbred, Arabian and mixed breed) were referred to Veterinary Teaching Hospital, Ferdowsi University for soundness evaluation due to poor athletic performance during the period from 2010 to 2014.

Procedures- After clinical and hematological examinations, radiographic evaluations of forelimb joints were performed in clinically suspected racehorses. Type and location of the lesions were determined radiographically.

Results- Abnormal radiographic findings of the forelimb joints were described in 100 joints related to 65 horses. Of these 65 horses, 33 (50.76%) were female and 32 (49.23%) were male. The age distribution was from 24 days to 24 years old. In this study, 2-4 year old horses were major of population (80.92%). Radiologic evaluations were shown joint lesions in the carpal joints (53%), the fetlock joints (31%) and the other forelimb joints (6%). Fractures (56.45%), DJD (29.83%), OCD (9.67%) and arthritis (4.03%) were the common lesions of the affected joints, respectively. In the carpus, fractures tended to occurred at higher rates in the intermediate carpal (33.33%) and radiocarpal (31.48%) bones than distal end of radius (16.66%) and third carpal bone (16.66%).
The most common articular fractures were occurred in antebrachioarcarpal joint (59.09%). The fractures in middle and carpometacarpal joints were 38.63% and 2.27%, respectively. Chip fractures were the most type of fracture (76.78%) in the carpal joints.

In fetlock joint, occurrence of chip fractures and OCD were 91.66% and incomplete fractures were 8.33%. 54.16% and 45.83% of chip fractures and OCD were involved 3rd metacarpal bone and first phalanx, respectively.

Conclusion and Clinical Relevance- Whereas the prevalence and distribution of the forelimb joint lesions differ among breeds, this study reported the occurrence, type and location of these lesions in the racehorses were referred to Veterinary Teaching Hospital, Ferdowsi University of Mashhad. Based on current study, radiography is a major modality for precise diagnosis of the joint lesions and it should be done for any clinically suspected joints.

Key Words- Forelimb, Joint lesions, Racehorse, Radiology

References

Oral Presentation

Value of Power Color Doppler Ultrasonography for the Assessment of the Cancellous Bone Scaffold Coated with Nano-hydroxyapatite in Repair of Radial Bone in Rabbit

Rasoul Rahimzadeh1, Abbas Veshkini2, Davood Sharifi1, Saeed Hesaraki3

1Assistant professor, Department of Clinical Sciences, Faculty of Veterinary Medicine, Sanandaj Branch, Islamic Azad University, Sanandaj, Iran.
2Associate Professor, Department of Radiology, Faculty of Veterinary Science, Science and Research Branch, Islamic Azad University, Tehran, Iran.
3Full Professor, Department of Surgery, Faculty of Veterinary Science, Tehran University, Tehran.
4Assistant Professor, Department of Materials, Energy and Materials Research Institute, Karaj.
Email: dr rahimzadeh@iausdj.ac.ir

Objective-To evaluate the osteo-regenerative capacity of proprietary bone grafting material as a bone defect filler and osteogenetic stimulation to speed up bone healing too.

Animals- Eighteen adult male New Zealand white rabbits

Procedures- Eighteen adult male New Zealand white rabbits were anesthetized and a segmental full thickness bone defect of 10 mm in length was created in the middle of the right radial shaft in all rabbits. They were divided into two groups of 9 rabbits. Group I was considered as control and the fractured site was fixed using finger bone plate with 4 screws, whereas the cancellous bone scaffold coated with Nano-Hydroxyapatite was used to fill the gap after fracture fixation in Group II. Two dimensional and power Color Doppler ultrasonography were done before and after creating defects and on 0, 15, 30, 60 and 90 days to evaluate local reaction as far as new blood vessels network and callus formation are observed.

Results- Ultrasonographic findings confirmed the protrusion of newly formed blood vascular network in 30 days in Group I and from 15 days in Group II and remarkably increased till end of observation period.

Conclusion and Clinical Relevance- The nano-hydroxyapatite with more features and shorter in time, made possible the reconstruction of bone tissue and alternative techniques as well as previous bone graft, also ultrasonography are reliable techniques to trace local reaction at proper time.

Key Words- Nano-hydroxyapatite, Ultrasonography, Power Color Doppler, Rabbits.

References
Objective- To assess the effects of polyethylene glycol (PEG) on colonic evacuation in dogs

Design- Experimental study

Animals- Five healthy adult mixed breed dogs

Procedures- Food was withheld approximately 12 hours prior to drug administration. Each dog received polyethylene glycol (4 g/kg) regimen through an orogastric tube and radiography was performed 12 hours after bowel preparation. Only water was given ad libitum to animals during the day before radiography. Radiologist unaware of the time of exposure reviewed the standard radiographs. Dogs were observed for drug side effects up to two weeks after administration of the PEG.

Results- Polyethylene glycol increased the colonic evacuation in dogs. The quality of the radiographs was improved in result of decrease in gas and fecal radio-opacity. There were no significant adverse effects and no changes in the dog behavior during the study.

Conclusion and Clinical Relevance– according to present study it could be concluded that Polyethylene glycol is relatively effective and safe as a laxative in colonic evacuation in dogs. It is also suggested that combination of this method with enema improve the efficacy.

Key Words- Polyethylene Glycol, Colonic Evacuation, Dog

References

Oral Presentation

Quantitative Evaluation of Hepatic Lipidosis in Dogs

Yasamin Vali1, Mohammad Molazem*, Mehrdad Yadegari2, Mehdi Nasiri3, Omid Dehghan

1Department of Surgery and Radiology, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran
2Department of Veterinary Sciences, Islamic Azad university, Shahr-e-kord Branch, Shahr-e-Kord, Iran
3Department of Clinical Sciences, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran
4DVM, Islamic Azad university, Shahr-e-kord Branch, Shahr-e-Kord, Iran

Email: mmolazem@ut.ac.ir

Objective-The aim of present study was to determine feasibility of using three-dimensional (3D) VOCA ultrasonography for diagnosis hepatic lipidosis in dogs.

Design- Experimental study

Animals- 20 dogs (10 dogs with hepatic lipidosis and 10 dogs with normal hepatic parenchyma)

Procedures- For this purpose, dogs which referred to small animal hospital, faculty of veterinary medicine, university of Tehran and their hepatomegaly was confirmed radiographically were examined by 3D ultrasonography. Mean gray level of livers (MGL) for region of interest about 1cm3 of the hepatic parenchyma were calculated for dogs which increased echogenicity of their hepatic parenchyma were diagnosed by 2 dimensional ultrasonography. Ultrasonographic guided Liver aspiration and cytologic examination were performed as a next step to confirmation hepatic lipidosis. By the way of comparison between normal and abnormal hepatic condition these procedures were repeated for dogs with normal hepatic parenchyma.

Results- Totally 10 dogs were included to this study as patient group (lipidosis). Ten dogs also included as control normal group. Statistical analysis of MGL of normal dogs and dogs which suffered from hepatic lipidosis revealed significant differences.

Conclusion and Clinical Relevance- Significant differences between quantified evaluation of the normal and abnormal hepatic parenchyma is indicative that quantitative 3 dimensional ultrasonography will be of importance in diagnosis of hepatic lipidosis although further investigation is recommended to expansion the accuracy and sensitivity.

Key Words- Quantitative Ultrasonography, Qualitative Ultrasonography, Hepatic Lipidosis, Dog

References

Oral Presentation

Radiographic and Ultrasonographic Findings of Space-occupying Masses in the Bovine Lungs

Seyedmohammad Hashemiasl*, Sajad Alizadeh

Proceeding of the 4th International Symposium of Veterinary Surgery (ISVS) 21-23 Oct 2014, Mashhad, Iran
Objective- The purpose of this study was to describe the radiographic and ultrasonographic aspects of space-occupying masses in the bovine lungs.

Design- In vitro Descriptive study

Animals- 42 run off bovine lungs that collected from abattoir

Procedures- Plain dorsoventral radiograph was taken in all lungs, operating at 50 kVp and 3mAs. Then contact ultrasonography was taken with us of convex probe 3/5-7/5 MHz and linear probe 8-10 MHz. Radiographic and ultrasonographic findings were described according to pathologic diagnosis as gold standard.

Results- Radiographically, space-occupying mass found in 39 lungs (92.8%) including soft tissue opacity in 34 (80.9%) and calcified masses in 14 (33.3%). Hydatid cysts, pulmonary abscess, tuberculosis, hepatization, edema, emphysema and atelectasis were final pathologic findings. Large abscesses without calcification were looked similar to hydatid cyst on radiographs, But small or large abscess with calcification were seen as calcified nodular mass. In ultrasonography only the superficial abscess and hydatid cysts could be visible. The hydatid cysts were seen as anechoic cavity with comet-tail artifact. Also the calcified nodules were seen as hyperechoic nodes.

Conclusion and Clinical Relevance- Current study showed that in vitro radiography and ultrasonography of the cattle lungs are appropriate methods for evaluating lung space-consuming masses including hydatid cyst, lung abscess and hepatization. Use of this study finding can add new potential for lungs ultrasonography in clinical examination of cattle.

Key Words- Ultrasonography, Mass, Bovine lung

References

Oral Presentation

Ultrasonographic Scanning of the Carpal Joint and Associated Structures in Healthy Sheep-Reference Study for Investigation of Joint Problems in Sheep

Safid Imran1, Walter Baumgartner2, Martenik Birgit3, Imran Ahmed

1Assistant Professor, University of Veterinary and Animal Sciences Lahore Pakistan, University of Veterinary Medicine Vienna, Austria.
2University of Veterinary Medicine Vienna, Austria.
3University of Veterinary Medicine Vienna, Austria.
Email: Safid.aslam@uvas.edu.pk

Objective- Ultrasonographic scanning of the carpal joint area and associated structures in healthy sheep without any signs of pathological changes, the reference data study for further investigation in clinical practices.

Design- Descriptive Study

Animals- Sheep

Procedures- A 7.5 MHz linear transducer with standoff pad was used to examine the position, echogenicity, degree of demarcation of the tendons and ligaments, appearance of the muscles, boundaries of the joints, joint pouches, tendon sheath lumina and vessels of the carpal region in healthy live sheep. The examination started 6 cm proximal and ending 6 cm distal to the accessory carpal bone used as anatomical landmark. The boundaries of joints were examined at dorsal, lateral, palmar, and medial aspects of the carpus in longitudinal and transverse planes. Cadaver forelimbs were selected to study the anatomical landmarks and structures. Two cadaver limbs were frozen and sliced at the carpal area, one transversely, the other longitudinally. One centimeter thick slices were compared with the sonographic findings of live sheep. The experimental filling of joint was performed similarly to arthrocentesis in goats.

Results- The surfaces of the radius, carpals and metacarpals were appeared as smooth, linear hyperechoic structures with acoustic shadowing distally. The joint spaces of the antebrachiocarpals (ABC), mediocarpals (MC) and carpometacarpals (CMC) joints on the dorsal, lateral, palmar and medial aspects of the carpus appeared as clear interruptions of the bones surfaces. The joint spaces appeared as triangular, anechoic zones. The fat pad and connective tissue covered the joint spaces were seen as echogenic structures. The extensor carpi radialis (ECR) tendon and lateral digital extensor (LDE) tendon appeared as echogenic structure crossing over the ABC, MC and CMC joints at the dorsal and lateral aspect of the carpal area in the longitudinal planes respectively. Medial collateral ligament (MCL) appeared as oval and echogenic at medial aspect of carpus. At palmar level, accessory carpal bone overlapping was visualized. The anechoic structure with echogenic valve was depicted as median vein. The ultrasonographic scanning of muscles extensor carpi radialis (ECR), lateral digital extensor (LDE), common digital extensor (CDE), extensor carpi
ulnaris (ECU), superficial digital flexor (SDF), deep digital flexor (DDF) and flexor carpi radialis (FCR) was also possible and revealed as hypoechoic appearance of muscles with hyperechoic echogenic septae of fat. The topography of muscles was scanned in transverse plane gave better orientation of structures. The findings of sonogram were equal to the corresponding cross anatomic slices. After experimental filling of the joint spaces in cadaver specimen, the carpal joint pouches were identified as well-defined anechoic areas. An important finding in this study was the fact that carpal joint pouches and tendon sheath lumina are not clearly defined in healthy sheep. Thus the ability to image these structures indicates the presence of synovial effusion.

**Conclusion and Clinical Relevance**- Based on our findings in normal sheep, ultrasonography appears to be very helpful to characterize lesions in sheep with carpal soft tissue abnormalities.

**Key Words**- Ultrasonography, Topography, Carpal joint region, Stand off pad, 7.5 Mhz transducer

### Oral Presentation

**MRI Characteristics of Hip Joint Active Osteoarthritis: A Case Report**

Somaye Davudypoor*1, Mohammad Molazem1, Fariborz Afrozii2

1Department of Surgery and Radiology, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran.
2Private Veterinary Clinician, Tehran, Iran.
Email: davudypoor@ut.ac.ir

**Case Description**- A 10-months old female terrier dog was referred to imaging department with history of lameness in the right rear limb from 2 weeks ago.

**Clinical Findings**- Radiographic study was performed and revealed mild malformation of the right femoral head but no significant changes that indicated DJD or dysplasia were not found. MRI examination was performed to exact evaluation of the both hip joints and adjacent soft tissues. Hypointensity in T2 and STIR sequences in right hip joint synovial fluid, within skeleton and femoral head growth palate. Large area of cellulitis and synovitis has surrounded the right hip joint, intra and extra capsular. Finally active osteoarthritis in right hip joint was diagnosed that could be early sign of avascular head femoral necrosis.

**Treatment and Outcome**- The patient was treated with NSAIDs medications and cage rest.

**Clinical Relevance**- MRI studies of the pelvic region are often indicated in animals due to the complexity of the soft tissue structures in this region. Contrast enhancement is beneficial, however, may be helpful distinguish benign from infectious lesions of the lumbosacral joint complex. Osteoarthrosis of the coxofemoral joint can have marked enhancement of the synovial membrane and large areas of cellulitis and synovitis. While the degree of change is obvious, it is possible that septic arthritis or even synovial cell sarcoma could have a similar appearance. This study presents the first MRI diagnosed active osteoarthritis and its unique features.

**Key Words**- Osteoarthritis, Hip joint, MRI

### Poster Presentation

**Evaluation of Breed, Age and Sex Effects on Hip Dysplasia in Dogs Referred to Shahid Chamran University of Ahvaz During 1391-1393**

Boshra Elyasi1, Sulmaz Tarakameh Samani2, Bahman Mosallanejad*1, Alireza Ghadiri1, Abdolvahed Moarabi1

1DVM Student of Veterinary Medicine, School of Veterinary Medicine, Shahid Chamran University of Ahvaz, Ahvaz, Iran.
2Resident Student of Small Animal Internal Medicine, School of Veterinary Medicine, Shahid Chamran University of Ahvaz, Ahvaz, Iran.
3Department of Small Animal Internal Medicine, School of Veterinary Medicine, Shahid Chamran University of Ahvaz, Ahvaz, Iran.
4Department of Radiology, School of Veterinary Medicine, Shahid Chamran University of Ahvaz, Ahvaz, Iran.
Email: bmosallanejad@scu.ac.ir

**Case Description**- This paper is a refinement of previous studies in that only suitably radiographed dogs were included in the data base. The rate of hip dysplasia varied widely by breed from eight percent in Pekinese and dachshunds to frothy percent in German Shepherd and Dobermans and in the end, fifty-two percent in Terriers. There was a significant difference in the prevalence of dysplasia within at least three breeds: Great Dane and old sheepdogs. Physical size per se did not appear to be an important determinant of hip dysplasia but it seems that age and sex are involved in this problem for example we...
saw this problem more in females and younger dogs between 5 months to two years old, than others.

Clinical Findings- Among 100 referred dogs to Shahid Chamran University during 1391 to 1393 we saw that most of them had Hip Dysplasia problem so we attracted to examine this problem from different aspects such as: age, sex and breeds. We found that there is a significant relation between these factors with this problem in above mentioned understudied dogs. The rate of hip dysplasia varied from 8 percent in Pekingese and dachshunds to frothy percent in German shepherd dogs and Doberman pinchers and in the end, fifty-two percent in Terriers. It seems that age and sex are involved in this problem (P<0.05) for example we saw this disorder more in females and younger dogs between 5 months to two years old than others because seventy percent of these dogs were female and only thirty percent were male and also, sixty-two percent had 5 months to 2 years old and thirty percent were 2 to 8 years old and residue were 12 years old and up.

Treatment and Outcome- We send them to radiology section to take radiograph from their Hip and Femur. Each dog was positioned in the hip radiograph with its hip joints fully extended and knees internally rotated. Radiographs should show the whole pelvis and the femurs up to the stifle Joints. In the evaluation of hip radiographs, the form of the femoral head and the acetabulum, the joint space, and the acetabular angle were measured. A significant risk of moderate to severe arthrosis has been found in dogs diagnosed as dysplastic by the radiographs, compared with dogs diagnosed as normal. Joint laxity is considered as the most important predictor of degenerative joint disease, i.e. arthrosis in hip joints. Because that this problem is a genetic problem so there is not any treatment for this disease and in result we must change genomes of these dogs to prevent this problem that it is not simple work and it is working now in Europe universities.

Clinical Relevance- In the future, excessive inbreeding should be avoided in the studied breeds by using a larger proportion of the animals, especially males, for breeding, and by keeping progeny group sizes as uniform as possible between the animals. Intentional inbreeding should be avoided in the future as well. Mating systems managing inbreeding trends in small populations under selection, or maintaining genetic variation, could also be applied. In result, more studies are necessary to determine if age, breed and sex has direct effect on this problem. 

Key Words- Hip Dysplasia, Dog, Radiography

References

Poster Presentation

The Radiographical Assessment of Occurrence and Degree of Carpal Bone Fracture in Kurd Horse

Rasoul Rahimzadeh*, 1 Amirali Jahanshahi2

1Assistant professor, Department of Clinical Sciences, Faculty of Veterinary Medicine, Sanandaj Branch, Islamic Azad University, Sanandaj, Iran.
2DVSc, Department of Surgery, Faculty of Veterinary Science, Science and Research Branch, Islamic Azad University, Tehran, Iran.

Email: drrahimzadeh@iausdj.ac.ir

Objective- There have not been any studies that document radiographic abnormalities in Kurd horse. the aim of this study was determine the occurrence and prevalence of carpal fracture and determine the indicators of the degree and frequency of those.

Animals- 100 Kurd horses

Procedures- For this purpose medical records, radiographs of 100 Kurd horses were reviewed. Information gathered included signalment, location, number, and size of the primary lesion, number and size of palmar carpal fragments, and also effects of age, sex, distribution in left and right carp on their incidence rate.

Results- The site with the highest number of fracture was the palmar lateral aspect of the MCJ (64.5% [n = 20]), followed by the palmar medial aspect of the MCJ (19.4% [6]). Fractures most commonly involved the distodorsal aspect of the RCB (58.1% [18]), followed by the dorsal aspect of C3 (25.8% [8]), slab fractures of C3 (19.4% [6]).

Conclusion and Clinical Relevance- This study showed carpal fracture can be used as an indicator of clinically important joint pathology and as a prognostic indicator in Kurd horses and radiography is a valuable method for diagnosing of disordered carp (in relation with factors such as sex, age and site) and also their frequency.

Key Words- Radiography, Carpus, Carpal Fracture, Kurd Horse.

References

**Poster Presentation**

**Morphometric Evaluation of Long Bones of the Caspian Horse by Radiography**

Saman Taravat*, Seifollah Dehghani Nazhvani, Saeed Ahrari khafi, Yalda Jalali Khalilabadi, Aida Hassanpour

Department of Surgery, School of Veterinary Medicine, Shiraz University, Shiraz, Iran.

Email: Saman_taravat@yahoo.com

**Objectives**- The objective of this study was to measure the size of different long bones by radiographic evaluation.

**Design**- Descriptive study

**Animals**- 10 Caspian horse of both sex (5 under 10 and 5 older than 10 years) were used for this study.

**Procedures**- Radiographs were obtained from the long bones in Antero Posterior and Lateral view. The dimensions of the bone were measured manually. The data were analyzed by SPSS.

**Results**- The measurements of length, width of the tibia bone showed no significant difference between young and adult horses and also between anterior posterior and lateral radiographic views. Similar results were obtained from the other bones such as metatars, Radius, and Metacarp.

**Conclusion and Clinical Relevance**- There was no differences between radiologic morphometric evaluation of the young and old Caspian horses. Morphometry can be used for identification of horse and it’s authenticity.

**Key Words**- Caspian horse, Morphometry, Long bone, Radiography.

**References**


**Poster Presentation**

**Ultrasound Analysis of Iron Accumulation in the Liver of Eurasian Collared-Dove**

Yunes Khalafi*1, Rasoul Rahimzadeh2, Pejman Nazem Zomorrodi2

1DVM, Faculty of Veterinary Science, Sanandaj Branch, Islamic Azad University, Sanandaj, Iran
2Assistant Professor, Department of Clinical Sciences, Faculty of Veterinary Medicine, Sanandaj Branch, Islamic Azad University, Sanandaj, Iran.

Email: Drrtwor@gmail.com

**Objectives**- Iron storage disease is an important disease affecting certain species of birds such as doves, and toucans. The diagnosis of this disease can be challenging and historically requires a liver biopsy, which carries some risk to the patient. This study investigated the use of ultrasound, histology and measurement of iron concentration in Eurasian Collared-Dove that were induced to develop hemosiderosis (or excess liver iron accumulation). No changes in the appearance of the liver were seen on ultrasound.

**Design**- Experimental Study

**Animals**- Clinically healthy adult Eurasian Collared-Doves (n=6).

**Procedures**- Iron overload was induced by iron dextran i.v. in clinically healthy adult Eurasian Collared-Doves (n=6). Hemosiderosis was induced in all treated birds. Two control Rock Doves received no iron injections. Eurasian Collared-Doves did not show clinical signs of iron overload during the 6-wk study. Ultrasound examination of the liver in the Eurasian Collared-Doves receiving iron dextran was performed on days 0, 13, 28, and 42. No ultrasound images were collected on the control Eurasian Collared-Doves. Surgical liver biopsies were performed on Eurasian Collared-Doves receiving iron dextran on days 2, 16, and 45 (at necropsy). A single liver sample was collected at necropsy from the control birds.

**Results**- Histologic examination, quantitative image analysis, and tissue iron analysis by thin-layer chromatography were performed on each liver sample and compared to the imaging studies.

**Conclusion and Clinical Relevance**- Although hemosiderosis was confirmed histologically in each experimental Eurasian Collared-Doves, no significant change in pixel intensity of the ultrasound images was seen at any point in the study.

**Key Words**- Ultrasound Images, Iron Storage Disease, Eurasian Collared-Doves, Liver

**References**

Radiological and Histopathological Study of Joint Disease in Arbor-Acres Broiler Chickens

Payam Hajizadeh1, Rasoul Rahimzadeh2, Yaser Ghiasvand3

1Young Researchers and Elites Club, Sanandaj Branch, Islamic Azad University, Sanandaj, Iran.
2Assistant Professor, Department of Clinical Sciences, Faculty of Veterinary Medicine, Sanandaj Branch, Islamic Azad University, Sanandaj, Iran.
3DVM Student, Faculty of Veterinary Medicine, Sanandaj Branch, Islamic Azad University, Sanandaj, Iran.

Email: payam_hajizadeh@yahoo.com

Objective- In recent centuries, more than 300 varieties of broilers have been purified and only several superior races which had the least anatomic and physiologic problems, have been raised in poultry industry. One of these superior races which have allocated a dominant contribution in poultry industry of our country is Arbor-Acres. The main problem with this race is reported to be unilateral or bilateral leg problems, but in the case of application of ration with proper quality, less than 5% of the flock would suffer from this problem. The aim of the presented study is to investigate the problems in Arbor-Acres race by application of radiographic and histopathology techniques.

Design- Descriptive

Animals- 60 Arbor-Acres chickens, aged 20-30 days, which suffers from lameness grade 4 and unilateral or bilateral leg paralysis were collected from 4 raising farms. The ration of the studied chickens was composed from the same food that is usually used in aviculture of country.

Procedures- The two lateral and anterior – posterior radiographs were taken from all the patients and investigated by a radiologist. The histopathologic sections were also prepared from 40 cases of the patients.

Results- 3 cases had Hip dysplasia, 8 of them suffered from the degeneration of the knee joint and the rest had the symptoms of dyschondroplasia, and Osteoporotic of femur and tibia, and also thinning of femoral cortex.

Conclusion and Clinical Relevance- The accuracy in the preparation of an appropriate formulation for weight gain consistent with the bone growth and prevention from the electrolyte imbalances sound necessary in prevention of these problems.

Key Words- Joint Diseases, Arbor-Acres, Radiography, Histopathology

Radiographic Assessment of the Effect of Demineralized Bone Matrix on Induction and Conduction of Osteogenesis in Repair of Mandibular Bone Defect in Cat

Rasoul Rahimzadeh1, Pejman Nazem Zomorrodi1, Pooya Alimohammadzadeh2

1Assistant Professor, Department of Clinical Sciences, Faculty of Veterinary Medicine, Sanandaj Branch, Islamic Azad University, Sanandaj, Iran.
2Young Researchers and Elites Club, Sanandaj branch, Islamic Azad University, Sanandaj, Iran.

Email: p_pooya2006@yahoo.com

Objective-The main goals in the treatment of mandibular fractures were: bone union, normal dental occlusion and immediate return to oral alimentation.

Design- Experimental

Animals- Twelve adult cats were divided into two groups.

Procedures- In this study twelve adult cats were divided into two groups. A segmental defect of 5mm was created in one of the hemimandibles behind the 1st molar, the fractured site was fixed in both group using mini bone plate with 4 screws, then demineralized bone matrix (DBM) was used to fill the gap after fracture fixation in Group II. Radiography was done after creating defects on 0, 15, 30 and 60 days, from the radiological results the parameters of groups were compared with Lane and Sandhu scale system in terms of callus tissue, mineralization and remodeling.

Results- The statistical data showed that group 2 differ significantly from the other group in terms of total scoring (P < 0.05).

Conclusion and Clinical Relevance- These results indicate that the demineralized bone matrix with more features and shorter in time, made possible the reconstruction of mandible tissue and alternative techniques as well as previous bone graft.

Key Words- Radiography, Demineralized Bone Matrix (DBM), Cat, Mandible, Bone Graft

References
Comparison of Iohexol and Barium Sulfate as Gastrointestinal Contrast Media in Ringedneck Parakeet

Reza Ghaviruh*, Rasoul Rahimzadeh1, Pejhman Nazem Zomorrodi2
1DVM Student, Sanandaj Branch, Islamic Azad University, Sanandaj, Iran.
2Assistant Professor, Department of Clinical Sciences, Faculty of Veterinary Medicine, Sanandaj Branch, Islamic Azad University, Sanandaj, Iran.
Email: r.ghavirooh@yahoo.com

Objective- Iohexol, a nonionic, iodinated contrast medium, was evaluated as an alternative to barium sulfate suspension for radiographic studies of the avian gastrointestinal tract.

Design- Experimental

Animals- Clinically healthy adult Ringedneck Parakeet (n=6).

Procedures- Iohexol, prepared undiluted or diluted with tap water 1:1 or 1:2, was given by gavage tube to unanesthetized, mid-sized birds. The volume of iohexol or barium administered was based on each bird's estimated crop volume; the dose was determined retrospectively as 25-30 ml/kg. After the contrast media was administered, Ventrodorsal and lateral radiographic views were taken immediately, at 15 and 30 minutes, at 1 hour, and then at hourly intervals until the contrast medium reached the cloaca.

Results- When compared with barium sulfate studies, radiographs of birds given iohexol (25-30 ml/kg), either undiluted or diluted 1:1, were of equal quality to those of birds given barium, in terms of opacification of the gastrointestinal tract lumen and the ability to evaluate all portions adequately.

Conclusion and Clinical Relevance- An advantage of iohexol was its rapid transit time when compared with barium. Dilution of iohexol at ratios greater than 1:1 is not recommended, as it resulted in poor opacification of gastrointestinal structures.

Key Words- Iohexol, Barium sulfate, Gastrointestinal contrast media, Ringedneck Parakeet

References

Three Dimensional CT Scan Evaluation of Supraspinatous Mineralizing Tendonopathy and Avulsion Fracture

Yasamin Vali, Mohammad Molazem*, Mohammad Mehdi Dehghan, Saeed Farzad Mohajeri, Zahra Safarian, Somayeh Davoodipour

Department of Surgery and Radiology, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran
Email: mmolazem@ut.ac.ir

Case Description- A two years old male German Shepherd dog

Clinical Findings- The patient was referred to small animal hospital, faculty of veterinary medicine, university of Tehran with history of jumping from stairs 2 weeks ago and immediately lameness on left fore limb. Clinical examination revealed week lameness on the left fore limb at the time of presentation.

Treatment and Outcome- Radiography revealed two symmetrical bony densities without any underlying defects in cranial aspects of both right and left shoulder joints in lateral radiographs. CT scan study revealed an avulsion fracture in the location of teres major tendon with underlying defect at left shoulder and two symmetrical bony compartments as well as radiography without any relation with underlying bones in transverse scans and three dimensional reconstruction. Described mineralized compartments diagnosed as supraspinatous mineralizing tendonopathy. The patient treated with antiinflammatory drugs and cage rest.

Clinical Relevance- Supraspinatus insertionopathy or tendinopathy involves the supraspinatus tendon becoming torn or strained over time. This chronic injury may not result in lameness until there is ossification of the tendon and impingement on the biceps brachii tendon, but lameness can occur without ossification On physical examination, the dog will exhibit pain when the shoulder is flexed and the tendon is palpated cranially over the shoulder joint; the dog may also exhibit pain when the biceps brachii tendon is palpated. Supraspinatus tendon injuries can be diagnosed with ultrasonography or magnetic resonance imaging (MRI), and injuries are often bilateral although CT scan will be of importance in diagnosis of supraspinatous mineralizing tendonopathy and differentiation from avulsion fractures.

Key Words- Supraspinatus Tendonopathy, Three Dimensional CT Scan, Avulsion Fracture
Ultrasonographic Evaluation of Intraocular Structures in Healthy Dareh-shori Horse

Roham Vali1, Aboozar Dehghan1, Rasoul Rahimzadeh1, Edris Sayadi2

1Department of Clinical Sciences, School of Veterinary Medicine, Kazerun branch, Islamic Azad University, Iran.
2Department of Clinical Sciences, School of Veterinary Medicine, Sanandaj branch, Islamic Azad University, Iran.

Objective- The aim of this study was to describe the ultrasonographic appearance and measurements of Intraocular structures in healthy Dareh-Shori horse.

Design- Experimental study

Animals- 10 Dareh-shori horses with healthy eyes.

Procedures- Transcorneal ultrasonographic scanning of left and right eyes of 10 horses was performed using a 9-12 MHz transducer. The transducer was placed in a longitudinal position (sagittal plane) until optimal B-scan images, were obtained. Measurements of the following parameters were recorded: Anterior chamber depth, lens thickness, vitreous chamber depth, axial globe length.

Results- Means and standard deviations of the intraocular structures were as, 4.52±0.49mm (Anterior chamber), 12.31±1.54mm (lens thickness), 22.03±1.08mm (vitreous chamber depth) and 37.70±1.3mm (axial globe length) respectively.

Conclusion and Clinical Relevance- Results provide ocular measurements between right and left eyes, were not significantly different (P>0.05). It may differ with those reported from other breeds, so it can be used as reference values for diagnosis of some ocular abnormalities in Dareh-shori horses.

Key Words- Ultrasonography, Eye, Dareh-shori Horse

References

Ocular ultrasound aspects and biometric values of the normal eye of the Brown Fish owl (Ketupa zeylonensis)

Mahmoud Sepehr1, Rasoul Rahimzadeh1, Pejman Nazem Zomorrodi2

1DVM Student, Sanandaj Branch, Islamic Azad University, Sanandaj, Iran.
2Assistant Professor, Department of Clinical Sciences, Faculty of Veterinary Medicine, Sanandaj Branch, Islamic Azad University, Sanandaj, Iran.

Email: vetmehr90@yahoo.com

Objective- To report the biometric values and ultrasonographic aspects of the normal eye of the Brown Fish owl (Ketupa zeylonensis).

Design- Descriptive

Animals- Sample population healthy, free-living, adult Brown Fish owl from the Urmium lake national park.

Procedures- Both eyes of all owls underwent B-mode ultrasonographic examination and biometry was performed for lens axial length (WL), depth of the anterior (AC) and vitreous (VC) chambers, axial length of the globe (LB) and the pecten oculi (LP) of both eyes, using a 12 MHz probe. The owls were manually restrained without sedation and the eyes were topically anesthetized.

Results- Biometric and statistical findings were as follows: in the left eye, the means and standard deviations were: LB = 23.76 ± 0.92 mm, WL = 7.79 ± 0.27 mm, AC = 4.27 ± 0.47 mm, VC = 11.36 ± 0.29 mm and LP = 5.69 ± 0.50 mm; in the right eye, the values were: LB = 24.25 ± 0.79 mm, WL = 8.03 ± 0.40 mm, AC = 4.56 ± 0.52 mm, VC = 11.40 ± 0.25 mm, and LP = 5.68 ± 0.41 mm. No significant differences were found between left and right eyes measurements of LB, WL, AC, VC, and LP dimensions.

Conclusion and Clinical Relevance- Ocular ultrasound aspects and biometric values of the Brown Fish owl are reported. The study's results provide means for various ocular measurements. The ultrasound is an easy and safe exam to be performed in the Brown Fish owl's eyes.

Key Words- Ultrasonography, Brown Fish Owl, Biometry, Eye

References
Three Dimensional CT Scan Evaluation of Agnathia in A Lamb

Yasamin Vali1, Sarang Soroori*1, Mohammad Javad Ragh2

1Department of Surgery and Radiology, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran.
2DVM, Amin Abad Research Institute, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran.
Email: Soroori@ut.ac.ir

Case Description - A neonatal lamb
Clinical Findings - The patient was born with abnormal appearance and mandibular aplasia that died shortly after birth. The cadaver was examined by radiography and computed tomography with transverse and three dimensional reconstructions.
Treatment and Outcome - Radiography confirmed mandibular aplasia and skull dyplasia. Three dimensional reconstruction of CT images revealed that mandibular aplasia, synophthalmia, incisive and nasal bone dyplasia are responsible for skull deformities.
Clinical Relevance - Agnathia (dysgnathia or agnathia-otocephaly (AO) is a lethal malformation complex of the first branchial arch characterized by the absence of the mandible, microstomia, aplasia or hypoplasia of the tongue, or low-set medially fused ears or eyes toward the midline. New imaging modalities such as CT scan are responsible for diagnosis of the skull congenital deformities.
Key Words - Agnathia, Lamb, Three Dimensional CT Scan

References

Three Dimensional CT Scan Evaluation of Supraspinatus Mineralizing Tendonopathy and Avulsion Fracture

Yasamin Vali, Mohammad Molazem*, Mohammad Mehdi Dehghan, Saeed Farzad Mohajeri, Zahra Safarian, Somayeh Davoodipour

Case Description - A two years old male German Shepherd dog
Clinical Findings - The patient was referred to small animal hospital, faculty of veterinary medicine, university of Tehran with history of jumping from stairs 2 weeks ago and immediately lameness on left fore limb. Clinical examination revealed week lameness on the left fore limb at the time of presentation.
Treatment and Outcome - Radiography revealed two symmetrical bony densities without any underlying defects in cranial aspects of both right and left shoulder joints in lateral radiographs. CT scan study revealed an avulsion fracture in the location of teres major tendon with underlying defect at left shoulder and two symmetrical bony compartments as well as radiography without any relation with underlying bones in transverse scans and three dimensional reconstruction. Described mineralized compartments diagnosed as supraspinatus mineralizing tendonopathy. The patient treated with antiinflammatory drugs and cage rest.
Clinical Relevance - Supraspinatus insertionopathy or tendinopathy involves the supraspinatus tendon becoming torn or strained over time. This chronic injury may not result in lameness until there is ossification of the tendon and impingement on the biceps brachii tendon, but lameness can occur without ossification On physical examination, the dog will exhibit pain when the shoulder is flexed and the tendon is palpated cranially over the shoulder joint; the dog may also exhibit pain when the biceps brachii tendon is palpated. Supraspinatus tendon injuries can be diagnosed with ultrasonography or magnetic resonance imaging (MRI), and injuries are often bilateral although CT scan will be of importance in diagnosis of supraspinatus mineralizing tendonopathy and differentiation from avulsion fractures.
Key Words - Supraspinatus Tendonopathy, Three Dimensional CT Scan, Avulsion Fracture

References

Radiological Evaluation of the Regenerated silk/bioglass Composite Scaffolds in Repair of Mandibular Defect in Rats

Poster Presentation
Objective- Regenerated silk/bioglass composite were prepared to combine the osteoconductive properties of biological apatite with aqueous-derived silk scaffold (SS) as a composite scaffold for bone regeneration. The aim of present study was to evaluate the effect of Regenerated Silk/bioglass to repair mandibular bony defects in a rat model.

Design- Experimental

Animals- 12-week-old male 43 rats with a weight of 250 g ± 15 g

Procedures- The animals were anaesthetized by intraperitoneal injection of pentobarbital (Nembutal 3.5 mg/100 g). An incision was made in the skin, followed by plane-by-plane muscle dissection and incision of the periosteum. A non-healing full thickness defects of 5 mm diameter in the ascending ramus of the mandibles was then created with a bur that was cooled continuously by 0.9% saline solution irrigation. A total of 24 mandibular defects were randomly divided into two groups whereas the cancellous bone Regenerated silk/bioglass composite was used to fill the defects in Group II. Radiography was done before and after creating defects and on 0, 2, 4, 6 and 8 weeks to evaluate local reaction. After 8 weeks post-operation, all the rats in each group were sacrificed by an intraperitoneal overdose injection of pentobarbital. Then the mandibles were explanted and fixed in 4% phosphate-buffered formalin solution. X-ray images of mandibles were made with a dental Xray machine (Trophy, France), from a distance of 7 cm (230 V, 8 mA) with an exposure time of 0.10 second.

Results- To evaluate new bone formation and the development of bone unions within the defects, X-ray images were taken at 0, 2, 4, 6 and 8 weeks after explantation of the mandible. A larger defined radiopaque mass representing new bone formation and mineralization was observed in the Regenerated Silk/bioglass group during three weeks.

Conclusion and Clinical Relevance- Osteoprogenitor cells, osteoconductive scaffolds and osteoinductive factors are the three main elements for forming tissue-engineered bone, also radiography is reliable techniques to trace local reaction at proper time (1). Considering the cytocompatibility of the scaffolds and osteogenic differentiation during three weeks, it could be concluded that the appropriate combination of structural and biological properties make the c scaffold a probable choice for potential use in bone grafts.

Key Words- Regenerated Silk/Bioglass Composites, Bone Graft, Radiography, Rat

References
Key Words- Broiler chickens, Breast muscle thickness, Fatness, Meatiness, Ultrasonography

References

Poster Presentation

An Unusual Case Report of Subcutaneous Abscess by Migration of Gastrointestinal Metallic Foreign Body: Imaging Diagnosis and Findings

Majid Masoudifard1, Mir Sepehr Pedram1, Somaye Davudypoor2,1, Zahra Saffarian1, Roja Ebrahim3, Shaghayegh Rafat Panah1, Shahrzad Mohammad Shah Ali2, Saeed Farzad1

1Department of Surgery and Radiology, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran
2Graduated of DVM, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran
Email: davudypoor@ut.ac.ir

Case Description- A two months old male puppy was presented to the surgery department of Veterinary Teaching Hospital, University of Tehran with a history of subcutaneous abscess and severe pain in the same area.

Clinical Findings- During the wound curettage a firm foreign body (FB) was found in the subcutaneous area. The patient was referred to the imaging department for more investigation. Radiographic findings revealed intra-abdominal metallic FB with migration to the left dorsal subcutaneous. Ultrasonography and CT-scan were also performed to detect exact position of the FB and the organs involved. Final diagnosis was a swallowed metallic FB inside the stomach which caused perforation of the gastric wall and diaphragmatic crura passed through the subcutaneous area (absscess formation), without lung involvement.

Treatment and Outcome- The puppy was treated surgically. FB was removed by a celiotomy procedure and the puppy was healed completely after 2 weeks.

Clinical Relevance- Foreign bodies in the animal GI tract are common. Balls, stones, rubber, bones, plastic, wood, magnet, linear FB, and ingested needle migration to the pancreas tail have been reported in humans and animals. Enterocutaneous fistula secondary to intra-peritoneal gauze FB or due to migration from the stomach in dogs have also been reported. Ultrasonography and radiographic studies can be helpful in localizing the FB in the abdominal cavity but CT-scan is the most reliable technique especially in the small metallic FB, which can show accurate location and identify intra abdominal small objects.

Key Words- Metallic foreign body, Computed Tomography, Subcutaneous abscess

References

Poster Presentation

Angiographic Study of the Ovine Pregnant Uterus

Fariba Mokhtari1, Asghar Mogheis1, Mohamad Saeed Ahrai Khafi2

1Student of Veterinary Medicine, School of Veterinary Medicine, Shiraz University, Shiraz, Iran.
2Department of Clinical Sciences, School of Veterinary Medicine, Shiraz University, Shiraz, Iran.
Email: golbarg_1990_m@yahoo.com

Objective- Knowledge about the status of uterine and ovarian arteries, communication and exchange of material between them has a great importance in anatomical and physiological studies of livestock reproductive system. Furthermore the mechanisms of luteolysis and vascular communication between twins are different in various livestock. Vascular arrangement, shape and size vary during pregnancy at different stages. Angiography has been used as a method for assessing the anatomical

Proceeding of the 4th International Symposium of Veterinary Surgery (ISVS)
21-23 Oct 2014, Mashhad, Iran
structure and pathological conditions of the vessels. However, its applications in livestock limited to referral reports and some pictures without details.

**Design-** Descriptive

**Procedures-** In this study, angiographic studies of the sheep uterine arteries at different ages of pregnancy were done. Pregnant uteri of sheep in different ages gathered from slaughterhouse. To determine the gestational age, ultrasonography (SIUI 900V, Linear probe 5-10 MHz) was used. Five age groups (30-40, 40-50, 50-60, 60-70 and 70-80 days of pregnancy) were considered. 30% Warmed barium sulfate suspension was used as contrast agent. Injection volume was proportional to the size of pregnant uterus. After the contrast is injected into the arteries of each uterine horn, radiographic image were taken, and the other branch was imaged next.

**Results-** Radiographs were able to precisely show uterine arteries and their branches. Furthermore small branches of the arteries and even tiny vessels in the caruncles were clearly visible.

**Conclusion and Clinical Relevance-** These result showed that angiography is a useful method for delineating development of uterine vessels during gestational period and is able to improve our knowledge about physiological and pathological processes of uterine function during pregnancy.

**Key Words-** Angiography, Sheep, Pregnant uterus, Artery

**References**


---

**Radiographic Measurement of Vertebral Heart Scale (VHS) in Hamster**

Moarabi A., Mosallanejad B, Khalaf Deris S.*, Maki Pour M.

**Department of Clinical Science, Faculty Veterinary Medicine, Shahid Chamran University of Ahvaz, Iran.**

**Email:** s_kh_deris@yahoo.com

**Objective-** Evaluation of cardiac measurements as a useful indicator in normal hamsters using VHS

**Design-** Descriptive

**Animals-** 17 adult healthy hamsters (7 male, 10 female) were selected with age range between 6-12 months and weight 75-125 gr

**Procedures-** The VHS was measured and compared on left to right (LL) and right to left lateral (RL) views. In this study the studied hamsters had normal cardiovascular system before challenging. Lengths of the long and short axis were measured with a ruler in millimeters. The dimensions were scaled against the length of the vertebrae beginning with the fourth thoracic vertebra.

**Results-** The VHS was 7.4± 0.02 vertebrae (mean ± SD) on right-to-left lateral and 7.5± 0.03 vertebrae on left-to-right lateral radiographs. No significant differences were observed in RL-long axis (RL-LA) and RL-vertebral heart size (RL-VHS) (P>0.05).

**Conclusion and Clinical Relevance-** Cardiac diseases are relatively emergent events among exotic animals, particularly hamsters. Imaging studies are important for definitive diagnosis before treatment. The vertebral heart scale (VHS) method is easy to use and objective for clinical practice. These values are useful as a new diagnostic index for cardiac diseases in hamsters.

**Key Word-** Hamsters, Vertebral Heart Scale (VHS), Radiography

**References**


---

**Radiological Evaluation of the Cancellous Bone Scaffold Coated with Nano-Hydroxyapatite in Repair of Radial Bone Defect in Rabbit**

Rasoul Rahimzadeh*1, Abbas Veshkini 2, Roham Vali3

1Assistant professor, Department of Clinical Sciences, Faculty of Veterinary Medicine, Sanandaj Branch, Islamic Azad University, Sanandaj, Iran.
2DVR, Associate Professor, Department of Radiology, Faculty of Veterinary Science, Science and Research Branch, Islamic Azad University, Tehran, Iran.
3Assistant professor, Department of Clinical Sciences, Faculty of Veterinary Medicine, Kazerun Branch, Islamic Azad University, Kazerun, Iran.

**Email:** drrahimzadeh@iausdj.ac.ir
Objective-This study was designed for evaluation of osteoconductive properties and radiological performance of cancellous bone scaffold coated with Nano-Hydroxyapatite as a bone defect filler and osteogenetic stimulation to speed up bone healing too.

Design-Experimental

Animals- Eighteen adult male New Zealand white rabbits randomly divided into three groups of 9 rabbits each.

Procedures- In this study eighteen adult male New Zealand white rabbits were anesthetized and a segmental full thickness bone defect of 10 mm in length was created in the middle of the right radial shaft in all rabbits. They were divided into two groups of 9 rabbits. Group I was considered as control and the fractured site was fixed using finger bone plate with 4 screws, whereas the cancellous bone scaffold coated with Nano-Hydroxyapatite was used to fill the gap after fracture fixation in Group II. Radiography was done before and after creating defects and on 0, 15, 30, 60 and 90 days to evaluate local reaction (2).

Results- On the radiographs during the whole process, bone repair in Group I was not as perfect as those in Group II samples and trace of internal callus filled the gap incompletely in 60 days in Group I, whereas in Group II internal callus almost was formed on 30 days and in addition intercortical callus was seen supporting to cover and filled the gap completely in this group in 60 day.

Conclusion and Clinical Relevance- These results indicate that the Nano-hydroxyapatite with more features and shorter in time, made possible the reconstruction of bone tissue and alternative techniques as well as previous bone graft, also radiography is reliable techniques to trace local reaction at proper time.

Key Words- Nano-hydroxyapatite, Cancellous Bone Scaffold, Radiography, Rabbits

References

Case Description- In this study two cases are described. A 12-months old female DSH cat with history of pregnancy. Another patient was 13 months old male Persian cat with history of hematuria.

Clinical Findings- Case 1 was referred to imaging department to confirm pregnancy and number of fetuses. In VD view hip dysplasia radiographic signs and SDJD were incidentally found. In case 2 radiographic study was performed to assessment of urinary system but on VD view bilateral Hip subluxation was incidentally found.

Treatment and Outcome- Because of no clinical signs of hip joint pain or lameness, surgical or medical treatment were not performed in these patients.

Clinical Relevance- Hip dysplasia is a congenital disease that usually affects both hip joints and may lead to pain and osteoarthritis. It occurs more commonly in female and purebred cats. The overall incidence of feline hip dysplasia may be as high as 32%. The diagnosis is usually made on a VD extended hip view identical to the positioning used in dogs. In most cases, cats with clinical signs of hip dysplasia are treated with cage rest for 2–3 weeks. Long-term medical management can be used but is rarely indicated. Total hip replacement or femoral head and neck excision arthroplasty can be performed if clinical signs persist after conservative therapy.

Key Words- Feline Hip Dysplasia, Congenital disease, Persian cat

References
Objective- Anatolian donkey is an ancient breed. There are relatively few studies examining the tendons anatomy in the Anatolian donkey. This study was performed to evaluate the Metacarpal Tendons and Ligaments, based on anatomical and ultrasonographic features.

Design- Original Study

Animals- This study was performed on 6 male healthy donkeys 5 to 7 years.

Procedures- The metacarpal region of the left and right forelimbs were shaved and the study was done on the palmar area. Ultrasonographic device, vet pie medical 100 falco, with an 8Mhzlinear transducer was used. The shaved area divided to 6 levels 1a, 1b, 2a, 2b, 3a and 3b. ultrasonographic cross section area (CSA) measurement of tendons and ligaments were obtained by scion Image software.

Results- All the structures started to appear with an acceptable contrast and visibility at the 2a level. SDFT and DDFT were well observed from the level 2a; however, no definite borders were recognizable as ICL (except one case) and echogenicity of DDFT from the 2b level was hyperechoic to isoechoic comparing SDFT and SL. No significant difference was observed between the sizes of tendons and ligaments in the right and left forelimbs in the present study and the area of transverse sections of DDFT were more than SDFT in all levels and the area of SL was more than SDFT in the observable surfaces.

Conclusion and Clinical Relevance- It is assumed that transverse images provide a better image of tendons and ligaments and any injury in any part of the above structures can be diagnosed easily, however some probable injuries around the tendon may be left unseen in longitudinal images.

Key Words- Anatolian Donkey, Metacarpal, Ultrasonography

References

Poster Presentation

Prevalence of Diagnosable Diseases in Hamsters by Diagnostic Imaging: A Retrospective Study

Shadi Musavi1, Sarang Soroori*2, Mohammad Molazem2, Yasamin Vahi1, Maryam Iranmanesh2

1DVM, Private Practitioner.
2Department of Surgery and Radiology, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran. 
Email: Soroori@ut.ac.ir

Objective-The aim of present study was evaluation of diagnostic imaging records to calculate prevalence of diseases in referral hamsters which were referred to diagnostic imaging department of small animal hospital, faculty of veterinary medicine, university of Tehran.

Design- Retrospective study

Animals- 56 hamsters which were kept as pets

Procedures- For this purpose, all the diagnostic imaging records were reviewed from January 2011 to May 2014. The images which were related to hamsters were included to present study contain radiographs and ultrasonograms.

Results- Totally 85 records related to 56 patients were included (some patients were evaluated with both radiography and ultrasonography at same time). The most frequent diagnosed disease was atrial thrombosis (17.85%) and consequent ascites and plural effusion (12.5%), pyometra (8.92%) and intervertebral disc diseases (5.35%) respectively. Other miscellaneous disorders which were diagnosed sporadically contained subcutaneous abscess, enteritis, metabolic bone disease, chronic renal disease, urolithiasis, hepatic calcification and testicular neoplasm. 

Conclusion and Clinical Relevance- The importance of small exotic mammals as veterinary patients has continued to grow and in some practices these animals form a significant percentage of the clientele. At the same time, knowledge regarding the anatomical, physiological, and pathophysiological characteristics of these patients has rapidly increased. In addition, the demands by many small exotic mammal owners for quality medical care for their animals has clearly continued to rise. The expectations of these owners have even progressed to specific requests for advanced radiographic and ultrasonographic imaging tests. Recent technical advances make it possible to routinely use these imaging modalities in small exotic mammals.

Key Words- Hamsters, Radiography, Ultrasonography
Poster Presentation

Ultrasonographic Diagnosis of Ruptured Cranial Cruciated Ligament in a Marghoz Goat

Yaser Ghiasvandi1, Rasoul Rahimzadeh2, Payam Hajizadeh3

1DVM Student, Faculty of Veterinary Medicine, Sanandaj Branch, Islamic Azad University, Sanandaj, Iran.
2Assistant Professor, Department of Clinical Sciences, Faculty of Veterinary Medicine, Sanandaj Branch, Islamic Azad University, Sanandaj, Iran.
3Young Researchers and Elites Club, Sanandaj Branch, Islamic Azad University, Sanandaj, Iran.
Email: Ghiasvandy@yahoo.com

Case Description- A non descript female Marghoz goat weighing 25 Kg was presented to the Department of Clinical Sciences, Sanandaj Branch with a history of fall in a pit.

Clinical Findings- The animal was not able to bear weight on its right hind leg. On clinical examination, positive drawer sign was present. Radiography revealed joint effusion. Detailed ultrasonography revealed the stump of ruptured cranial cruciate ligament. The sagittal image taken by placing 7.5 MHz linear transducer at the infrapatellar region with stifle joint flexed maximally revealed the stump of ruptured cranial cruciate ligament, which appeared as hyporeflective and was seen at the insertion of tibia. Both medial and lateral menisci were normal and appeared as hyper reflective triangular in shape, pointed axially.

Clinical Relevance- Stifle is the most complex joint of the body due to its intra-articular ligaments i.e. cranial and caudal cruciate ligaments. Rupture of the cranial cruciate ligament is one of the most common orthopedic injuries that results in hind limb lameness. A partial or complete tear of the cruciate ligament leads to instability of the joint, causing pain and lameness [1]. 7.5 MHz linear probe facilitates easy visualization of structures of stifle and thus holds promise for accurate, noninvasive diagnosis of stifle joint pathology in goats [2].

Key Words- Stifle, Ultrasonography, Marghoz goat, Cruciate ligament, Rupture

References

Echocardiographic Diagnosis of Dirofilaria Immitis in Ectopic Sites in Dog

Behzad Mirzayi1, Rasoul Rahimzadeh2, Arsham Nosratpour3, Hamid Ranjbar4

1DVM Student, Faculty of Veterinary Medicine, Sanandaj Branch, Islamic Azad University, Sanandaj, Iran.
2Assistant Professor, Department of Clinical Sciences, Faculty of Veterinary Medicine, Sanandaj Branch, Islamic Azad University, Sanandaj, Iran.
3Young Researchers and Elites Club, Sanandaj Branch, Islamic Azad University, Sanandaj, Iran.
4Email: mirzayi.behzad@gmail.com

Case Description- A 4.5 year old mixed breed dog.

Clinical Findings- A 4.5 year old mixed breed dog was referred to the clinic. Two-dimensional echocardiograms were obtained using a sectorial echocardiograph equipped with an ECG cable. The transducer was placed at the right sternal border between the second to fourth intercostal space (Echo-window) and contact with the chest wall was made with ultrasonic gel. Clinical examination revealed weakness, icterus, tachycardia and a heart murmur. According to this symptom, Cavalli syndrome or symptoms of heart worm suspected. In experiments performed on serum, increased serum bilirubin, alkaline phosphatase, leukocytosis and anaemia was normocytic normochromic was seen, cardiovascular echocardiography was performed to confirm the diagnosis of heart worms in ectopic area of abdominal aorta and its branches in the hypoechoic nodules in posterior left lobe of the liver were observed.

Clinical Relevance- In some infections, worms may be detected in the pulmonary artery and/or right heart. Echocardiography can be useful to estimate worm burden, the presence of tricuspid regurgitation, and the severity of pulmonary hypertension. A diagnosis of caval syndrome can be confirmed with echocardiography. Infection with the intravascular parasite Dirofilaria immitis is an increasingly recognized problem in domestic dogs and cats. Heartworm infection is preventable; however, once an animal is infected, heartworm disease and potentially life-threatening complications can develop. Echocardiography is sensitive in detecting right heart dysfunction in which the right ventricular end diastolic dimension and right ventricular...
free wall thickness are increased (i.e., right-sided heart enlargement).

**Key Words:** Echocardiography, Dirofilaria immitis, Dog, Heart worm

**References**

**Poster Presentation**

**Ultrasonographical Diagnosis of Right-sided Dilatative Cardiomegaly in Parrot: A Case Report**

Behzad Mirzayi*1, Rasoul Rahimzadeh2, Pejman Nazem Zomorodi2

1 DVM Student, Faculty of Veterinary Medicine, Sanandaj Branch, Islamic Azad University, Sanandaj, Iran.
2 Assistant Professor, Department of Clinical Sciences, Faculty of Veterinary Medicine, Sanandaj Branch, Islamic Azad University, Sanandaj, Iran.

Email: mirzayi.behzad@gmail.com

**Case Description:** A 10-year-old grey parrot (Psittacus erithacus) in poor condition was presented for evaluation of chronic, severe dyspnea including a harsh, high-pitched respiratory sound.

**Clinical Findings:** Radiographic findings were inconclusive and ultrasonography was performed. Ultrasonographic diagnosis was right-sided dilatative cardiomegaly consistent with decompensated atrioventricular valve insufficiency with hepatic congestion and severe coelomic effusion Right lateral and ventrodorsal radiographs of a grey parrot: There is severe loss of serosal detail in the coelomic cavity, which is enlarged and of soft tissue opacity. Complete loss of hepatic waist is apparent on the ventrodorsal radiograph with a plump silhouette of the heart. The ventriculus is and abdominal air sacs are seen. Ultrasonographic images of a grey parrot, in sagittal and transverse planes, through the ventromedian window: The right ventricle, which normally does not reach the cardiac apex, is severely enlarged compared to the left ventricle. Heart and liver are surrounded by a large amount of anechogenic free fluid. The liver parenchyma appears hyperechogenic, and the liver margins are blunted. Slightly displaced caudally and ventrally.

**Treatment and Outcome:** After drainage of 13 ml transudate from the coelomic cavity, treatment with enalapril, an angiotensin converting enzyme (ACE) inhibitor (1 mg/kg PO q12h) was initiated.

**Clinical Relevance:** The animal recovered well over the following days.

**Key Words:** Ultrasonography, Radiography, Parrot, Cardiomegaly

**References**

**Poster Presentation**

**Quantitative and Qualitative Scintigraphic Measurement of Kidney in Rat after Saffron Administration**

Dariush Vosough1, Mohammad-Reza Esmaili-Nejad2, Parham Razavi Ebrahimi2, Adel Mir-Jordavi3

1 Department of Clinical Sciences, Faculty of Veterinary Medicine, Shahid Bahonar University, Kerman, Iran.
2 Veterinary Students, Faculty of Veterinary Medicine, Shahid Bahonar University, Kerman, Iran.
3 Graduated Student, Faculty of Veterinary Medicine, Shahid Bahonar University, Kerman, Iran.

Email: Esmaili.mreza@yahoo.com

**Objective:** Using the modern techniques is really necessary in accurate diagnosis of kidneys abnormalities in these days. This study was done to determine function of the kidneys after Saffron administration by using dynamic scintigraphy.

**Design:** Original Study

**Animals:** In this study six male white rat were used.

**Procedures:** In this study dynamic scintigraphic examination by gamma camera and 99mTc-DTPA was used as radiopharmaceutical. Peak activity percentage, time to peak activity (Tmax), emptying half time (T1/2), three min activity, total and individual GFR are the parameters that were determined before and after Saffron administration separately. We followed the shape of the time activity curves (TACs) for analyzing the function of kidneys.

**Results:** the parameters in left and right kidneys were determined as follow:

- Peak activity percentage: Left: 51.83 ± 0.095, Right: 48.5±1.17
- T1/2: Left: 3.43±2.26, Right: 2.61±1.15
- Tmax: Left: 2.68±0.29, Right: 1.95±0.05
- Total GFR: 173.46±11.77

**Conclusion and Clinical Relevance:** According to the current study, Saffron as the herbal medicinal plant can
be used to increase renal blood flow effectively due to the increase in GFR and decrease in emptying half time (T1/2).

Key Words- Scintigraphy, Kidney, Saffron

References

Poster Presentation

Incidence of Hip Dysplasia in Large Breed Dogs Referred to Veterinary Faculty Teaching Hospital of Ferdowsi University of Mashhad: A Preliminary Study

Somaieh Jafari Doost*1, Masoud Rajabioun 2, Hossein kazemi Mehrjerdi2, Ali Mirshahi2
1DVM Graduated, Faculty of Veterinary Medicine, Ferdowsi University of Mashhad, Mashhad, Iran.
2Department of Clinical Science, Faculty of Veterinary Medicine, Ferdowsi University of Mashhad, Mashhad, Iran.
Email: jafaredust_s@yahoo.com

Objective- A preliminary study of hip dysplasia incidence in large breed dogs

Design- Descriptive study

Animals- 36 dogs in different breeds

Procedures- All of the dogs were examined for Hip dysplasia using Standard ventrodorsal hip extended view, and graded into five categories (A, B, C, D and E) based on the FCI scoring system. Before radiographic examination clinical examination was performed. The Ortolani method was done to evaluate hip joint laxity.

Results- Hip dysplasia was found in 72.2% of the dogs, which included 11.1% unilateral and 61.1% bilateral. 73% of the positive cases were male. In respect to clinical sign related to hip joint, 14 and 22 dogs were positive and negative, respectively. Hip dysplasia was diagnosed radiographically in 11 and 15 dogs with or without clinical sign, respectively. Ortolani test represented false negative in 33 cases and false positive in 6 cases.

Conclusion and Clinical Relevance- Presence of clinical signs and the results of the ortolani test is not a sensitive indicator for diagnosis of the hip dysplasia. Radiological evaluation of hip joint is essential in susceptible breeds for diagnosis of hip dysplasia.

High percentage of the large breed dogs with dysplastic hip joint is the important issue and screening program is necessary for detecting hip dysplasia in large breed dogs.

Key Words- Dog, Radiology, Hip Dysplasia, FCI Grading, Mashhad

References

Poster Presentation

Survey of Cataract Cases in Dromedary Camels (Camelus Dormedarius) With B-Mode Ultrasonography

Mohammad Sadegh Ashtari*1, Mehrdad Yadegari2, Sajad Tavakol3
1Resident of Veterinary Radiology, Science and Research Branch of Islamic Azad University, Tehran, Iran.
2Department of Radiology, Faculty of Veterinary Medicine, Shahrekord Branch, Islamic Azad University, Shahrekord, Iran.
3Graduated Veterinarian, Shahrekord Branch, Islamic Azad University, Shahrekord, Iran.
Email: m.s.ashtari@gmail.com

Objective- Ultrasonography is a relatively easy, safe, and non-invasive examination method which can be used in diagnosis of ocular disorders as complementary to routine ophthalmic examinations .Current study focus on incidence of all kind of cataract in Dromedary Camels with ultrasonography.

Design- Descriptive study

Animals- For this purpose 30 female and male Dromedary Camels which randomly selected during 1 month in one of the slaughter houses near Esfahan.

Procedures- Trans corneal B-Mode ultrasonography was performed on both eyes in each camel for evaluating any kind of cataract. Ultrasonographic dimension of all ocular structure (lens thickness, anterior chamber, vitreous chamber, and anterior posterior length) of these cases saved

Results- Result shows 15% bilateral cataract, 5 % unilateral cataract which may cause by trauma and 5% cataract which cause of foreign body.
Conclusion and Clinical Relevance- ageing process, diabetes, sun light, increase in weight and many other can cause cataract, current study showed occurrence of 16.6 percent cataract in study population.

Key Words- Dromedary Camels, Ultrasonography, Cataract

References

Poster Presentation

Ultrasonographic and Anatomic Description Study of SDF and DDF Tendons in Asil Horse

Dariush Vosough1, Sogand Lahuti*2, Mohammad-Reza Esmaili-Nejad3

1Department of Clinical Sciences, Faculty of Veterinary Medicine, Shahid Bahonar University, Kerman, Iran. 
2Veterinary Students, Faculty of Veterinary Medicine, Shahid Bahonar University, Kerman, Iran. 
3Email: sogand.lahooti@gmail.com

Objective– Arabian horse is one of the strongest breeds in horse racing because of its unique locomotion structure. Palmar metacarpal tendinitis and desmitis is one of the major causes of laminitis in equestrian. Ultrasonographic study of SDF and DDF tendons with anatomical study of the structure is a useful way to diagnose tendon and ligament injuries. There is relatively few sonographic data about Asil (known in the west as the Arab) horse.

Design- Original Study

Animals- This study was performed on 10 healthy Asil mares.

Procedures-The metacarpal region of the left and right forelimbs were shaved and the study was done on the palmar area. Ultrasonographic device, vet pie medical 100 falco, with an 8Mhz linear transducer was used and then longitudinal and transversal images were taken. The shaved area divided to 4 levels 1a, 1b, 2a and 2b. ultrasonographic cross section area (CSA) measurement of tendons were obtained by scion Image software. Most important index in tendon injuries diagnosis is changing in the size and also changes in echogenicity and shape of these structures. In current study, transverse section area, thickness, width, ecogenicity and normal shape of tendons in metacarpal area by ultrasonographic indexes were calculated.

Results- The parameters were determined as follow:
Thickness: SDFT: 5.82mm – DDF: 8.2mm
Transverse section area: SDFT: 42.24 mm² – DDF: 96.57mm²
Width: SDFT: 13.02mm – DDF: 12.01mm
Ecogenicity in the all levels: SDFT > DDF

Conclusion and Clinical Relevance- According to the results of measurements of SDFT and DDF, the SDF tendon was thicker and wider than DDF tendon, but DDF was hyperechoic than SDFT and the Transverse section area is bigger in DDF.

Key Words- Asil Mare, SDFT, DDF, Ultrasonography

References
metacarpo/metatarsal regions and mid proximal phalanx of forelimb/ mid proximal phalanx of hindlimb regions were measured on all graphs in lateromedial and dorsopalmar/plantar views. Available data were analyzed statistically and average, standard errors and P-values were given. Important characteristic of measurements were discussed.

**Results**- C/D ratios of mid metacarpal region, just proximal to its bifurcation and mid lateral and medial proximal phalanx of forelimb in lateromedial view were 0.2 ± 0.02, 0.14±0.002, 0.19 and 0.18±0.08 respectively. C/D ratios of mid metatarsal region, just proximal to its bifurcation and mid lateral and medial proximal phalanx of hindlimb in dorsopalmar and dorsoplantar views were 0.22±0.02, 0.15±0.08, 0.23±0.09 and 0.25±0.05 respectively.

**Conclusion and Clinical Relevance**- This study showed that there were no significant differences between C/D ratios in all regions. All cortical thickness and diameter in lateromedial view between proximal phalanx of forelimb-hindlimb didn’t show significant difference (P>0.05) but cortical thickness of mid metatarsal region was more than it in metacarpal region significantly (P<0.05).

In addition radiography and CT scan are better than MRI to bone descriptions.

**Key Words**- MRI, Bone cortex to diameter ratio, One humped camel

**References**


**Poster Presentation**

**CT Myelography vs. MRI for Detection of Spinal Infarction: A Case Report**

**Case Description**- A stray domestic short hair cat with unknown history

**Clinical Findings**- The patient was referred to small animal hospital, faculty of veterinary medicine, university of Tehran with paraplegic hind limbs, lower motor neuron sings and positive nociception.

**Treatment and Outcome**- As well as Radiography, Three dimensional plain CT scan of vertebral column revealed no signs of bone involvements. Mylograghy by the mean of CT scan was suggestive of the spinal cord swelling at the location of L6-L7 due to narrowing the contrast agent within the subarachnoid space. Magnetic resonance imaging revealed T2W hyperintense foci (“owl eye” appearance) within the spinal paranchyma at the suspected location that based upon comparison to human cases; spinal cord infarction was considered as the first differential diagnosis option. The patient underwent the cortontherapy and physiotherapy but it died after 4 months due to a systemic infection with gastrointestinal manifestations.

**Clinical Relevance**- Myelography or computed tomography myelography is required if survey spinal radiographs are normal. The benefits of myelography include rapid and economical evaluation of the whole spine. The main disadvantages are difficulties in performing and interpreting the test, and lack of sensitivity for intramedullary spinal cord lesions. MRI can detect the subtle differences in tissue contrast without the use of myelography.

**Key Words**- Magnetic Resonance Imaging, Computed Tomography, Spinal Cord, Infarction

**References**

2. Schwarz, Tobias, and Jimmy Saunders. “Veterinary Computed Tomography.”

**Poster Presentation**

**CT Anatomy of the Pelvic Cavity of the Female Iranian Jebeer**

**Objective**-Computed tomography (CT) is an imaging procedure widely used to help diagnose the cause of diseases. This is one of the safest ways to study the anatomy of the animals and reduce or avoid the need of
invasive procedures to examine the body. This non-invasive advantage is especially important for the species that is in danger of extinction. One of these species is Iranian Jebeer.

**Design-** Descriptive Study

**Animals-** Three Female Iranian Jebeer

**Procedures-** Spiral CT images were taken from pelvic cavity perpendicular to the long axis of the sacrum. Each animal was anesthetized and restrained in sternal recumbency in wooden handmade frame and the images were taken.

**Results-** In the images taken from initial part of pelvis the rectum embedded in the roof of the pelvic cavity and ovaries were under the rectum on each side of pelvis. Caudoventral blind sac of the Rumen, Apex of cecum and part of jejunum can also be seen in this part. In other serial images of the pelvis, oviducts and bladder can be observed.

**Conclusion and Clinical Relevance-** By using CT images from pelvis in the Iranian Jebeer, female genital system, some part of alimentary tract and also bladder can be evaluated. These images give valuable information about these structures.

**Key Words-** Iranian Jebeer, CT scan, Pelvic cavity

### References


---

**Poster Presentation**

**Excretory Urography by Intramuscular Injection in Quail**

Hamid Ranjbar*¹, Behzad Mirzayi¹, Arsham Nosratpour¹, Rasoul Rahimzadeh²

¹DVM, Faculty of Veterinary Science, Sanandaj Branch, Islamic Azad University, Sanandaj, Iran.
²Assistant professor, Department of Clinical Sciences, Faculty of Veterinary Medicine, Sanandaj Branch, Islamic Azad University, Sanandaj, Iran.

Email: hamid.ranjbar13688@gmail.com

**Objective-** Radiographic contrast examinations, excretory urograms and cloacograms are indicated for a defining the kidney against the surrounding organs; renal neoplasia or cysts and renal insufficiency; and any urinary obstructive diseases, etc. Excretory urography remains the first choice for the diagnosis of these affections, as it could not be replaced by the recently invented diagnostic techniques like ultrasonography. Although intravenous injection of contrast medium is routine, some difficulties magnify necessity of practical and useful alternative administration.

**Animals-** 6 clinically healthy quails

**Procedures-** For this purpose 6 clinically healthy quails were selected and blood sampling was performed for determination of BUN for confirming the healthy kidneys. The contrast media was warmed to body temperature and injected slowly intramuscular. Lateral and Dorsoventral radiographs were obtained immediately, 30 second, 45 second, 60 second 1 minute, 2 minutes, 4 minutes and 5 minutes after injection.

**Results-** Kidneys and ureters were detectable after 45 seconds and cloaca and terminal gut were obvious after 3 minutes. There was no clear distinct separation into cortex and medulla in the nephrogram phase.

**Conclusion and Clinical Relevance-** The results showed that intramuscular can be the best route for administration of contrast medium for excretory urography in birds because of good enhanced nephrogram.

**Key Words-** Excretory urography, Quail, Intramuscular injection

### References


---

**Radiographic Changes of Hypovitaminosis A in Parrot and Compare of that with Other Species**

Arsham Nosratpour*¹, Behzad Mirzayi¹, Hamid Ranjbar¹, Rasoul Rahimzadeh²

¹DVM, Faculty of Veterinary Science, Sanandaj Branch, Islamic Azad University, Sanandaj, Iran.
²Assistant Professor, Department of Clinical Sciences, Faculty of Veterinary Medicine, Sanandaj Branch, Islamic Azad University, Sanandaj, Iran.

Email: arshamnp@gmail.com

**Case Description-** An adult female parrot was presented for severe dyspnea (open mouthed gasping) and diarrhea. A large, ulcerated pharyngeal mass was evident on physical examination. Low vitamin A in the diet may result in a suboptimal immune response. Numerous clinical problems may be associated with
hypovitaminosis A. Small with pustules may be seen in the mouth, esophagus, crop or nasal passages.

Clinical Findings - Radiographic changes include gaseous of the crop, gastrointestinal tract and cloaca. The gaseous distension (aerophagia) was related to gasping for air associated with an occluded glottis. The oval mass was characterized by market epithelial acanthosis and parakeratosis. The lungs were congested and hemorrhagic. In chicks acute hypovitaminosis A has been associated with weakness, incoordination and ataxia. These symptoms must be deferential from "crazy chick disease" caused by hypovitaminosis E. In mild cases of hypovitaminosis A, particularly in budgerigars, the only clinical signs may be polyuria and polydipsia Kidney damage and gout my occur if squamous metaplasia causes partial or complete occlusion of the ureters. Reduced egg production, egg binding or poorly formed egg shells (pitted) are common in hens with hypovitaminosis A.

Treatment and Outcome - In the number of avian species, vitamin A levels in the liver of less than 50 IU/mg have been found to correlate with the occurrence of squamous metaplasia elsewhere in body.

Clinical Relevance - Hypovitaminosis A should be initially treated with parental supplementation. Oral administration in the food and modification of the diet to include natural sources of beta carotene is recommended. Zinc level in the diet should be sufficient to allow for normal vitamin A function. Liver disease may decrease the bird’s ability to store vitamin A .The bird did not respond to emergency care. The oval mass was characterized by market epithelial acanthosis and parakeratosis. The lungs were congested and hemorrhagic. Cystic hyperplasia was evident in the pancreatic ducts. The diagnosis was severe hypovitaminosis A and syringial granuloma.

Key Words - Radiography, Parrot, Hypovitaminosis A

References

Poster Presentation

Normal Left Ventricular Systolic Time Intervals in Baluchi Sheep Assessed by M-mode Echocardiography

SOLMAZ SHOJAIEAN*1, ALI MIRSHAHI2, ALIREZA TAGHAVI RAZAVIZADEH2, ALIREZA VAJHI3, MOHAMAD AZIZZADEH2

1Graduated Doctor of Veterinary Medicine, Faculty of Veterinary Medicine, Ferdowsi University of Mashhad, Mashhad, Iran.
2Department of Clinical Sciences, Faculty of Veterinary Medicine, Ferdowsi University of Mashhad, Mashhad, Iran.
3Department of Clinical Sciences, Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran.

Email: Solmazshojaian@yahoo.com

Objective - Baluchi sheep is the most abundant race of sheep in Iran. No information has been published about normal echocardiographic parameters of this sheep. With regard to racial frequency, economic importance and being native of this breed in the province of Khorasan, the present study was designed to determine the normal left ventricular systolic time intervals by M-mode echocardiography.

Design - Cross-sectional study

Animals - Twenty-two adult Baluchi sheep (11 ewes and 11 rams), aged 1-4 years (mean ± SD: 2.32 ± 1.08 year), and weighting 30-62 kg (mean ± SD: 46.04 ± 10.9 kg) that were clinically and hematologically healthy were included in this study.

Procedures - The left ventricular systolic time intervals, pre-ejection period (PEP) and left ventricular ejection time (LVET) were measured, and the values of the left ventricular total electromechanical systole (LVTES) and the PEP-to-LVET ratio were calculated. Short-axis views of the left ventricle at the level of the aortic valve view in the 4th right intercostal window were used to measure these indices by M-mode echocardiography.

Results - In this study, PEP (mean ± SD: 0.043±0.007), LVET (mean ± SD: 0.186±0.025), LVTES (mean ± SD: 0.229±0.026), PEP-to-LVET ratio (mean ± SD: 0.233±0.046) were reported. No significant regurgitation jets were seen around the valves by color flow Doppler evaluation.

Conclusion and Clinical Relevance - This measurement can be used as standard and reference values for evaluation of cardiovascular disorders of Baluchi sheep.

Key Words - Echocardiography, M-mode, Baluchi Sheep, Systolic Time Intervals, Normal

References

Poster Presentation

Radiographic Anatomy of the Gall Bladder and Related Ducts in Iranian Jebeer

Seyed Mohsen Sajjadian*1, Mohammad-Reza Esmaili-Nejad2, Parham Razavi Ebrahimi2

1Department of Basic Sciences, Faculty of Veterinary Medicine, Shahid Bahonar University of Kerman, Kerman, Iran.
2Veterinary Student, Faculty of Veterinary Medicine, Shahid Bahonar University of Kerman, Kerman, Iran.
Email: sajjadian@uk.ac.ir

Objective- Radiography is used to aid diagnosis and treatment of diseases and useful to evaluate the abdominal organs such as liver. Jebeer is one of the species in danger of extinction. This study was done to provide a reference anatomy of the Jebeer gall bladder and related ducts by using Radiology.

Design- Descriptive study

Animals- Three intact liver of the Jebeer was provided.

Procedures- After providing the samples, different substances were injected to the gall bladder and ducts. The following describes the substances injected:
Sample 1: barium sulfate suspension
Sample 2: mixture of Gelatin and oxide chrome opaque
Sample 3: Colored chalk solution
The radiograph images were taken from the first and second samples, perpendicular to the visceral surface of the liver and the third sample was sent for anatomical evaluation.

Results- Gall bladder is a small sac, embedded between caudate and right lobe of the liver. Fine hepatocystic ducts were observed in this study. The cystic duct was short and before the liver hilum a branch from the adjacent liver lobe, attaches to it. The cystic duct attaches to the junction of left & right common hepatic duct and common bile duct, adjacent to the liver hilum.

Conclusion and Clinical Relevance- In the Jebeer, the size of the gall Bladder is small in compared with the other ruminants and gall bladder shape is more sacs like than pear like in this species. Also there are some differences in hepatic ducts attachments to the lobes of the liver, seen in this study.

Key Words- Jebeer, Gall bladder, Ducts, Radiography

References

Poster Presentation

Radiographic Anatomy of Tarso-metatarsal and Digital Bones in Turkey

Seyed Mohsen Sajjadian*1, Hadi Hassibi2, Mohammad-Reza Esmaili-Nejad3, Parham Razavi Ebrahimi3

1Department of Basic Sciences, Faculty of Veterinary Medicine, Shahid Bahonar University of Kerman, Kerman, Iran.
2Postgraduated Student of Veterinary Surgery, Faculty of Veterinary Medicine, Shahid Bahonar University, Kerman, Iran
3Veterinary Student, Faculty of Veterinary Medicine, Shahid Bahonar University of Kerman, Kerman, Iran.
Email: sajjadian@uk.ac.ir

Objective- Turkey is one the precious ratites with high nutritional value. Knowing the anatomy of the turkey body, can enhance the breeding methods and also help to prevent the related diseases.

Design- Descriptive study

Animals- Four intact Turkey was provided.

Procedures- Radiographic images were taken from tarso-metatarsal and digital bones in the dorso-plantar, medio-lateral and latero-medial positions. All the images were studied and compared anatomically with dissected intact turkeys.

Results- Tarso-metatarsal bone in turkey has three branched distal end. Each end has its condylar articular surfaces. The turkey has 4 digits, named 1st to 4th from medial to lateral.

The first digit has 3 phalanges. The second digit has also 3 phalanges and articulate with medial branch of tarso-metatarsal distal end. The third digit attached to the middle branch of tarso-metatarsal distal end and has 4 phalanges. The fourth digit has 5 phalanges and attached to the lateral branch of tarso-metatarsal distal end.

Conclusion and Clinical Relevance- It seems that having 4 digits give an appropriate contact surface to the turkey and help the ratites to keep its balance at the best way.

Key Words- Turkey, Radiography, Tarso-metatarsal bone, Digits

References
MRI Description of SDFT and DDFT of Metatarsal Region of the Pakestanian Goat

Mohammad Nasser Nazem1, Omid Tavakkoli2, Fahimeh Pour Jafar Abadi2

1Assistant professor, Department of Basic Sciences, Faculty of Veterinary Medicine, Shahid Bahonar University of Kerman, Kerman, Iran.
2Undergraduate Student, Faculty of Veterinary Medicine, Shahid Bahonar University of Kerman, Kerman, Iran.
Email: nnazem@uk.ac.ir

Objective- The present study aimed to describe consider the possibility of MRI evaluation of the plantar tendons and prepare a standard reference for it.

Design- Descriptive study

Animals- 5 healthy Pakestanian goats’-age 3 year- no clinical sign of lameness and prior to presentation.

Procedures- Sagittal, Dorsopalmar and Transverse MRI images of metatarsal region of 5 goats were obtained using "Hitachi T2-NT a magnet of 0.2 Tesla and T1 Weighted sequence". The MRI images showed detail of the metatarsal region of these animals and then compared with them by anatomy references.

Results- SDFT and DDFT were well observed from the level of proximal of the metatarsal bone. No definite borders were recognizable as ICL and echogenicity of the metatarsal region of these animals and then compared with them by anatomy references.

Conclusion and Clinical Relevance- Investigations have proved that there's no difference between the echogenicity of each tendon s different levels in the left and right hind limb.

Echocardiographic Evaluation of Aortic Valve Placed in Thoracic Aorta of Sheep Model

Hamid Tavanaeimani1, Mohammad Reza Mokhber Dezfoul2, Farzad Hayati3, Mohammad Mehdi Dehghan4, Hessamedin Akbarain5

1Assistant Professor of Large Animal Internal Medicine, Department of Internal Medicine, University of Tehran, Iran.
2Professor of Large Animal Internal Medicine, Department of Internal Medicine, University of Tehran, Tehran, Iran.
3Resident of Veterinary Surgery, Department Of Surgery, Faculty of Veterinary Medicine, University of Tehran, Iran.
4Professor of Veterinary Surgery, Department of Surgery, Faculty of Veterinary Medicine, University of Tehran, Iran.
5Member of Iranian Veterinary Epidemiology Association
Email: Farzaddr81@yahoo.com

Objective- Prosthetic valve (PV) replacement is a widespread procedure in individuals with cardiac valve dysfunction. Valvular replacement is the most prevalent method of treating advanced cardiac valves dysfunction. One of the main concerns about prosthetic valve dysfunction is their life threatening potential. Transthoracic echocardiography (TTE) is a noninvasive diagnostic method for prosthetic valves evaluation. The particular accuracy, noninvasive nature, broad availability, as well as absence of exposure to ionizing radiation have established echocardiography/Doppler as the standard for the clinical assessment of heart valve function, including the assessment of hemodynamics after aortic valve replacement (AVR). This enables immediate evaluation of replaced valve soon after surgery and provides critical and specific information about hemodynamic status of the valves. Color Doppler and spectral Doppler are the main echocardiographic procedures for hemodynamic assessment. Flow velocities across a PV should be assessed by continuous wave Doppler (CWD) the same as in a native valve and also peak and mean gradients ought to be calculated. PV may result in obstruction especially in patient-prosthetic mismatch and may cause functional obstruction despite well mechanical performance. Regurgitation is another complication after PV replacement which is often difficult to assess particularly in mechanical prosthetics.

The purpose of this study was TTE evaluation of tissue engineered aortic valve (TEAV) placed in thoracic aorta of sheep model and assessment of our TEAV post operative hemodynamic values.
We used echocardiograph machine (Micro Maxx: SonoSite Inc, Bothell, WA, USA) with a phase array transducer (1-5 MHz). Velocity time integral (VTI), time to peak (TTP), mean and maximum velocity (velocity_mean and velocity_max) and mean and maximum pressure gradient (PG_mean and PG_max) were measured and data was compared statistically at four mentioned times.

**Results** - Color Doppler finding was normal in our study and there was not any stenosis or regurgitation along any valves. Valves movement was normal and their morphology maintained during the study, but the only abnormal finding was aneurism in our graft, after 2 week 3 sheep and after 4 week 4 sheep showed aneurism in acellular grafts.

**Conclusion and Clinical Relevance** - This study showed that TEAV placed in thoracic aorta at day 1 caused significantly reduction in VTI and V_mean and increased in TTP. PG_max and PG_mean were not significantly different from pre-surgery values. There was a significant difference in TTP at second and forth weeks in comparison with their previous time but there was not statistically difference from pre-surgery values. According to our finding one day after surgery VTI decreased as a result of new obstacle in flow path, in fact it was an outcome of diminishing in velocity, then blood travel less distance in comparison to pre-surgery time. But this condition alleviates after 2 and 4 weeks, it could be a compensatory response of left ventricle by increasing contractility. PG was constant during the study and it means that our TEAV did not cause any stenosis in aorta. TTP increased significantly one day after surgery and undoubtedly it was a subsequent of new obstacle in thoracic aorta that increased time span to reaching the peak velocity, it decreased after 2 and 4 weeks which could be the result of compensatory response of left ventricle by increasing contractility again.

**Key Words** - Doppler, Echocardiography, Sheep, Valve

**References**

**Case Description** - A 4.3 Kg, about 6-year-old sexually intact female DSH cat presented to a private small animal clinic, Tehran because of history of anorexia and lethargy. The cat was owned by a woman about five years and lived indoors and she had not been bred during the period of time. Two weeks prior to presentation she had the same clinical signs (lethargy and anorexia) and the owner referred to another pet clinic and vet prescribed antibiotic and intravenous lactated Ringers solution. She improved but clinical symptoms recurred.

**Clinical Findings** - On initial physical examination, the cat was mildly dehydrated and lethargic. Rectal temperature was normal (38.1°C) and no abnormalities in mucous membrane color was appreciated. Heart and respiratory sounds and rates were normal. Vaginal discharge was not observed and abdominal palpation revealed no abnormal organs. Polyuria and polydypsia were noted by the owner. Blood sample was sent to a clinical pathology lab. She referred to diagnostic imaging section for more evaluation. Right lateral and ventrodorsal radiographs were taken. High amount of fat in the peritoneal cavity was enough to show serosal details as well as the uterus. In the lateral view body and...
horns of the uterus was seen as soft tissue opacity containing multiple small nodules with mineral density. In ventrodorsal view both horns of the uterus could be seen separately.

Treatment and Outcome- According to lab and radiological results and based on the high suspicion of pyometra, the cat referred for surgery. She was premedicated with atropine 0.005 mg/kg BW, SC. Anesthesia was induced with ketamine, 10 mg/kg BW, IV, and diazepam, 0.2 mg/kg BW, IV and maintained on isoflurane (1.5%) in oxygen. A regular ovariohysterectomy was performed through midline approach. The uterus and ovaries were carefully isolated from the surrounding tissues and removed completely. The abdomen was closed routinely in a 3-layer closure. After surgery the cat was recovered fully.

Results-

- Treatment and Outcome: The cat was administered ceftriaxone, 25 mg/kg BW, IV, q12h for a week and tramadol 5 mg/kg BW, PO, q12h for 3 days. On lactated Ringer solution for one day and was maintained on anesthesia.
- Design: Orthogonal radiographs were taken under anesthesia.
- Procedures: All of the anatomical details were recorded and compared with those of the dog and cat.
- Results: In the vertebral column there were 7, 13, 7, 3 and 32 vertebrae in cervical, thoracic, lumbar, sacral and caudal regions respectively that were similar with dog and cat except in caudals that in dog and cat are 6-23 vertebrae. In forelimbs clavicle could not be seen that was similar with dog. The distal growth plate of the ulna was linear that is like in cat. Shapes of the patella, pelvis and lumbar vertebrae were something between dog and cat. Radiographs have shown that male mongoose has os penis that is like male dog. Mongoose dental formula was (I 3/3, C 1/1, P 4/4, M 1/2) that is different with dog and cat. Radiographs have shown that male mongoose has os penis that is like male dog. Mongoose dental formula was (I 3/3, C 1/1, P 4/4, M 1/2) that is different with dog and cat.
- Conclusion and Clinical Relevance: Radiography is one of the diagnostic techniques that could be very helpful in diagnosing diseases, but normal radiographic anatomy should be understood first. This study is the first report of radiographic anatomy of the Indian gray mongoose. Even though mongoose belongs to suborder feliformia, our result showed there are many similarity between skeleton of the mongoose and dog that could not find in the cat.

Key Words: Indian gray mongoose, Radiographic anatomy, Dog, Cat.

References
1. Lamont LA, Bulmer BJ, Sisson DD, et al. Doppler echocardiographic effects of medetomidine on dynamic left

Poster Presentation

Radiographic Evaluation of Bone and Cortex Diameters in Live and Post-mortem Metacarpus and Metatarsus in Mature and Immature Cattle

Abdolhamid Meimandi Parizi, Alireza Raayat Jahromi, Nooshin Derakhshandeh*, Mohsen Zarrinkamar

Department of Clinical Studies, School of Veterinary Medicine, Shiraz University, Shiraz, Iran.
Email: nooshin.derakhshandeh@gmail.com

Objective- This study aimed to measure live and post-mortem metacarpal/metatarsal bone and cortex diameters and Cortex/Diameter coefficient in mature and immature cattle.

Design- Descriptive study

Animals- Twenty four metacarpus and twenty four metatarsus bones (twelve mature and twelve immature in each group) of Holstein Friesian bovine were collected post mortem. Thirty six live healthy cattle (12 calves, 12 heifers and 12 adults) were studied, too.

Procedures- Palmarodorsal and plantarodorsal radiographs of metacarpal and metatarsal bones were . Exposure indices were 70 kV, 25 mA and 0.2 s. The film-focus distance was 80 cm and the central beam was positioned perpendicular to the cassette at the level of the central point of the mid-metacarpal and metatarsal bones. Bone diameter (BD), cortical thickness (CT), and cortex/diameter ratio (C/D) were measured in metacarpal and metatarsal diaphysis, proximal and distal metaphysis. Cortex/diameter ratio was calculated by sum of 2 cortices of each part of bone divided by bone diameter of same part. Pearson Correlation Coefficient utilized to evaluate any correlation in mentioned values in metacarpus and metatarsus.

Results- There was a significant correlation between cortex diameter and C/D ratio in all three measured anatomic sites of the bones in mature live cattle and immature postmortem samples.

Conclusion and Clinical Relevance- C/D ratio is a radiographic parameter that can be used to detect the bone quality, density and health. Bone diseases causing decrease in bone density can be detected in early stages by being aware of normal C/D ratios of bones.

Key Words- Metacarpus, Metatarsus Diameter, Cattle

References

Poster Presentation

Computed Tomography, 3D Volume Rendering Assessment and Anatomical Study on the Head of the One Humped Camel (Camelusdromidarius)

Hamid Mohyeddin*1, Abbas Veshkini2, Fazel Mashhadi3

1Department of Clinical Sciences, College of Veterinary Medicine, Garmshar branch, Islamic Azad University, Garmshar, Iran.
2Department of Diagnostic Imaging, College of Veterinary Medicine, Tehran Sciences and Research branch, Islamic Azad University, Tehran, Iran.
3Graduated Student from College of Veterinary Medicine, Garmshar branch, Islamic Azad University, Garmshar, Iran.
Email: Hmohyeddin@yahoo.com

Objective- The present study was performed to provide a detailed anatomic and computed tomographic description of the structures of the head of one humped camel. The bony structures of the skull such as para nasal sinuses nasal cavity, cranium, hyoid apparatus, and orbital structures also evaluated by 3D reconstruction volume rendering.

Design- Descriptive study

Animals- There were 7 clinically normal adult one humped camel's head (3 female and 4 male) after slaughter.

Procedures- The heads collected immediately after slaughter and scanned by 64 slices CT scanner belong to Ali-Ebn-Abitaleb hospital in Zahedan. Each cut was 1mm in head from rostral of the nares to caudal of occiput in bony and soft tissue window. Then each head was freeze in -20 freezer for 3 days and cut in 5 mm section. One of the head cut sagittally for demonstration reconstructed images. All of the skulls were reconstructed with 3D volume rendering soft ware showed best imagination of the skull. All of the structures were labeled according to anatomic sections.
Results- In one humped camel the nasal meatuses were narrow and middle nasal concha was large and ventral concha didn't have a sinus and dorsal and middle concha contain sinus. All of the sinuses were identified and volumetric assessment was done to compare with other previous study such as giraffe, goat, sheep, and other ruminant. All of the data were comparing with ostrich that evaluate previously by the corresponding author of this manuscript. Soft tissues of the head contain brain, eye, facial muscles, tongue, pharynx, larynx and salivary gland were evaluated in this study.

Conclusion and Clinical Relevance - There was a lot of useful data for initial reference for clinical study for camels head as a native animal in Iran desert and make a comparative reference with other ruminant. CT is excellent method for the detailed assessment of the bony structure of the head.

Key Words - CT scan, 3D volume, Anatomy, Head, Camel

References

Poster Presentation

Ultrasonographic Evaluation of the Normal Supramammary Lymph Node in Saanen Goats

Masoud Ghaemmaghami1*, Bahak Khoramian Tousi2, Masoud Rajabioun2, Abbas Ali Naserian3, Mohammad Azizzadeh2

1 DVM, Graduated from Faculty of Veterinary Medicine, Ferdowsi University of Mashhad, Mashhad, Iran.
2 Department of the Clinical Science, Faculty of Veterinary Medicine, Ferdowsi University of Mashhad, Mashhad, Iran.
3 Faculty of Agriculture, Ferdowsi University of Mashhad, Mashhad, Iran.
Email: Ghaemmaghami-masoud@yahoo.com

Objective- To evaluate the ultrasonography appearance of the Normal supramammary lymph node in saanen goat.

Animals- 20 female saanen goat

Design- Descriptive study

Procedures- Milk sample of each teat was taken separately under standard condition for bacteriological culture and SCC test and the result was documented for each side. Twenty goats were negative in culture and recruited for ultrasonographic evaluation of normal Supramammary Lymph node. Mindray PD 6600 ultrasonographic Machine with 10 MHz linear transducer was used. Weight and estimated age of the goats was documented. Length, width and circumference of the lymph node on each side was measured separately by Image J software. For precise measurement three images was saved for each lymph node and average data was reported for each parameter. Echogenicity and echotexture of the lymph node was evaluated as a subjective parameter. By using SPSS software, statistical analysis was performed on the obtained data.

Results- Mean length, width and area of the supramammary lymph node were 10.32 mm, 21.58 mm and 188.95 mm², respectively. No significant relation was seen between weight of the goat and dimension of the supramammary lymph node. Age showed significant positive relation with the lymph node dimension. The supramammary lymph node showed oval-shaped structure with homogenous hypoechoic appearance in comparison with around tissue and fine echogenic capsule as well as presence of echogenic area in center of the lymph node. In some goats, a small supramammary lymph node was seen adjacent to large one.

Conclusion and Clinical Relevance- Echogenicity, echotexture and dimension of the lymph node was evaluated in this study. Base on the previous study in bovine supramammary lymph node ultrasonographic appearance, hypoechoic to anechoic paranchymal structure with echogenic capsule and central echogenic area was described. Presence of the fat in the hilus of the lymph node can be responsible of the central echogenic area.

Key Words- Ultrasonography, Supramammary lymph node, Saanen goat

References

Radiographic Aspect of Rickets in Lamb: Case Report

Seyedmohamad Hashemiasl*, Siamak Asri, Mojtaba Mohseni

Department of Clinical Sciences, Faculty of Veterinary Medicine, Urmia University, Urmia, Iran.
Case Description- Two three-month-old lambs with lameness, stiffness in the gait, enlarged joints and angular deformity in forelimbs (carpus varus and fetlock valgus) were admitted at Urmia University’s Veterinary Teaching Hospital. The owner revealed that he has 60 lambs in flock and 6 of them have similar signs, and concerned about the progression of disease in him flock.

Clinical Findings- In clinical examination, the lambs were weakness on stand up, they forelimbs had angular deformity and joints enlargement. Based on clinical finding rickets was suspected, and forelimbs radiography and serum biochemical analysis was taken to assessment of rickets. The long bones deformity, deeper and mushroom sign of physes and widened metaphyses at the physes edge were observed. In biochemical examinations of blood serum the Ca, P and Vit D levels were markedly lower than normal levels, 1.25 mmol/L and 1.08 mmol/L, 0.45 mmol/L and 0.51 mmol/L and <25 mmol/L respectively in two lambs. In addition, serum ALP activity was clearly higher than normal values 589.5 IU/L and 452.18 IU/L respectively in two lambs. Other haematological parameters were found to be within normal values reported in lambs.

Treatment and Outcome- Based on radiographic and biochemical examinations, usual treatment were performed for rickets. Vitamin D injection, Supplementary dietary Calcium and Phosphorus were administered for one month period with as recommended dosage. Follow-up of herd revealed the suppressing of disease in the lambs.

Clinical Relevance- Rickets is a disease of young, rapidly growing animals and occurs naturally under deficiency of any or a combination of calcium, phosphorus, or vitamin D. The radiographic feature of rickets in small animals was described, but to our knowledge No radiographic study about rickets in lamb was found in the literature. For that reason, publishing of radiographic feature of rickets of this case may contribute to assessment of bone problem in sheep flock.

Key Words- Lamb, Rickets, Radiography

References

Poster Presentation

The First Radiologic Report of Meniscal Calcification in Guinea pig

Shaghayegh Asadi1, Mohammad Molazem2, Iman Memarian3

1Tehran Azma Veterinary Diagnostic Center, Tehran, Iran.
2Faculty of Veterinary Medicine, University of Tehran, Tehran, Iran.
3Tehran Zoo, Tehran, Iran.

Email: mmolazem@ut.ac.ir

Case Description- A 3-year-old male guinea pig was referred with history of one month lameness in both hindlimbs.

Clinical Findings- The case underwent lateral and craniocaudal radiographic projection. Ossification of meniscus and of the ligament of patella was detectable in plain radiography.

Treatment and Outcome- Nutritional reforming and analgesics were administered and relative recovery happened after 2 weeks.

Clinical Relevance- Abnormalities in the stifle joints are common in guinea pigs but ossification of meniscus is a very rare condition. Meniscal calcification is positively associated with meniscal degeneration, which is an early event in the development of osteoarthritis and correlates with cartilage lesions and clinical osteoarthritis scores. Vitamin C deficiency can be responsible for most of guinea pigs’ stifle abnormalities and must be taken into consideration by the clinicians. To our knowledge, this must be the first meniscal calcification report in guinea pigs in the world.

Key Words- Osteoarthritis, Menisc, Guinea pig

References