



THE



CAMPUS
we could be heroes!



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glowing

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days

THE CAMPUS

we could be heroes!

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THE CAMPUS 1 YEAR ANNIVERSARY

Warm greeting to everyone!

THE CAMPUS. It is our soul project I could say. Time passes very quickly, and here it is, a year has passed since this project came into being. It all started thanks to a wonderful idea that brought together different people, different personalities, different ideas that had one goal, to create something extraordinary for our colleagues, future veterinarians. After long discussions and debates, in December, this wonderful project came to life right before our eyes. We can say it was a real success!

The Campus appeared like magic, and we continued to transmit thoughts and ideas throughout a wonderful year. We encountered good moments as well as bad moments, it's normal, but we remained a cohesive team that still wants to create something beautiful for readers.

Our first issue published in December 2021.

As they were placed at the entrance of the hospital, they disappeared immediately and that's why we thank you for your loyalty and for the curiosity you show in each issue. It is an honor for all of us to know that our readers are passionate about what we want to convey.

Over time, we also created an Instagram page where we post different ideas, sneak peaks from articles, competitions and much more.

We thank all 487 followers for your activity with us on instagram.

We have also had important guests over time, guests whom we interviewed and asked for useful advice from their experience.

We thank all those who took their precious time to send us their thoughts and impressions from the work they do every day!

We also thank Dr. Luis H. Tello, Amy Newfield, Dr. Andrei Caloiu and Dr. Alina Chiracu from the bottom of our hearts for the wonderful article he gave us in the first issue of the second volume of this project.

We also participated in the days of the faculty. It was such an experience!

Thank you to all those who stopped for a few minutes in front of our stand, to those who spoke with us and gave us your positive feedback. We are thankful!

We also had special editions that we are very proud of!

We know that they have reached the hands of many readers and that's why we thank you for all the appreciations!

Thank you for everything!

Because you were with us for a year! For you, we created these issues!

Thank you for your curiosity and interest!

Thank you because every time the place where the issues are placed after printing is emptied with the speed of light!

We thank you and we hope that you will stay with us in 2023 too!



On behalf of the editors and the authors

Chief Editor

Vet. Med. Stu. Ghita Rodica-Maria

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CÂTEVA CUVINTE DESPRE ANTIBIOTICE: Partea I

Antibiotics



Article by Miruna Beda

Clasificare, acțiune & utilizări

Ah, antibioticele!

Nu poți trăi nici cu ele, nici fără ele. Acestea sunt folosite în mod obișnuit în medicină pentru tratarea bolilor infecțioase cauzate de bacterii sau alte microorganisme. Există numeroase clase de antibiotice utilizabile în medicina veterinară, ce vor fi discutate pe larg în cele ce urmează. Unele pot fi eficiente împotriva unui spectru larg de microorganisme, în timp ce altele acționează mai țintit, astfel împărțindu-se în antibiotice cu spectru larg și îngust. Un tratament antibiotic de succes se bazează pe 4 principii:

- 1 Identificarea bolii, respectiv a agentului cauzal.
- 2 Obținerea unor concentrații eficiente de antibiotic la locul infecției pentru o perioadă de timp suficientă.
- 3 Alegerea unei doze, frecvențe și metode de administrare ce maximizează șansele de vindecare și previne recidiva, în timp ce riscul dezvoltării unei rezistențe este minim și nu provoacă rău organismului animal.
- 4 Folosirea unui tratament de susținere specific și potrivit pentru a îmbunătăți capacitatea animalului de a se lupta cu infecția și alte probleme asociate acesteia.

O problemă actuală și de mare importanță pentru medicii de orice fel este reprezentată de **antibiorezistență**, de aceea utilizarea imprudentă și iresponsabilă a antibioticelor este un motiv de mare îngrijorare. **Indiferent de categoria din care face parte un antibiotic, este vital ca acesta să nu fie utilizat inutil, pe o perioadă prea lungă sau subdozat!** Există un grup de experți în recomandări privind rezistența la antimicrobiene (AMEG) ce a clasificat antibioticele în funcție de potențialele consecințe asupra sănătății publice,

ca urmare a rezistenței sporite la antimicrobiene cauzate de utilizarea la animale, dar și în funcție de necesitatea lor în medicina veterinară, clasificare fiind menită să ajute medicul veterinar în alegerea antibioticului ce trebuie folosit. Astfel s-au obținut **4 categorii**:

Categoria A, DE EVITAT: antibiotice neautorizate ca medicamente de uz veterinar în Uniunea Europeană. Nu trebuie utilizate la animale de la care se obțin produse alimentare și se administrează animalelor de companie doar în circumstanțe excepționale.

Categoria B, RESTRICȚIE: antibiotice de o importanță critică în medicina umană, dar cu uz restricționat la animale tocmai pentru a reduce riscul asupra sănătății publice. Pot fi luate în considerare doar dacă cele din categoriile C și D nu sunt considerate eficiente. Este de preferat să se efectueze teste de susceptibilitate la antimicrobiene în prealabil.

Categoria C, PRECAUȚIE: la aceste antibiotice există alternative în medicina umană. Similar categoriei de mai sus, se iau în considerare doar dacă nu există antibiotice din categoria D care ar putea fi eficiente clinic.

Categoria D, PRUDENTĂ: trebuie utilizate ca tratamente de primă linie de fiecare dată când este posibil. Evident, trebuie folosite prudent și doar când este necesar.

Capacitatea unui antibiotic de a opri creșterea bacteriei (antibiotic bacteriostatic) sau de a o combate ireversibil (antibiotic bactericid) este dependentă de mecanismul de acțiune și concentrația în care va fi la locul infecției. Când un medicament este introdus în corp, el este rapid vehiculat prin sânge către ficat, rinichi și alte organe ce îi pot schimba sau reduce activitatea antibacteriană și îi promovează excreția.

Aceste procese de Absorbție de la locul de administrare, Distribuție consecutivă prin organism, Metabolizare biochimică și Excreție prin urină, bilă sau alte căi reprezintă parametri farmacocinetici cunoscuți colectiv sub acronimul **ADME**.

Introducerea fiind încheiată, haideți să facem cunoștiință (sau poate chiar să ne reîntâlnim) cu categoriile principale de antibiotice uzuale în practica veterinară curentă.

Aminoglicozidele

Mod de acțiune: inhibarea *sintezei proteice ribozomale* – adică, odată ajunse în celula bacteriană, acestea se leagă de subunitatea ribozomală 30S și produc o "citire greșită" a codului genetic. Aceasta conduce ulterior la întreruperea sintezei normale de proteine bacteriene.

Exemple: gentamicină, kanamicină, streptomycină, tobramicină, spectinomycină.

Clasificare AMEG: C, doar spectinomycină aparține categoriei D.

Spectru de acțiune: larg (bacterii Gram+, Gram-, bacilul tuberculozei), mai puțin împotriva bacteriilor anaerobe.

Efect: bactericid degenerativ (adică afectează germenii numai în faza de multiplicare), dependent de doză.

Utilizări: din cauza toxicității (sunt nefrotoxice și ototoxice), utilizarea acestora a fost limitată la infecții severe. Toate prezintă o **absorbție orală redusă**. Streptomycină este indicată în toate stările infecțioase nespecifice, dar și specifice, precum colibaciloze, leptospiroze, pasteureloze, micoplasmoza și enterite (de natură infecțioasă). Nu se administrează **intravenos** și nici la pacienții cu **afectare renală**. Antibioticele mai toxice din această categorie au fost reduse la utilizare topică sau orală pentru tratamentul infecțiilor cauzate de enterobacterii.



Betalactaminele

Mod de acțiune: inhibarea *sintezei peretelui celular*. Această categorie de antibiotice este caracterizată de prezența unui nucleu de beta-lactamă în molecula lor, acesta reprezentând cheia deslușirii modului de acțiune. Beta-lactaminele atacă proteinele care leagă penicilina (PBP), un grup de enzime găsite în membrana celulară, implicate în legarea încrucișată a peretelui bacterial celular. V-am pierdut? Ideea este că acest nucleu de beta-lactamă se leagă de PBP din bacterii, acestea nemaiputând să își îndeplinească rolul în sinteza peretelui celular. Ulterior, se produce moartea celulei bacteriene prin instabilitate osmotică sau autoliză.

Exemple: există mai multe subclase, acestea fiind **penicilinele** (amoxicilina, ampicilina, oxacilina, metilcilina, penicilina cristalină G, penicilina V etc.), **cefalosporinele** (cefalexina, cefazolina, cefapirina, cefacetril etc.), **carbapenemele** (meropenem) și **monobactamii** (aztreonam).

Clasificare AMEG: variază grozav în funcție de subclasă. Cefalosporinele de prima și a doua generație aparțin categoriei C, alături de aminopeniciline (amoxicilina, ampicilina). Carbapenemele și monobactamii se află în categoria A, iar cefalosporinele de a treia și a patra generație se află în categoria B. Penicilinele naturale (penicilina cristalină G, penicilina V) și cele antistafilococice (nafcilina, oxacilina) se pot găsi în categoria D.

Spectru de acțiune: larg în cazul amoxicilinei, carbapenemelor, și cefalosporinelor (generațiile a 2a, 3a, 4a) și îngust în cazul penicinelor, monobactamilor și cefalosporinelor din prima generație.

Efect: în general bactericid (degenerativ).

Utilizări: Penicilina G se administrează în boli infecțioase nespecifice, dar și specifice, precum rujet, gurmă, antrax, cărbune enfizematos. În general aceste antibiotice sunt eficace împotriva infecțiilor streptococice și clostridiene. În funcție de generație (a 4a având spectrul cel mai larg), cefalosporinele acționează împotriva pneumococului, streptococului, meningococului, stafilococului auriu, E. coli, Klebsiella, Proteus, enterobacteriilor (ultimele 2 generații).

Prea multă informație? Vă promitem că următoarea categorie este ceva mai ușor de digerat (pun intended)

Cloramfenicolul (din categoria Amfenicolicilor)

Mod de acțiune: *inhibarea sintezei proteice* ribozomale – cloramfenicolul se leagă ireversibil de subunitatea ribozomală 50S a bacteriei, prevenind transferul aminoacizilor în lanțurile de peptide în creștere.

Clasificare AMEG: C

Spectru de acțiune: larg

Efect: bacteriostatic

Spectru de acțiune: larg (bacterii Gram+, Gram-, bacilul tuberculozei), mai puțin împotriva bacteriilor anaerobe.

Utilizări: se utilizează numai la animalele de companie în infecțiile anaerobe – oculare (singurul antibiotic ce poate pătrunde prin umoarea apoasă a ochiului), prostatite, otite medii și interne.

Se utilizează în tratamentul enteritelor colibacilare și salmonelice, pasteurelozei, holerei, micoplazmozei, pneumopatiilor, mamitelor, artritelor. Poate provoca deprimare medulară (prezintă toxicitate sanguină) și compromite producția de anticorpi dacă se administrează înainte de vaccinare. Pisicile sunt mai susceptibile la toxicitatea acestui antibiotic.



Fluorochinolonele

(din clasa Chinolonelor, cunoscute și drept chinolone „noi”)

Mod de acțiune: *inhibarea sintezei de acid nucleic prin inhibarea enzimei ADN-giraza*, astfel producându-se o replicare vicioasă a ADN-ului bacterian

Exemple: enrofloxacină, ciprofloxacină, marbofloxacină, norfloxacină, danofloxacină

Clasificare AMEG: B

Spectru de acțiune: larg, cuprinde coci și bacili Gram+, bacili Gram- aerobi, bacterii anaerobe, chlamidii, micoplasme, rickettsii.

Efect: bactericid

Utilizări: prezintă o eficiență crescută împotriva infecțiilor localizate la nivelul aparatului genito-urinar. Tratamentele pe perioade îndelungate pot duce la eroziuni ale cartilajelor de creștere, motiv pentru care se administrează cu precauție la tineretul în creștere. La câini și pisici se recomandă în prostatite, mastite, rinite, otite, infecții la nivelul leziunilor, peritonite, osteomielite și infecții ale țesuturilor moi.



Rifampicina (din clasa Rifamicinelor/Peptolidelor)

Mod de acțiune: inhibarea sintezei de acid nucleic. Pătrunde în neutrofile și macrofage, inhibând ARN polimeraza ADN-dependentă și blochează sinteza de ARN-mesager, consecutiv urmând și scăderea sintezei proteinelor ribozomale.

Clasificare AMEG: A

Spectru de acțiune: larg, având acțiune inclusiv antivirală și antifungică.

Efect: bactericid

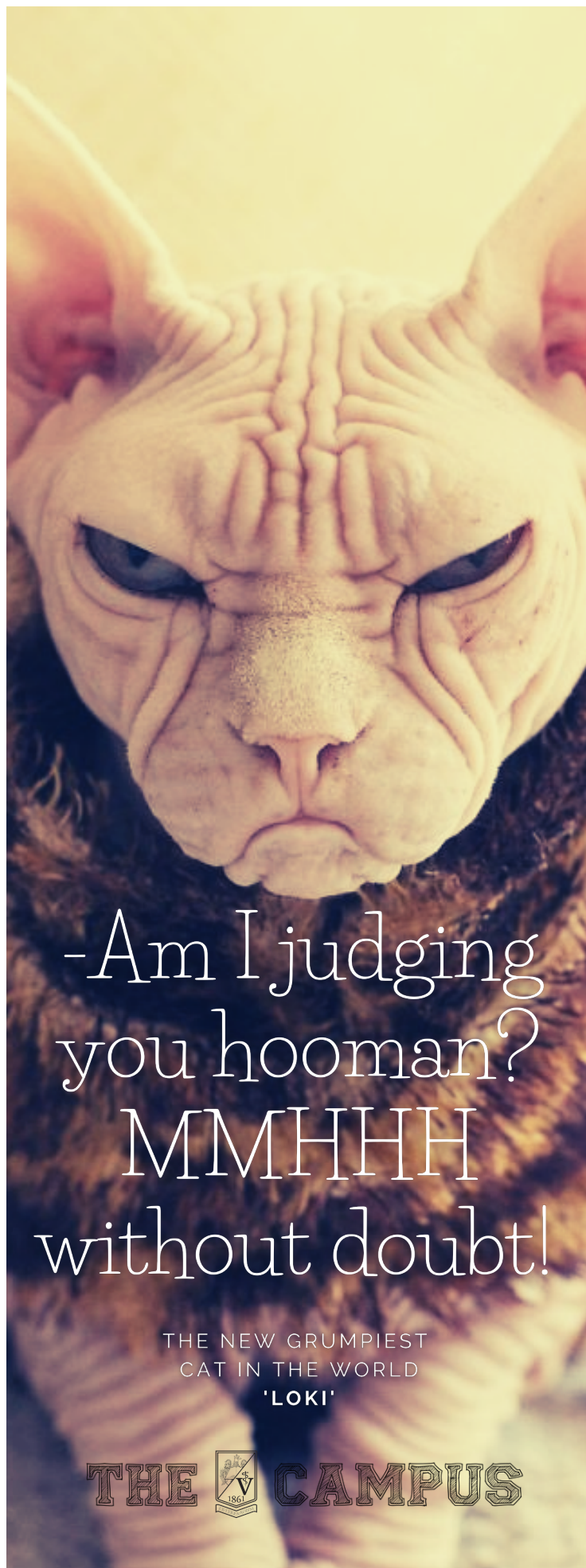
Utilizări: combate atât micobacteriile intracelulare, cât și cele extracelulare (*Mycobacterium tuberculosis*, lepra) dar și numeroase microorganisme Gram+ și Gram-. Prezintă icterul ca reacție adversă toxică, deci trebuie folosit cu precauție la pacienții cu insuficiență hepatică



Acestea fiind spuse, conștiința mă îndeamnă să mă opresc pentru moment aici. În publicația următoare vom reveni cu alte clase interesante de antibiotice, faimoase pentru toți viitorii medici, precum tetraciclinele, sulfonamidele, macrolidele, lincosamidele și nu numai!

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LIMFOMUL CANIN



Article by Gabriel Tomescu

Limfomul este un proces tumoral malign definit de proliferarea clonală a limfocitelor B și/sau T de tip blastic. Acesta se manifestă ca leziune primară a sistemului limfatic (limfonoduri și splină). Secundar, proliferarea celulelor (limfoblaste, centroblaste, imunoblaste) se manifestă sistemic: viscere abdominale, sistem nervos central, măduvă osoasă etc.

Cauzele acestei afecțiuni pot fi de ordin genetic (aberații cromozomale, mutații somatice) și infecțios (retrovirusuri, virusul Epstein-Barr). Clinic, leziunea principală este reprezentată de poliadenopatie. Limfonodurile superficiale sunt indurate, mărite în volum, de regulă, monomorfe din punct de vedere al dimensiunii. Când leziunea este sistemică, semnele clinice sunt specifice sistemului afectat. Investigațiile paraclinice ce implică hemoleucograma și biochimia pot indica neutrofilie, monocitoză, limfocitoză, trombocitopenie, posibil hipoproteinemie, hieprcalcemie și azotemie (în manifestări hepatice și renale). Diagnosticul se pune pe baza examenului citopatologic: recoltare prin puncție aspirativă cu ac fin din limfonodurile afectate, colorație May Grunwald Giemsa a frotiurilor.

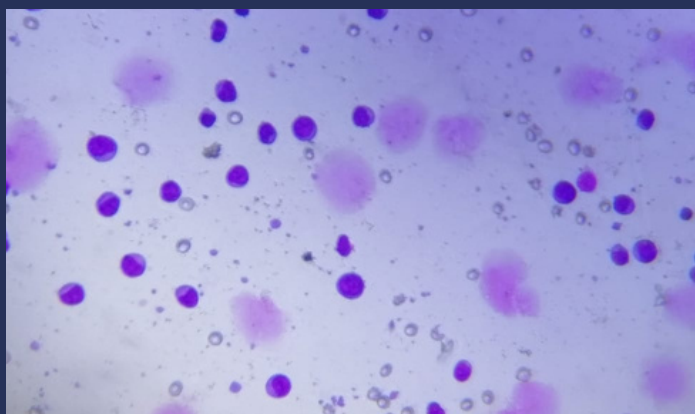


Figura 1 -MGG stain. Credit; Gabriel Tomescu personal archive

La examenul microscopic se remarcă adesea o populație monomorfă de limfocite blastice. Examenul suplimentar implică imunofenotipizarea (diferențierea limfocitelor B de limfocitele T). Este necesară pentru stabilirea prognosticului. Imunofenotipizarea se face pe biopsie din limfonod spusă următoarelor examene de laborator: imunohistochimie sau PARR (PCR for antigen receptor rearrangements). Stadializarea limfomului implică cinci grade de extindere a leziunii: un limfonod afectat (stadiu I), poliadenopatie regională (stadiu II), poliadenopatie sistemică (stadiu III), evoluție viscerală (stadiu IV), exindere la nivelul măduvei osoase și sângelui (stadiu V).

Protocoloalele de tratament pot consta în chimioterapie multimodală sistemică sau radioterapie regională (aceasta este recomandată pentru procese localizate cutanat sau mediastinal). Se poate recurge și la tratament chirurgical în vederea exciziei formațiunilor inracaviare, dacă starea clinică permite această intervenție. Unul dintre tratamentele medicamentoase folosite în practică este protocolul CHOP. Acesta constituie o chimioterapie multimodală: se folosesc trei tipuri de citostatice: vincristină, ciclofosamidă, doxorubicină și un glucocorticoid (antiinflamator steroidian), prednison. Protocolul se întinde pe o perioadă de 19-25 săptămâni, în funcție de răspunsul la tratament al organismului afectat. Primele patru săptămâni reprezintă faza de inducție – perioadă în care administrarea de citostatic se face săptămânal, dar prednisonul se va administra zilnic, doza scăzându-se treptat. Remisia semnelor clinice apare în această fază a tratamentului. La finalul fiecărei luni de tratament, respectiv după administrarea doxorubicinei, o săptămână nu se va administra niciun medicament din protocol. După săptămâna a unsprezecea, protocolul CHOP poate continua cu administrare săptămânală de chimioterapie sau cu administrare la paisprezece zile, dacă pacientul nu tolerează bine tratamentul. Deoarece prognosticul limfomului este unul rezervat spre grav, gradul de recidivă și complicațiile pot apărea atât în timpul tratamentului, cât și după terminarea acestuia.

Complicațiile sunt reprezentate de ulcere gastrointestinale (lezarea mucoasei gastrointestinale cauzată de administrarea orală a prednisonului), cistită hemoragică (ciclofosfamida are efect iritant al mucoasei urinare), afecțiuni cardiocirculatorii (doxorubicina poate agrava afecțiuni cardiace preexistente), suprainfecții secundare imunosupresiei. Există recomandări pentru evitarea acestor complicații sau pentru înlocuirea unor medicamente. Pentru evitarea afecțiunilor gastrointestinale să se administreze un protector gastric (pantoprazol, omeprazol). Pentru monitorizarea tractului urinar, este recomandat un sumar de urină la șapte zile după administrarea ciclofosfamidei și dacă este nevoie, se poate înlocui cu clorambucil. Doxorubicina are efecte secundare cardiotoxice – în cazul unui pacient cu afecțiuni cardiace, aceasta se poate înlocui cu mitoxantronă. Este important să fie urmărit pacientul din punct de vedere al hemoleucogramei (neutropenia severă poate avea consecințe întreruperea tratamentului sau scăderea dozei de chimioterapie). Așadar, chiar dacă protocolul CHOP este unul complex, acestuia i se pot aduce modificări dictate de statusul pacientului.

Recidiva apare adesea în primele trei luni de la oprirea protocolului. Aceasta poate apărea chiar și în timpul tratamentului. Speranța de viață a pacienților cu limfom este influențată de tipul de celule proliferate (limfocite B sau T), de stadializare și de statusul general al animalului.

Mesaj de luat acasă: limfomul este o afecțiune tumorală malignă, cu prognostic rezervat spre grav, existând probabilitatea apariției complicațiilor și a recidivei. Un protocol de tratament multimodal are drept scop remisia procesului patologic și îmbunătățirea vieții pacientului.

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Article by Mara-Catalina Busca

Every generation from our Faculty has heard about „physical examination” and how it’s done. Our goal in this article is to remind all of you and review the techniques of physical examination for the students as well as for experienced doctors.

What is a physical examination?

As we were told in the 3rd year at Semiology, physical examination is the method of examination that includes inspection, palpation, percussion and auscultation of animals to detect clinical signs in our patients.

Inspection;

Consists of visual examination of the abdomen with notes made of the shape of the abdomen, skin abnormalities, abdominal masses and the movement of the abdominal wall with respiration. Abnormalities detected on inspection provide clues to intra-abdominal pathology.

Palpation;

Usually we use it to detect pain in a tissue by noticing an increased sensitivity in the specific area. We can use our fingers, palm and back of our palm in order to get some information about the consistency, shape, size, and temperature of body parts.

Percussion;

Is a method of examination where we strike with sharp blows using the fingertips to produce audible sounds. Sounds that are to be emitted will indicate the nature of the organ involved. That is to say, when the rumen is bloated, it will emit some noises like drum sounds.

Auscultation;

Years ago, auscultation was done with the naked ear but nowadays the stethoscope has become the main instrument used for this method of physical examination.

Dec.-Jan.2023

So, basically, auscultation is a technique of listening to the sounds that organs make in the abdominal or thoracic cavities.

How often do we perform a complete physical examination?

The truth is that we don’t need to perform a complete one on every patient, as we do not always have the time to do it. We routinely perform a what might be called a „standard physical examination” which includes all important body systems. Furthermore, based on the history and the results of every patient, we can perform one or more detailed physical examinations.

We know there are many ways to approach a physical examination, but let’s do it how the way we are taught to in all of the years spent in our beloved faculty.

It’s important to choose the perfect location for the examination, proper restraint, good lighting, where animals can calm down before proceeding to with the examination. It is of utmost importance to always approach from behind rather than head. We will first start with the examination from a distance, what we can call general appearance.

General appearance

In this part we should begin with observation of the animal from a distance. Take a step back and notice every little thing about the animal that may imply something worth looking into. What is the coat condition, if there are any suspicious lumps and bumps, if the posture suggests pain and note that every animal should be observed at rest for several minutes and then in motion. When is at rest, pay attention to the animal’s awareness of its surroundings which reflects cerebral function. Observe if it is depressed, hyper-excited, responsive to external stimuli, vocalizing abnormally, behaving abnormally or aggressively.

Abdominal contour should also be assessed from a distance and from behind. Observation should also be carried out directly from behind the animal and then from each side, with particular attention to the placement of the legs and its ability to walk in a straight line and also if there's any suspicion regarding blindness which can be tested by putting an obstacle in their way. In this way their visual capacity can be properly assessed.

 KNOW THE NORMAL TO RECOGNIZE THE PROBLEM 	
Normal cow	Problem cow
☐ Bright, alert	☐ Slow, dull, alone
☐ Head up, ears up	☐ Head low, ears dropping
☐ With the group	☐ Does no chew cud
☐ Chewing cud	☐ Breathes with mouth open
☐ Moves well	☐ Thin
☐ Gets up easily	☐ Eyes dull, swollen
☐ Shiny, flat haircoat	☐ Discharge around tail
☐ Eyes bright, open	☐ Belly bloated or sunken
☐ Belly full	☐ Holds tail out
☐ Clean tail	☐ Dull haircoat with hair up
☐ Standing straight	☐ Extends neck

The exam up close

Physical examination can be carried out by checking vital signs such as; Temperature taking; Pulse taking; Respiration taking, Capillary Refill Time (CRT), Physical body Condition.

● Temperature

Never take the temperature after a rectal examination because air enters the rectum after the arm and its removal causing a cooler environment. If the environment is cold, the cow's temperature will be below normal. When they will be exposed to hot conditions or direct to sunlight on a summer day, the cow may appear to have fever. The average body temperature is : 38 – 39,5 ° C, but it can also vary with age.

● Pulse

It is possible to take the pulse from a cow's tail. We can use the tip of our middle finger by gently putting some pressure on the underside of the tail between two vertebrae. We will feel the coccygeal artery pulse under our fingers with the right amount of pressure.

● Respiration

Respiratory movements can be observed in the right flank. There are three types of respiration: *Costal respiration* which can be noticed in dogs and cats. In this type of respiration thoracic muscles are mainly involved and the movement of the rib cage is more prominent.

Abdominal respiration that is seen in polygastric animals such as cattle, goats and sheep. Here, the abdominal muscle is involved and movement of the abdominal wall can be easily noticed.

Costo-abdominal respiration where both the thorax and the abdomen are involved so the movement of the ribs and the abdominal wall are noticed.

The calculation of breathing rate should be conducted by counting inspiration and expiration by looking at flank movements or by placing a stethoscope for 15 seconds and multiplying it by 4.

Urine collection

We can get an urine sample to check for a ketosis test. In dairy cows particularly, it is often important to collect urine and to check for ketonuria. It can be done without catheterization if it is done before the cow is disturbed by the physical examination. If animals are laying in a stall and rise as soon as the examiner approaches, it will frequently urinate and defecate spontaneously.

Gut fill

If we see the left side of the abdomen enlarged it can indicate a rumen bloat or a left displaced abomasum. If we see the right side enlarged it may indicate a right displaced abomasum or in a very rarely case a cecal torsion. In case of both sides distended we probably should take into consideration a total stoppage of intestinal flow or a vagal indigestion.

Capillary refill time (CRT)

Is defined as the necessary time to return to the beginning color after we've applied pressure to a distal capillary bed.

How can you take it? By compressing the mucosa of the mouth or vulva to expel capillary blood, leaving a pale area and, in the same time, we have to record how long it takes for the normal pink color to return. Usually, in healthy animals, it should be less than 2 seconds. A CRT of more than 5 seconds is abnormal, and between 2 and 5 may indicate some developing problems.

Left side of the animal



Heart

Auscultation of the heart cannot be only used to obtain a heart rate, but to listen for potential abnormalities in the rhythm or heart murmurs also. This can be assessed by using a stethoscope and listening near the left leg on the chest at elbow height. Because the heart is difficult to listen to, place some pressure on the stethoscope and move it around different locations. Usually, the rhythm of the heart beat should remain constant. If there is a missing beat or a series of very rapid beats further investigation should be done.

Lungs

Generally speaking, we need to remember the anatomical boundaries for auscultating the lungs of a cow. Thus, we will have a caudal border, a cranial one and as well as the dorsal border. Afterwards, we draw along the caudal border from the top of the 11th rib to the middle of the 9th rib and then to the point of the elbow. That's the caudal margin of the lungs in a cow. The cranial margin is bordered by the back part of the front leg. The bottom portion of the transverse processes of the thoracic vertebrae would mark the dorsal border. So there is a very small window to work with. Your auscultation technique will basically be to move your stethoscope systematically, so that every part of the lungs field is thoroughly examined.



Rumen

The rumen will always be found on the left side of a ruminant's abdomen. The stethoscope should be laid in the paralumbar fossa behind the last rib and in front of the cows' hook or hip bone. So what should you expect to hear? Before you lay your stethoscope, every minute and a half up to 2 minutes, it is likely that you will hear a sound like a thunderstorm happening really close to your stethoscope. And that's what you call a contraction of the rumen. You can actually hear it only if put your ear on the cow.



Hydration status

Lift, pinch and slightly twist the skin over the neck. In normally hydrated animals the „tented” skin will return to its original flat state in less than a second. Cows that take 3 seconds are severely dehydrated and in need of IV or oral fluids.

Right side of the animal

This is where the fourth stomach sits, the abomasum or the true stomach (like mono-gastrics have). The omasum, the third stomach sits in this area too, also the reticulum and here we have all the intestines. In this area all the food is absorbed.

Trachea or Windpipe

Place your stethoscope midway up the cow's neck on the very bottom. The trachea is just below the skin surface. Normal air movement is soft, possibly loud, but with no musical tones or grunting noises. We can always hear traveling sounds either from the throat or lungs in the windpipe. Make sure you move your stethoscope up towards the throat looking for abnormal sounds.

Jugular Vein

This vein is bringing blood back from the head to the heart, and we can see it on the both sides of the neck. While listening to the heart, look towards the neck and you will find it but just to be clear, it is not that prominent and only the groove that lies in is noticeable. It may be visible when the heart valves are not functioning correctly (valve disease, hardware), just like a wave in the jugular.

Udder

We can always palpate the quarters to tell if there is a problem with the udder. If we talk about an acute infection, at just a simple palpation, it will be swollen and firm. Long standing infections, even without clinical mastitis, can cause internal scarring and of loss of milk production. To our advantage, there is a test on the market, CMT (California Mastitis Test) which is a diagnostic tool to aid in the quick diagnosis of mastitis in dairy cows and for an udder health management program.

As we were told this year in *Reproduction Disorders And Clinical Lectures On Species*, this test is performed to detect the presence of subclinical infections at the beginning of or during lactation, and, additionally, diagnostics for cows with clinical signs of mastitis. This test is positive when we find any type of thickening or gelling of the milk. If not, it is negative and the milk is normal.



Withers pinch test

The withers test is useful to check that there is no pain in the animal's brisket, which is commonly caused by traumatic reticulitis. It's very important to perform the test twice.

In a normal cow, if you pinch their withers, the cow should dip and perform a shrug like action. In a cow with wire (traumatic reticulitis), they will be reluctant to perform the dip, or will grunt whilst dipping, indicating pain.

A similar test involves placing your fist one the left side of the chest or even further back under the belly. Pain will be shown with pressure in these areas.

Lymph nodes

Lymph nodes are usually considered important organs where diseases and abnormalities are most likely to produce visible or palpable lesions. We should observe from a distance to identify enlarged lymph nodes. If visible, it is important to know if they are painful, warm or ulcerative. In most ruminants we can feel the submandibular lymph nodes which are palpable on the medial angle of the jaw. The prescapular lymph node is located anterior of M. infraspinatus and shoulder joint. They vary in size and are often elongated in dorsoventral direction. The precural lymph nodes (subiliac lymph nodes, or prefemoral) are situated at the anterior border of M. tensor fascia lata, above the patella. Compare presence and size of all lymph nodes on both sides. These 3 lymph nodes are palpable in most healthy cows. Other lymph nodes may be palpable when enlarged, such as parotid, retropharyngeal, retromammary.

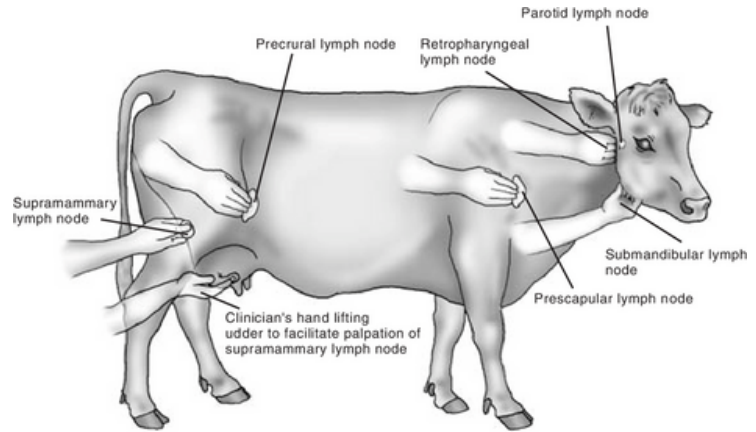


Figure 3.1 Locations of the readily palpable lymph nodes in cattle showing placement of the clinician's hand. See text for details.

Examination of the Head

Ears

Their ears are like a barometer: when warm the cow is usually feeling well, when hot it is possible to be a case of fever and when cold they are probably not feeling well.

Nose

If a cow has a bad breath it may indicate sinus infection, tumors, abscesses in the throat or severe pneumonia. We should also pay attention if air moves through both nostrils. One may be blocked by a mass. Cows should always breathe through their noses unless is extremely hot and they open their mouth to breathe in order to cool off. Place the stethoscope over the front of the face or over the throat if any unusual noise is noticed.

Rectal examination

Is an essential part of a thorough clinical examination and this is most commonly performed at the end of the clinical exam. It can be safely done using a glove, and before entering the rectum you can perform a brief vaginal examination looking for abnormal smell, consistency, or color of the mucous. Never do a vaginal examination after the rectal examination because is highly likely to introduce bacteria into the reproductive tract. We use this examination in adult cows for pregnancy diagnosis.

Understanding what is typical will help you recognize and evaluate what is abnormal. For a physical examination to be successful, you must have a basic understanding of anatomy in order to interpret the cow's signals. We hope you found this article informative.

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IMPORTANTA ANALIZELOR DE SANGE in mentinerea sanatatii animalutului si intelegerea acestora



Article by Bianca Mohora

Alaturi de un consult medical general sau de specialitate, analizele au un scop extrem de important in sanatatea patrupedului tau. Analizele de laborator joaca un rol important in depistarea problemelor la nivelul intregului organism, acestea confirmand sau, in unele situatii, chiar infirmind anumite suspiciuni de boala.

Biochimia, hemoleucograma si analiza urinei formeaza o baza solida in stabilirea atat a diagnosticului, cat si a tratamentului corespunzator.

Ce este Hemoleucograma?

Hematologia veterinara este una dintre analizele cel mai des solicitate, fiind incredibil de interesanta, deoarece animalele nu pot vorbi de la sine, iar noi, medicii, le folosim sangele ca pe o fereastră către corpurile lor. De foarte multe ori, o banala hemoleucograma poate indica anemii, deshidratare sau infectii bacteriene, dar cele mai fericite situatii sunt, bineinteles, cele in care valorile tuturor parametrilor se afla in limitele normale.

Test	Results	Reference Interval	LOW	NORMAL	HIGH
ProCyt Dx (November 18, 2022 10:47 AM)					
RBC	7.18 M/ μ L	5.65 - 8.87			
HCT	47.9 %	37.3 - 61.7			
HGB	16.3 g/dL	13.1 - 20.5			
MCV	66.7 fL	61.6 - 73.5			
MCH	22.7 pg	21.2 - 25.9			
MCHC	34.0 g/dL	32.0 - 37.9			
RDW	18.8 %	13.6 - 21.7			
%RETIC	0.9 %				
RETIC	63.2 K/ μ L	10.0 - 110.0			
RETIC-HGB	25.7 pg	22.3 - 29.6			
WBC	12.31 K/ μ L	5.05 - 16.76			
%NEU	78.4 %				
%LYM	12.0 %				
%MONO	6.1 %				
%EOS	3.0 %				
%BASO	0.5 %				
NEU	9.65 K/ μ L	2.95 - 11.64			
LYM	1.48 K/ μ L	1.05 - 5.10			
MONO	0.75 K/ μ L	0.16 - 1.12			
EOS	0.37 K/ μ L	0.06 - 1.23			
BASO	0.06 K/ μ L	0.00 - 0.10			
PLT	397 K/ μ L	148 - 484			
MPV	11.3 fL	8.7 - 13.2			
PDW	10.6 fL	9.1 - 19.4			
PCT	0.45 %	0.14 - 0.46			

Figura 1 - Pisica, valori in limitele normale
Hemoleucograma realizata in cadrul Laboratorului din Spitalul Universitar de Urgente
Prof. Univ. Dr. Alin Birtoiu

Anemia se caracterizeaza prin scaderea masei eritrocitare (celulele sangvine care transporta oxigenul in tot organismul) si a constantelor hematologice (celule rosii, hematocritsi hemoglobina) sub limita fiziologica caracteristica speciei respective.

Simptomele ce apar pot fi discrete sau foarte evidente: letargie, lipsa apetitului, mucoase palide si intoleranta la efort.

Test	Results	Reference Interval	LOW	NORMAL	HIGH
ProCyte Dx (November 29, 2022 9:23 AM)					
RBC	5.39 M μ L	6.54 - 12.20	LOW		
HCT	27.6 %	30.3 - 52.3	LOW		
HGB	7.6 g/dL	9.8 - 16.2	LOW		

Figura 2 - Pisica, anemie

Hemoleucograma realizata in cadrul Laboratorului din Spitalul Universitar de Urgente Prof. Univ. Dr. Alin Birtoiu

Test	Results	Reference Interval	LOW	NORMAL	HIGH
ProCyte Dx (November 29, 2022 9:03 AM)					
RBC	5.27 M μ L	5.65 - 8.87	LOW		
HCT	34.3 %	37.3 - 61.7	LOW		
HGB	13.0 g/dL	13.1 - 20.5	LOW		

Figura 3 - Caine, anemie

Hemoleucograma realizata in cadrul Laboratorului din Spitalul Universitar de Urgente Prof. Univ. Dr. Alin Birtoiu

Anemia poate avea multe cauze si variaza de la anemie usoara la severa. O anemie severa poate fi fatala si necesita atentie medicala de urgenta.

Test	Results	Reference Interval	LOW	NORMAL	HIGH
ProCyte Dx (November 18, 2022 9:49 AM)					
RBC	3.42 M μ L	6.54 - 12.20	LOW		
HCT	14.6 %	30.3 - 52.3	LOW		
HGB	3.8 g/dL	9.8 - 16.2	LOW		

Figura 4 - Pisica, anemie severa

Hemoleucograma realizata in cadrul Laboratorului din Spitalul Universitar de Urgente Prof. Univ. Dr. Alin Birtoiu

Anemia se clasifica ca fiind regenerativa sau non-regenerativa, in functie de numarul de eritrocite imature circulante in sange (reticulocite).

Anemia regenerativa; e cauzata de hemoragii sau distrugerii ale eritrocitelor (hemoliza intravasculara sau extravasculara).

Hemoragiile pot fi externe sau interne, acute sau cronice. Hemoragiile acute apar in urma unor traume sau leziuni (precum leziunile tumorale), iar cele cronice apar in parazitoze interne si externe, dar si in cazul intoxicatiilor cu anticoagulante.

Test	Results	Reference Interval	LOW	NORMAL	HIGH
ProCyte Dx (November 9, 2022 9:53 AM)					
RBC	5.12 M μ L	5.65 - 8.87	LOW		
HCT	32.1 %	37.3 - 61.7	LOW		
HGB	12.9 g/dL	13.1 - 20.5	LOW		
MCV	62.7 fL	61.6 - 73.5			
MCH	25.2 pg	21.2 - 25.9			
MCHC	40.2 g/dL	32.0 - 37.9			HIGH
RDW	16.2 %	13.6 - 21.7			
%RETIC	5.7 %				
RETIC	299.8 K μ L	10.0 - 110.0			HIGH
RETIC-HGB	25.1 pg	22.3 - 29.6			

Figura 5 - Caine, anemie regenerativa

Hemoleucograma realizata in cadrul Laboratorului din Spitalul Universitar de Urgente Prof. Univ. Dr. Alin Birtoiu

Anemia non-regenerativa; rezulta dintr-o scadere sau o insuficienta a eritropoiezei.

O productie insuficienta de eritrocite poate rezulta in urma unei afectiuni ale maduvei osoase sau poate fi o cauza secundara in insuficienta renala cronica, boli inflamatorii sau agenti infectiosi precum *FeLV* (*Virusul Leucemiei Feline*).

Test	Results	Reference Interval	LOW	NORMAL	HIGH
ProCyte Dx (September 19, 2022 9:36 AM)					
RBC	4.50 M μ L	5.65 - 8.87	LOW		
HCT	29.3 %	37.3 - 61.7	LOW		
HGB	10.5 g/dL	13.1 - 20.5	LOW		
MCV	65.1 fL	61.6 - 73.5			
MCH	23.3 pg	21.2 - 25.9			
MCHC	35.8 g/dL	32.0 - 37.9			
RDW	15.0 %	13.6 - 21.7			
%RETIC	0.2 %				
RETIC	8.1 K μ L	10.0 - 110.0	LOW		

Figura 6 - Caine, anemie non-regenerativa

Hemoleucograma realizata in cadrul Laboratorului din Spitalul Universitar de Urgente Prof. Univ. Dr. Alin Birtoiu

Este foarte important sa se identifice cauza anemiei pentru a se putea institui un tratament corespunzator. Transfuziile de sange nu au scop curativ, ci fac parte din managementul de tratament si sustinere a pacientilor anemici. Dupa stabilizarea pacientului si determinarea cauzei anemiei se instituie si tratamentul care difera in functie de fiecare afectiune in parte.

Deshidratarea se caracterizeaza prin deficitul de apa si electroliti din organism. Apare, de obicei, in caz de varsaturi persistente si diaree severa, precum si la temperaturi foarte ridicate, in Parvoviroza, dar si in corelatie cu bolile renale sau diabetul zaharat prin urinarea excesiva.

Cele mai intalnite semne in deshidratare la caini sunt:

- 1 Pierderea elasticitatii pielii.
- 2 Culoarea gingiilor si a mucoaselor - la un caine sanatos gingiile sunt de culoare roz deschis, aluneacoase la atingere si umede. In cazul deshidratarii, ele sunt lipicioase, uscate si albicioase.
- 3 Letargia - cainele este apatic, letargic si apetitul lipseste.





Figura 7 - Caine, mucoase roz
<https://www.aflacum.ro/articole/veterinar/>

Diagnosticul - usor de pus in baza semnelor clinice. In cazul deshidratarii, valorile eritrocitelor, hematocritului si ale hemoglobinei sunt modificate.



Figura 8 - Caine, mucoase palide
<https://www.petyoo.it/blog/cani/gengive-bianche.html>

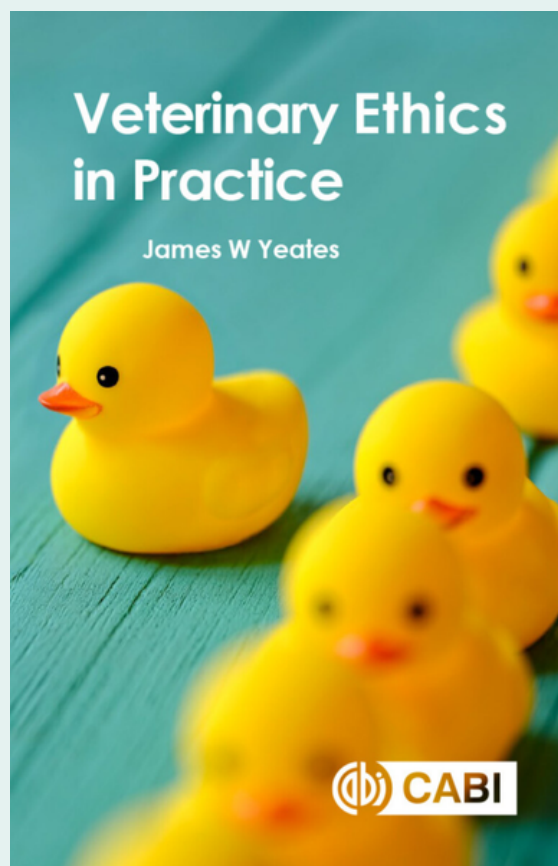
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- www.e-vet.ro

Test	Results	Reference Interval	LOW	NORMAL	HIGH
ProCyte Dx (June 28, 2022 10:25 AM)					
RBC	10.00 Mj/L	5.65 - 8.87	HIGH		
HCT	* 62.2 %	37.3 - 61.7	HIGH		
HGB	22.0 g/dL	13.1 - 20.5	HIGH		

Figura 9 - Caine
 Hemoleucograma realizata in cadrul Laboratorului din Spitalul Universitar de Urgente Prof. Univ. Dr. Alin Birtoiu

book of the month



The author; James W. Yeates, PhD is Chief Veterinary Officer of the RSPCA. He is a RCVS Specialist in animal welfare science, ethics and law, a European Diplomat of Animal welfare and behavioral medicine and a RCVS Diplomat in Animal welfare science, ethics and law.

Veterinary Ethics in Practice gives non-specialist veterinary professionals an introduction to ethics. It helps readers to think about, and discuss, ethical dilemmas and viewpoints faced by practitioners in their daily practice.

The book:

- Is an important primer and introduction to basic ethical dilemmas
- Helps improve ethical reasoning, through the use of numerous worked examples, leading to increased confidence in decisions and actions
- Explains key ethical concepts and terminology making the subject easier to understand
- Contains case studies which help bring real dilemmas to life.

With carefully crafted themes and problem cases in farm animal, companion animal, equine, wildlife, zoo and laboratory settings, the book provides an important yet concise and accessible introduction to moral decision-making in veterinary practice.

A FEW SENTIMENTAL WORDS



Article by Petre Ciprian Dragomir

I am not going to lie to you all, before starting my new article about peritonitis I might get a little bit sentimental. Because being the last issue of this year I just realized something, and I want to share it with you.

for writing to us, for participating in contests and for the fact that the printed editions simply disappear within a few days of having them brought from the printing house.

At the same time, I can't help but to remember the moments when The Campus existed only in theory, when we were just talking about it. It was at the end of the summer when I was talking with Dr. Uzun about the fact that we don't have a name, that we need an attractive name.

Then we got to the discussion about the fact that we need a Facebook page, no, Instagram, to take pictures to be as close to the readers as possible. I will be honest, I was already in the world of dreams, but all these dreams became reality, and they became reality with you and through you and through the power you gave us with each new edition that we prepared for you.



LIFE AFTER POLYTRAUMA the story of a real survivor

by Andrei Diaconescu

Accidentele rutiere în care sunt implicate animale au devenit o problemă majoră în contextul siguranței în trafic. Aceste evenimente sunt din ce în ce mai frecvente și, din nefericire, numărul lor se dublează anual. Statisticile mondiale raportează un număr de aproximativ 194 milioane de păsări și 29 milioane de mamifere implicate în accidente rutiere. Aceste accidente rutiere în care sunt implicate animalele, cauzează răni grave sau chiar decesul soferilor, generând costuri socio-economice importante. De exemplu, în Statele Unite ale Americii, un număr de 1-2 milioane de accidente rutiere anual sunt cauzate de căprioare, sunt soldate cu 200 de decese umane și prejudicii materiale de 8.4 milioane de dolari.

Într-o situație asemănătoare s-a aflat și Tomi, o felină din rasa Europeană care în dimineața zilei de 19 iulie 2021 a fost implicată într-un accident rutier. A fost adus la Spitalul Universitar de Urgență "Profesor Dr. Alin Birțoiu" și examenul clinic a evidențiat politraumatismele cauzate de accidentul rutier, multiple plăgi cutanate mușcate, rănii auriculare și microsporite.

Examenul neurologic a evidențiat stăutul mental depresat, capul întors pe partea stângă (pleurostotonus), anizocorie, răspunsul la amenințare absent, reflexul pupilar cromatic diminuat și nistagmus rotator. Diagnosticul stabilit în urma examenului neurologic: Sindrom vestibular central și periferic cu afectarea nervului optic și oculomotor, traumatism cranio-facial (Modified Glasgow Coma Scale: 16). Tratamentul instituit de urgență a permis evaluarea radiografică a pacientului Tomi la 24 de ore de la accident.

CONTINUED TO P. 03

December 2021

special christmas edition Issue 1/

Same time last year in December, The Campus released the first issue, and I can't just not take a second to remember everything about it and also to thank you so much because you are the reason why we do what we do and we thank you for being with us, for following us on social networks,



HYPOTHERMIA IN CATS & DOGS

Article by Christopher G. Byers,
DVM, DACVECC, DACVIM (SAIM)



meet the
AUTHOR

Dr. Christopher G. Byers is a practicing board-certified veterinary emergency & critical care and small animal internal medicine specialist.

He received his BS degree in Animal Sciences from Colorado State University and his DVM from Cornell University's College of Veterinary Medicine.

His journey to becoming a specialist started young, with his first ever job working with animals. At just 10 years old he was working in a kennel, earning his first dollar by cleaning kennels out and providing for the comfort and wellbeing of the animals. Since then, he has grown in his love for animals, and his passion for animal care. Dr. Byers chose to specialize in veterinary emergency, and now helps save thousands of animals each year through his skills. Although Dr. Christopher loves being a veterinarian, he also has a strong passion for music. If he had to choose a different career besides vet care, he would become an A&R (artists & repertoire) for a music label. He loves listening to music and finding a way to support that love with a job would be fulfilling in its own way.

Dr. Byer also loves dancing and believes everyone should take the time to turn on some music, listen to the rhythm, and dance.

It's a wonderful way to connect with the world around you in a meaningful way, no matter what sort of dance calls to you.

Today, Dr. Byer is enjoying a successful career and continuing to grow both as a person and a veterinarian. He is always seeking to step out of his comfort zone, and learn something new about how the world works.

He shares much of his knowledge on his blog, <https://criticalcaredvm.com/> where he talks about various diseases and injuries that can occur to dogs, and what to do if you think your dog might have that problem.

The articles are written in a conversational style that is easy to understand, while still being highly informative.

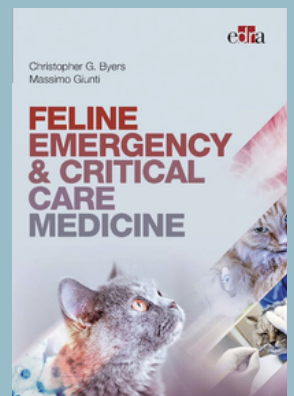
Dr. Byer's goal as a veterinarian is to change the vet industry in a meaningful way. His passion and drive has already pushed him to great heights as a veterinarian, but he hopes to continue adding to his success, helping animals one day at a time.

He continues to work on sharing his knowledge with the veterinary community, including co-editing a textbook on the subject entitled.



from us to The Campus followers;

Feline Emergency and Critical Care Medicine. The unique book is carefully edited to make it easy to reference at any time, so it can be helpful both in real life situations as well as in the classroom.



Hypothermia, or subnormal body temperature, may be classified as primary or secondary.^[1] Primary hypothermia typically results from environmental exposure despite normal heat production by the body.^[2] Secondary hypothermia results from alterations in heat production because of illness, injury, or drugs.^[3,4] Understandably, secondary hypothermia may frequently influence morbidity and mortality in critically ill animals.

There are four basic mechanisms of heat loss:^[5]

- 1** Convection transfers heat from the body surface to air moving past the animal.
- 2** Conduction transfers heat from the body surface to colder objects in contact with the skin.
- 3** Radiation is the exchange of heat between the body and objects in the environment that are not in contact with the skin, independent of the temperature of the surrounding air.
- 4** Evaporation occurs when moisture in contact with skin or the respiratory tract dissipates into the air.

Heat production due to the body's various metabolic processes is directly proportionate to body mass, and, thus, cutaneous heat loss is a function of body surface area.^[6] Small companion animals have higher surface-area-to-body-mass ratios that make them uniquely susceptible to heat loss. Additionally, cachectic, debilitated, immobile, and critically ill patients have impaired thermoregulatory capabilities and may not be able to retain or seek heat.



Thermoregulation

Receptors for cold and warm are distributed throughout the body. Cold signals traverse A-delta fibers, and signals from warmth receptors are relayed through C fibers.^[7] Processing thermoregulatory information occurs through three pathways:^[7] afferent thermal sensing from the periphery, central regulation in the hypothalamus, and efferent responses.

Given these three pathways, peripheral body temperatures are constantly fluctuating while the posterior hypothalamic thermoregulatory center maintains a relatively constant core temperature.^[8]

Cellular metabolism results in heat production by the body, and heat is lost from the body when core heat is transferred through variably conductive tissues to the skin and is subsequently lost to the environment.^[6] Specifically, heat is transferred from the body's core to the skin through a multitude of blood vessels, including venous plexuses and capillaries, with arteriovenous connections that are under the control of the autonomic nervous system.^[9,10] The rate of blood flow through these arteriovenous anastomoses varies depending on the degree of vasoconstriction or vasodilation desired.^[9,10] Increased blood flow leads to increased heat loss, whereas decreased blood flow results in core heat conservation.^[5]

Hypothermic Spiral

As core body temperature dips below 94°F (34.4°C), thermoregulation is impaired, and animals characteristically cease to shiver or seek heat.^[11]

Peripheral vasodilation rather than vasoconstriction predominates, leading to continued core heat loss.^[12] Additionally, heat production decreases because of the decreased metabolic rate.^[4,6] Concurrently, severe hypothermia depresses the central nervous system, ultimately resulting in a hypothalamus that is less responsive to hypothermia.^[6] Indeed, when the body core temperature drops below 88°F (31.1°C), thermoregulation ceases.^[5]

Potential Complications

Cardiac effects

Common electrocardiographic changes seen with hypothermia include sinus bradycardia, an increased Q-T interval, and the J, or Osborn, wave (Figure 1).^[13,14] In people, sinus bradycardia and decreased T wave voltage are seen at 95°F (35°C), and with progressed hypothermia there is prolongation of the P-R and Q-T intervals and QRS complex. In dogs and cats, the J wave is typically seen at temperatures from 86-93.2°F (30-34°C), and there is usually atrial fibrillation or ventricular irritability that terminates as ventricular fibrillation at temperatures below this rate.^[13,15,17] The prominence of the J wave is related to body temperature, and its genesis is related to dysfunction of the intramyocardial M cells.^[18]

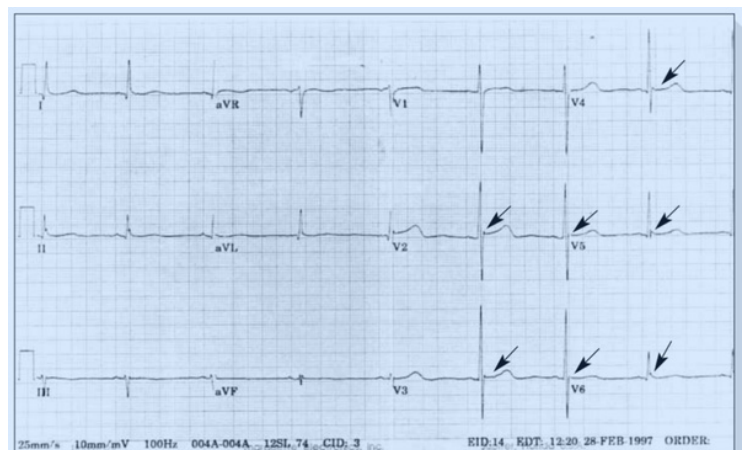


Figure 1; 12-lead ECG showing sinus bradycardia, prolonged QT intervals, wide T waves and the characteristic Osborn waves.

This dysfunction results from a voltage gradient between the epicardium and endocardium that, in turn, produces a prominent epicardial action potential notch.^[18] This abnormal deflection is more or less present and prominent in each electrocardiographic plane, and the wave occurs as a convex elevation at the junction of the QRS complex and the S-T segment.^[19] The responsiveness of alpha-1 adrenergic receptors decreases in dogs and cats with decreased core temperatures. Initially, alpha-1 receptor catecholamine binding increases, but with prolonged and progressive hypothermia, there is decreased receptor affinity. Reduced receptor binding results in a diminished contractile response and, ultimately, vasodilation of the cutaneous veins.^[20]

Previous studies have demonstrated hypersensitivity in beta-1 receptors during hypothermia; additionally, alpha-1 adrenoceptor-mediated vasoconstriction was attenuated while alpha-2 adrenoceptor response was unaffected.^[21,22] Both alpha and beta adrenoceptors are desensitized in people with hypothermia associated with cardiopulmonary bypass.^[23]

Hypothermia around 95 F (35 C) is associated with markedly decreased left ventricular contractility and leads to reduced cardiac output and impaired diastolic relaxation in neonatal pigs.^[24,25]

Cardiac function in dogs with experimentally induced hypothermia is characterized by an initial period of increased ventricular contractility followed by decreased contractility at temperatures less than 68 F (20 C).^[26] Ventricular fibrillation was documented in 50% of the dogs with temperatures below 74 F (23.3 C).^[26]

Pulmonary effects

Severe hypothermia causes a reduction in both respiratory rate and tidal volume because of decreased cellular metabolism and lowered carbon dioxide production, thus diminishing the stimulation of ventilation.^[27,29] Patients with subnormal body temperatures also have a blunted response to carbon dioxide, but the degree of oxygen use concurrently decreases, leaving the respiratory quotient unaffected.^[30] The shifting of the oxygen-hemoglobin dissociation curve to the left, blood sludging, and a decline in alveolar ventilation may lead to hypoxia, pulmonary edema, acute respiratory distress syndrome, or pneumonia.^[31,33] Patients that experience near-drowning initially hyperventilate secondary to the mammalian dive reflex, potentially resulting in an alkalosis that may exacerbate a left shift of the oxygen-hemoglobin dissociation curve. Severely hypothermic patients may hypoventilate, possibly contributing to the development of acidosis.

Clinical pathology effects

Hypoglycemia and hypothermia frequently occur concurrently, and low blood sugar may exacerbate a decrease in metabolic activity that may perpetuate hypothermia.^[34,35]

Hypokalemia is commonly documented in patients with hypothermia and is a result of intracellular shifting (rather than true loss) that is thought to be due to a temporary depression in the function of the potassium pump mechanism in the cell membrane.^[36,37] Potassium derangements secondary to hypothermia must be monitored for and carefully corrected to avoid the development of dysrhythmias or perfusion abnormalities, particularly during rewarming.^[36,39]

Hypothermia-induced coagulation abnormalities include reversible platelet sequestration and decreased platelet thromboxane production, granule secretion, and von Willebrand factor expression leading to decreased platelet aggregation, as well as enhanced fibrinolytic activity and slowing of enzymatic activity required for clotting.^[40] One study showed surface cooling to 89.6 F (32 C) induced reversible platelet dysfunction, and another study showed bleeding time in pigs doubled at 86 F (30 C).^[41,42] Coagulation abnormalities may be easily missed in the clinical setting because most coagulation tests are conducted at 98.6 F (37 C), potentially preventing identification of a coagulopathy present at hypothermic temperatures. Hypothermia-induced coagulation disorders rapidly reverse once normothermia is reestablished.^[41]



Hypothermia induces diuresis and a reduction in glomerular filtration rate, which is secondary to both a reduced release of vasopressin and a reduction in renal medullary hypertonicity.^[43] With progressive hypothermia, hypovolemia and subsequent mild increases in hematocrit and blood viscosity develop.^[44] Hemoconcentration and low microcirculatory flow increase blood viscosity by 4-6% for each one degree Celsius that body temperature declines.^[44] Suppression of antidiuretic hormone and redirected shunting of peripheral blood induce diuresis in hypothermic states that may contribute to hypovolemia.^[45,46]

to be continued!

GENERAL ASPECTS OF PERITONITIS



Article by Petre Ciprian Dragomir

Did I tell you I'd get sentimental and emotional right? Let me wipe the tear from the corner of my eye and let's start today's topic.

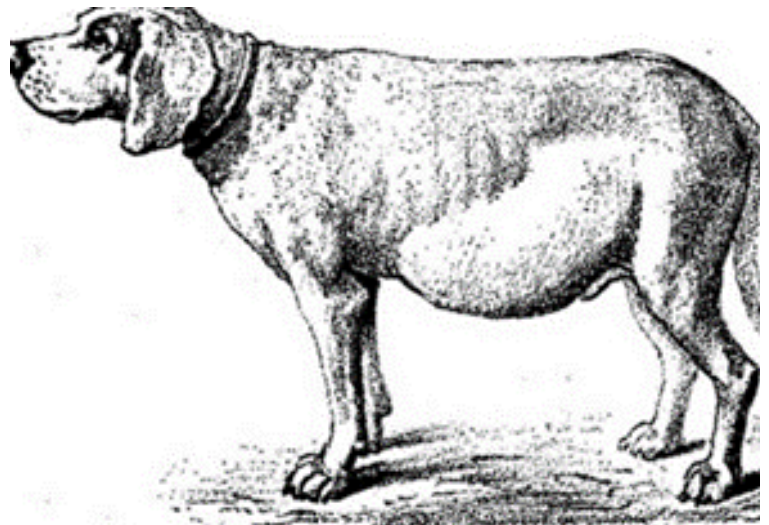
Every time I heard people talking about peritonitis, everyone had a serious look, it sounded like something serious and very dangerous, and I wanted to better understand what it means and how it can be treated, and I want to offer you this information too.

To begin with, so that we can better understand today's topic, let's explain what peritonitis means. Peritonitis is defined as an inflammatory process of the peritoneum caused by an agent, such as: bacteria, fungi, drugs, granulomas, or foreign bodies. Other causes of peritonitis can be perforation of the intestinal tract, pancreatitis, stomach ulcers or ascites.

On the other hand, a response phenomenon of the body through the localization of peritonitis is represented by the formation of abscesses, a process characterized by the isolation and separation of the infectious process from the rest of the abdominal cavity.

Peritonitis can be: acute or chronic, septic or nonseptic, local or diffuse, or adhesive or exudative.

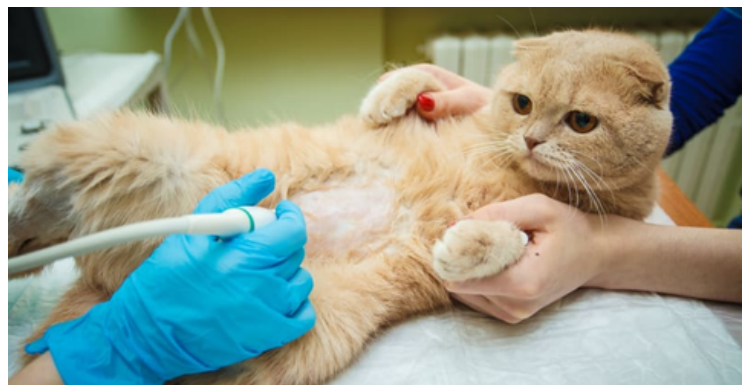
Talking about the clinical symptoms that can occur in a peritonitis, regarding about the type of peritonitis that the animal is suffering there can be a lot of them, but this are some of the common ones: increased abdominal wall tension, abdominal pain fever, decreased general behavior, kyphosis, abdominal fluid accumulation.



Dog with ascites Source: "Canine distemper, its complications, sequelae, and treatment" (1922)

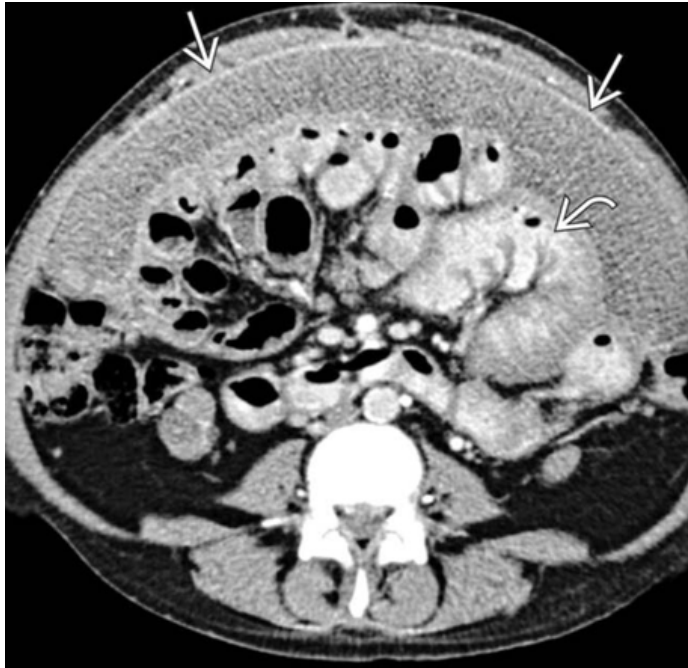
When we are talking about dogs or cat, during a clinical exam they will be mainly the ones explained earlier adding vomiting and decreased defecation.

Because the symptoms can often be vague, more complex tests are required for a definite diagnosis. Such as: Abdominal ultrasonography and Lab analyses (blood test, PCR, etc). abdominal ultrasonography, help to verify the diagnosis, visualize the extent and character of the peritonitis, and may provide information on the etiology.



Abdominal ultrasonography in a cat

During my research I also found some interesting screenings regarding the peritonitis that you might want to see:



(Right) Axial CECT in a patient on chronic peritoneal dialysis with constant symptoms of bowel obstruction shows loculated ascites with thickened, enhancing parietal/visceral peritoneum encasing the small bowel and creating functional obstruction.

Note the dilated segments of bowel.

Source: <https://radiologykey.com/peritonitis-3/>



Radiographic image of peritonitis

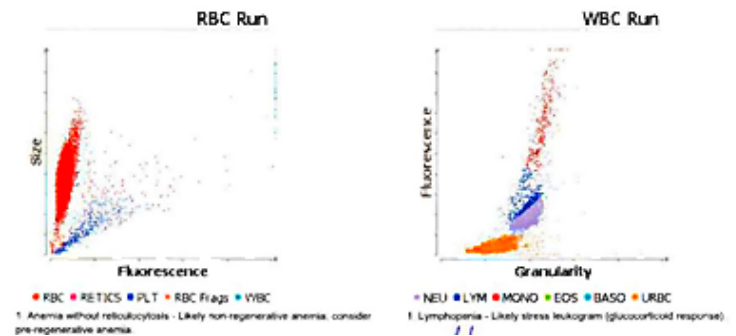
Source: <https://www.stortvet.com/peritonitis/>

Laboratory analyses are helpful to confirm the clinical diagnosis and determine the severity of peritonitis and should include several biochemical parameters in blood and peritoneal fluid.



How does a real lab result look you think? Let me show a sneak peak from our beloved hospital.

Test	Results	Reference Interval	LOW	NORMAL	HIGH
ProCyt Dx (January 25, 2023 9:51 AM)					
RBC	5.99 Mj/L	6.54 - 12.20	LOW		
HCT	25.0 %	30.3 - 52.3	LOW		
HGB	8.5 g/dL	9.8 - 16.2	LOW		
MCV	41.7 fL	35.9 - 53.1			
MCH	14.2 pg	11.8 - 17.3			
MCHC	34.0 g/dL	28.1 - 35.8			
RDW	22.8 %	15.0 - 27.0			
%RETIC	0.3 %				
RETIC	15.6 Kj/L	3.0 - 50.0			
RETIC-HGB	14.7 pg	13.2 - 20.8			
WBC	8.25 Kj/L	2.87 - 17.02			
%NEU	85.5 %				
%LYM	10.1 %				
%MONO	4.2 %				
%EOS	0.0 %				
%BASO	0.2 %				
NEU	7.05 Kj/L	2.30 - 10.29			
LYM	0.83 Kj/L	0.92 - 6.88	LOW		
MONO	0.35 Kj/L	0.05 - 0.87			
EOS	0.00 Kj/L	0.17 - 1.57	LOW		
BASO	0.02 Kj/L	0.01 - 0.26			
PLT	68 Kj/L	151 - 600	LOW		
MPV	22.8 fL	11.4 - 21.6	HIGH		
PCT	0.16 %	0.17 - 0.86	LOW		



Hematology result in a patient. Credit; Laboratory of University Veterinary Emergency Hospital Prof. Univ. Dr. Alin Birtoiu

Test	Results	Reference Interval	LOW	NORMAL	HIGH
Catalyst Dx (January 25, 2023 9:58 AM)					
GLU	128 mg/dL	77 - 153			
CREA	0.4 mg/dL	0.6 - 1.6	LOW		
BUN	10 mg/dL	16 - 33	LOW		
BUN/CREA	25				
PHOS	6.3 mg/dL	4.5 - 10.4			
CA	8.5 mg/dL	7.9 - 11.3			
TP	10.7 g/dL	5.2 - 8.2	HIGH		
ALB	2.6 g/dL	2.2 - 3.9			
GLOB	8.1 g/dL	2.8 - 4.8	HIGH		
ALB/GLOB	0.3				
ALT	59 U/L	12 - 115			
ALKP	57 U/L	14 - 192			
GGT	0 U/L	0 - 1			
TBIL	1.4 mg/dL	0.0 - 0.9	HIGH		
CHOL	222 mg/dL	62 - 191	HIGH		
AMYL	1515 U/L	500 - 1400	HIGH		
LIPA	623 U/L	40 - 500	HIGH		

Biochemistry result in a patient. Credit; Laboratory of University Veterinary Emergency Hospital Prof. Univ. Dr. Alin Birtoiu

Teste de laborator efectuate și rezultate obținute:

Identificare genom Coronavirus felin* prin qPCR

Detectat, valoare CT = 30.98

Observații și recomandări:

1. Valoarea Ct obținută pentru identificare genom Coronavirus felin* denotă o încărcătură foarte scăzută, la nivel de probă biologică analizată.
2. Monitorizare eficientă, tratament

PCR (Polymerase Chain Reaction) result of a cat. Credit: Laboratory of University Veterinary Emergency Hospital Prof. Univ. Dr. Alin Birtoiu

Acute, diffuse peritonitis with toxemia is usually accompanied by leukopenia, neutropenia, and a marked increase in immature neutrophils. In less severe acute peritonitis, leukocytosis may occur from an increased neutrophil production. Acute, localized peritonitis may reveal a normal WBC count with a regenerative left shift.

The total WBC count in chronic peritonitis may be normal, with an occasional increase in lymphocytes and monocytes. Anemia may occur due to hemorrhage into the peritoneal cavity but is also commonly associated with chronic inflammatory processes.

As explained earlier, if during the ultrasonography exam liquid is found in the abdominal cavity, part of that liquid must be extracted and given to the lab for more test, because it can answer to a lot of questions.



Abdominocentesis has a diagnostic and treatment purposes. Excess fluid is painful, and removal greatly reduces this pain.

After all the laboratory tests have been performed and the diagnosis of peritonitis is confirmed, this is a severe, serious one. Most of the time, the prognosis is reserved.

the treatment used and its choice is made according to the type of peritonitis. In addition to drug treatment (anti-inflammatory), antibiotic (Appropriate antimicrobial therapy should be started once septic peritonitis is suspected or confirmed) can also be prescribed.

It can also lead to a lavage of the abdominal cavity or surgical interventions.

Surgeries are performed for example when an organ of the abdominal cavity is leaking, or the surgeon can perform just an explorative surgery to better

understand how the body is working and how the peritonitis started.

In chronic adhesive peritonitis, laparoscopy or laparotomy may be considered to cut adhesions that prevent intestinal motility or to remove/drain intestinal abscesses. However, the success of such interventions might be limited.

If the lavage of the abdominal cavity is chosen, after it is performed it is recommended the application of drains tube. They can allow the future liquid that is building up to be drained and can be used for future lavage. The decision to manage peritoneal drainage is based on the severity of the case, experience level, intensive care possibility, and equipment. Maintenance of drain patency can be difficult, especially in cattle, caused by the extensive fibrin formation in the abdominal cavity. Because of the severe pain and suffering that the patient can feel, they will probably not going to eat or drink enough water. That's why nutritional support has to be provided along vitamins and antioxidants.

About Cats most of you already know about FIP or Feline infectious peritonitis. In these cases, the feline coronavirus, the virus that causes this infectious peritonitis, is found in feces and can be transmitted between cats through direct contact. In the case of infectious peritonitis, we are talking about the "wet form" that the virus can transmit and represents the accumulation of fluid, especially in the abdominal cavity. After the diagnostic is made, which mostly is done by the help of some PCR test, the treatment is palliative (glucocorticoids, anti-inflammatory). There are some studies that present a prophylactic method (vaccine), but the efficiency is not 100% and it is a work in progress.

Finally, I want to thank you once again for being with us and for supporting us in what we do, for asking questions so that we manage to arouse your curiosity and we try every time that every edition published and every article written meet your expectations and even surpass them. I wish you to enjoy the coming holidays with your loved ones, with friends and family, to have the most beautiful party at the end of the year and to welcome the new year with open arms and may the wishes and resolutions you you put them for the coming year to be fulfilled.

Happy holidays, happy new year and happy birthday my dear The Campus

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- <https://radiologykey.com/peritonitis-3/>

Course notes

HERNIES DIAPHRAGMATIQUES

R



Article by Esther Cheron



Clara Chataigner

Les hernies diaphragmatiques sont communes chez les animaux de compagnie et rare chez les animaux de production. Il en existe deux types : la hernie congénitale et la hernie traumatique. Pour bien comprendre le sujet, il faut redéfinir ses termes. Le diaphragme est donc le muscle séparant la cavité thoracique de la cavité abdominale. Il apporte une aide à la respiration. Une hernie est la protrusion d'un organe au travers d'un orifice naturel ou accidentel le sortant de ce fait de sa cavité d'origine. Une hernie diaphragmatique correspond à une rupture du diaphragme à travers laquelle les organes abdominaux se retrouvent dans la cavité thoracique.

Les hernies congénitales sont majoritairement dues à un défaut du septum transverse qui permet ainsi une communication entre la cavité péricardique et la cavité péritonéale. Elles sont appelées hernies péritonéo-péricardiques. Ce sont les hernies les plus communes chez les chiens et les chats, mais elles sont également présentes chez les chevaux. Il n'existe à ce jour pas de traitement pour ces hernies puisque les animaux décèdent à la naissance généralement. Il existe deux autres types de hernies congénitales, la hernie pleuro-péritonéale et la hernie hiatale. Pour les hernies traumatiques, les accidents de la route en sont la première cause recensée dans 85 % des cas. Deux autres causes possibles sont les chutes depuis des immeubles et des blessures pénétrantes.

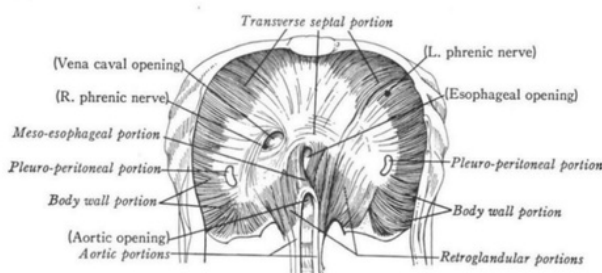


Figure 1. The components of the definitive diaphragm. (From Arey L.B: Developmental Anatomy, Edition 7. Philadelphia, WB Saunders Co, 1966, p 292; with permission.)

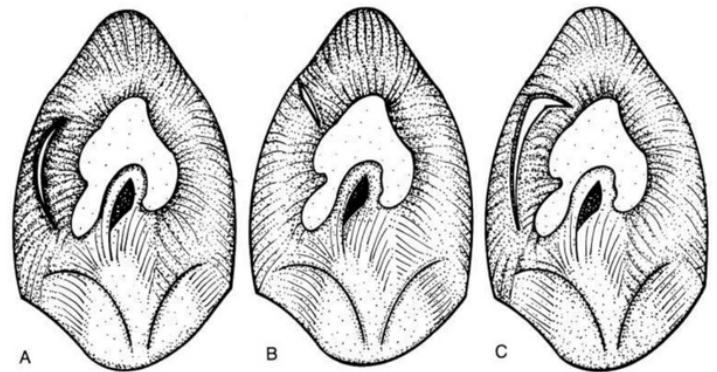


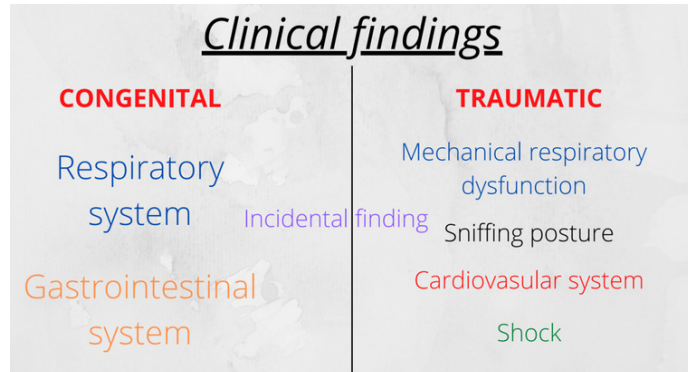
Figure 5. A, B and C, Classifications of diaphragmatic tears. A, Circumferential. B, Radial. C, Combination.

© Levine 19

Dans tous les cas, les points les plus faibles du diaphragme vont se rompre. Ils sont représentés par les parties musculaires puisque la partie tendineuse est très résistante. Ces ruptures se font selon l'orientation des fibres musculaires. Il en existe trois types. La rupture circonférentielle a lieu au niveau de l'attachement des côtes tandis que la rupture radiale suit l'orientation de la fibre musculaire. Le dernier type de rupture comprend un mélange entre les deux précédentes. Selon la taille et la localisation de la rupture, certains organes ont plus de chances de passer au travers de la hernie. En effet, si la rupture a lieu du côté droit, alors le foie sera le premier organe à se retrouver dans la cavité thoracique. Lorsque la rupture est du côté gauche, l'estomac sera l'organe qui se trouvera dans la cavité thoracique.

La physiopathologie des hernies diaphragmatiques est la suivante : comme les organes abdominaux se retrouvent dans la cavité thoracique, ils compriment les poumons et mènent à une atélectasie pulmonaire. Ceci peut entraîner par la suite une réduction plus ou moins importante de la capacité pulmonaire. Également, si la veine cave est comprimée, il peut y avoir une diminution du retour veineux qui à son tour causera une réduction du débit cardiaque.

Pour finir, si une blessure traumatique est présente au niveau du thorax, un œdème pulmonaire interstitiel peut s'y former. Ce dernier réduit la prise de dioxygène et conduit à une hypoxémie doublée d'une acidose qui mèneront à une décompensation pulmonaire et finalement à un état de choc qui peut mener à la mort.



Clinical findings prepared by Esther Cheron & Clara Chataigner as course notes 4th year Eng. Section.

L'expression clinique de la hernie diaphragmatique dépend de l'étendu de la rupture, depuis combien de temps elle est présente, l'espèce et les événements extérieurs qui peuvent en précipiter sa découverte. Il n'y a aujourd'hui aucun signe clinique qui permet de confirmer cette pathologie. En ce qui concerne les hernies diaphragmatiques congénitales, la plupart du temps, il n'y a pas de signes cliniques et la découverte est accidentelle lors de castrations par exemple. Généralement, les signes présents impliquent le système respiratoire avec des dyspnées par exemple, le système gastro-intestinal avec douleurs, des vomissements et des diarrhées et enfin le système circulatoire avec la diminution du retour veineux. Les animaux qui survivent ne grandissent pas et ont un historique depuis petit de stress cardiopulmonaire.

Pour les hernies traumatiques, les symptômes sont très nombreux et dépendent de l'origine du traumatisme. Il y a généralement des dysfonctions mécaniques du système respiratoire comme des côtes fracturées ou des lacérations sur les poumons. D'autres signes respiratoires impliquent la respiration paradoxale, les pneumothorax ou encore les hémithorax. L'animal est également dans une position particulière avec une extension de la tête et du cou et souffre beaucoup. Au niveau cardiovasculaire, le signe le plus présent est le son étouffé du cœur dû à l'accumulation de fluide dans le péricarde. L'animal est très souvent en état de choc. Il possède des signes spécifiques comme les muqueuses pâles ou cyanotiques, de la tachycardie, de la tachypnée et enfin un manque d'air qui induit une hypoventilation et donc à une hypoperfusion des tissus et finalement à de l'hypoxie.

Les blessures aux organes internes, aux os et au système nerveux central peuvent cacher les signes de la hernie diaphragmatique. Une hernie traumatique peut par ailleurs être une découverte accidentelle car les organes se déplacent librement entre la cavité thoracique et la cavité abdominale.

Selon les espèces, il y a des signes particuliers, par exemple les chevaux peuvent faire des coliques aiguës ou sévères. Tandis que chez les bovins ou les buffles peuvent avoir une inflammation du réticulum si cet organe passe à travers la hernie.

Lors de l'examen physique, il faut vérifier d'abord tous les signes liés au choc comme la tachypnée, les problèmes cardiovasculaires ou encore si des hémorragies sont présentes. Ensuite, il faut vérifier à l'auscultation la présence ou non des sons pulmonaires ou des sons gastro-intestinaux dans la cavité thoracique. Le cœur doit être vérifié pour entendre le son "étouffé" ou non. L'abdomen à la palpation peut être vide et replié à cause de l'absence d'organes.

Selon les organes qui passent à travers la hernie, les symptômes diffèrent, par exemple si l'estomac passe dans la hernie, alors à la percussion, il se distend et gonfle, créant une résonance au niveau du côté gauche. Si cela devient chronique, il peut y avoir une obstruction gastro-intestinale partielle ou complète. Concernant le système digestif, il y a un son spécifique appelé borborygme qui est un son grondant à cause des gaz présents dans l'intestin.

Physical examination



Diagnosis



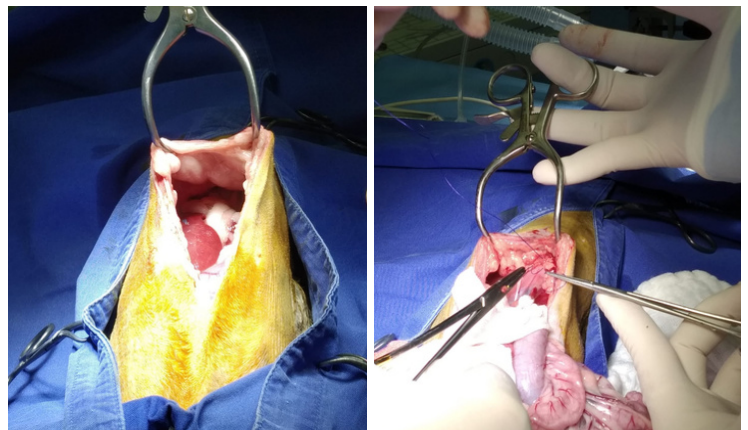
Physical examination and diagnosis slide prepared by Esther Cheron & Clara Chataigner as course notes 4th year Eng. Section.

Enfin, le foie est l'organe qui passe le plus souvent au travers de la hernie à cause de sa localisation proche du diaphragme. Il est associé à de l'hydrothorax.

Le seul traitement possible est la chirurgie, également appelée herniorraphie. L'animal est d'abord stabilisé et placé sous oxygénation, analgésie et mis sous perfusion pour aider le système cardiovasculaire. Tant que le patient n'est pas stable, l'animal ne part pas en chirurgie. En effet, des études montrent que si la chirurgie est réalisée durant les premières 24 h, le taux de mortalité est 33 % plus élevé.

Une fois qu'il est stable, le patient est mis sous anesthésie gazeuse Isoflurane 2 %. La ventilation artificielle est aussi utilisée, mais n'excède pas 20 mmHg pour éviter un barotraumatisme. La technique choisie pour l'opération est la coeliotomie sur la ligne ventrale. Cette méthode est la plus commune et permet de bien voir les organes abdominaux et la hernie peu importe sa localisation. Donc, après l'asepsie, l'abdomen est ouvert du processus xiphoïde jusqu'à l'ombilic. Ensuite, le chirurgien cherche la hernie, et une fois qu'elle est trouvée, le chirurgien vérifie bien tout le diaphragme pour être sûr qu'il n'y en a pas d'autres. Il faut aussi vérifier s'il existe des adhérences entre les organes et le diaphragme ou entre les organes thoraciques et ceux abdominaux. Enfin, la viabilité des organes est évaluée et toute partie nécrosée sera enlevée. Si le foie a passé la hernie, dans ce cas, il faut trouver la vésicule biliaire et la prendre avec une pince atomique pour sortir le foie de la cavité thoracique. Une fois que tous les organes abdominaux sont sortis de la cavité thoracique, elle est vérifiée pour voir s'il y a des anomalies ou encore des lésions pulmonaires ou cardiaques. Si tout va bien, la cavité thoracique est lavée avec de l'eau tiède et stérile. Le diaphragme peut maintenant être refermé en commençant du côté dorsal pour remonter vers le côté ventral de la hernie. Le fil utilisé pour cette suture dépend du chirurgien, généralement un fil mono-filament absorbable ou non absorbable. La technique employée est le surjet simple. Juste avant le dernier point, un cathéter thoracique est placé pour enlever/ajouter de l'air ou du liquide. Il peut être laissé ou enlevé dès que la pression thoracique est de nouveau physiologique. Il ne faut surtout pas essayer de forcer les poumons à reprendre leur volume physiologique parce que cela mènera à un œdème de ré-expansion. Ensuite, les organes abdominaux sont vérifiés et s'ils sont en bon état, la cavité péritonéale est lavée avec de l'eau tiède stérile. En même temps, les muscles abdominaux sont mis en tension pour les aider à recevoir le poids de tous les organes. En effet, les muscles abdominaux ne sont pas prêts à soutenir le poids de tous les organes d'un coup puisqu'ils n'étaient pas toujours présents dans la cavité péritonéale.

Une fois que la cavité péritonéale est bien nettoyée et les muscles abdominaux bien détendus, la cavité abdominale peut être refermée en utilisant un surjet simple. Finalement, la peau est refermée avec une suture intradermique. Il existe néanmoins quelques complications possibles durant la chirurgie comme la torsion des lobes du foie, l'invagination intestinale ou encore une hernie costale et abdominale. Le patient est surveillé pendant les 6-8 h suivant la chirurgie. Le vétérinaire doit soulager la douleur de l'animal tout en évitant d'utiliser des médicaments ayant des effets dépressifs sur le système respiratoire. Il doit également vérifier le drain thoracique s'il est présent, le temps de remplissage capillaire, la couleur des muqueuses, le rythme et la configuration respiratoire ainsi que sa température et son état hydrique.



Traumatic Diaphragmatic Hernia surgery. Credit; FMVB Surgery Department

Les complications possibles sont les suivantes : la plus commune étant l'œdème de ré-expansion, qui peut mener à une mort rapide. Il y a par ailleurs des dyspnées ou encore des pneumothorax. La deuxième grande complication est la blessure de reperfusion touchant un tissu ischémique qui entraîne une inflammation de compensation occasionnant des dommages oxydatifs. Si des antibiotiques avaient été donnés avant la chirurgie, il est préférable de les continuer pendant plusieurs jours. De plus, des antibiotiques prophylactiques peuvent être donnés. Les drains thoraciques peuvent être laissés pendant plusieurs jours jusqu'à ce que les poumons retrouvent leur taille physiologique. L'animal ne doit pas être stimulé pour se reposer un maximum et encourager sa guérison. Enfin, des médicaments pour soutenir la fonction hépatique sont recommandés.

Postoperative management, complications and prognosis

1. **Respiratory abnormalities** → dyspnea, tachypnea
2. **Reexpansion edema** → most frequent
3. **Pneumothorax**
4. **Ascites**
5. **Hernia recurrence**
6. **Death**

Possible complications slide prepared by Esther Cheron & Clara Chataigner as course notes 4th year Eng. Section.

Le pronostic de la chirurgie est variable. S'il existe des blessures concomitantes comme des fractures ou des blessures aux organes internes, la mortalité est plus élevée. Si le choc est bien géré, alors l'animal a plus de chance de survie. Enfin, si la hernie diaphragmatique est découverte tardivement, le pronostic est pire. Généralement, sa gravité est due aux adhésions entre les organes ou entre les organes et les tissus.

En ce qui concerne la hernie diaphragmatique congénitale, elle a un faible taux de mortalité et une très bonne guérison. Mais s'il existe des problèmes cardiaques concomitants, alors le pronostic est plus réservé.

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- <https://www.youtube.com/watch?v=XdRiLSxzeh8>
- <https://www.youtube.com/watch?v=EkifSxDZCF4>

A CAT WILL DO

what it
wants,
when it
wants.

AND THERE IS
NOTHING YOU CAN
DO ABOUT IT

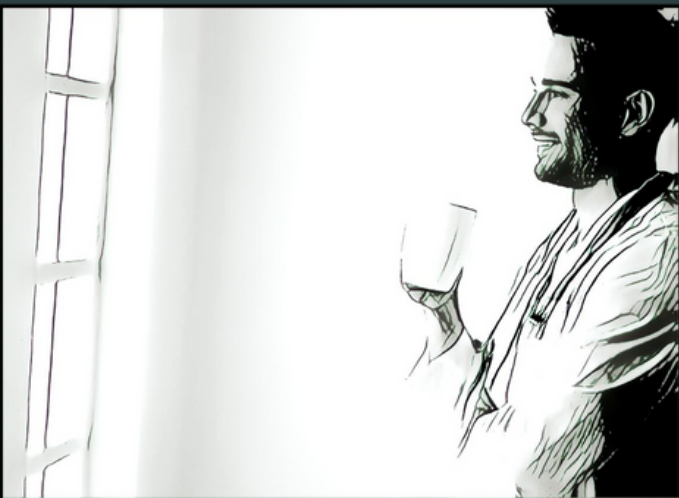
Frank Parkins



A DAY IN PARADISE



somewhere in the world or
maybe in the parallel universe



That was the last days of the year. I was so tired. Besides, I never liked Mondays. I am not Monday type man. But still let's put a smile with the morning coffee for Insta and see hundreds likes! I am daaaaamn good!



Winter sun... even can not warm itself! Huh...
My colleague called me for an **emergency** patient arrived to Hospital at night.

Amazing place on one of the most popular street. Definitely we are the best! I like cool entrances... I always use emergency entrance. HAH!

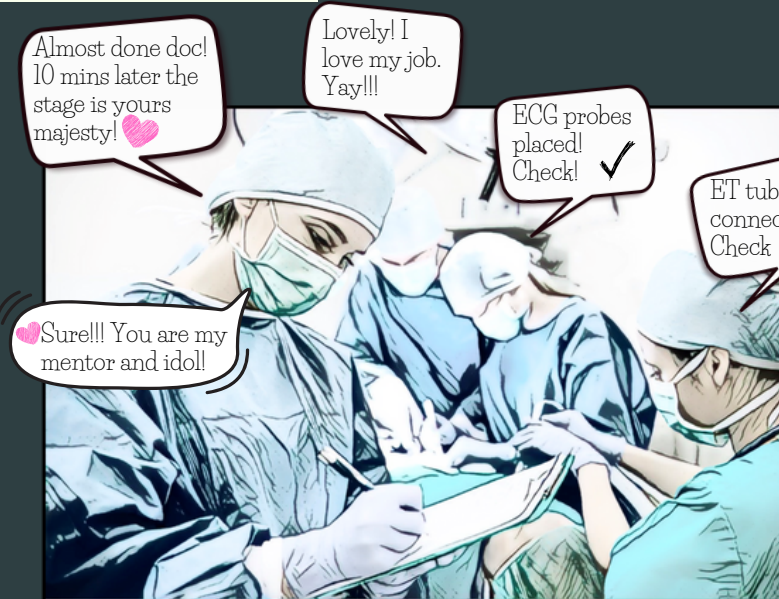
I had a short conversation with Dr. Wizard. I listened his camping experience in the weekend. Surely we also had a chit chat about the game!



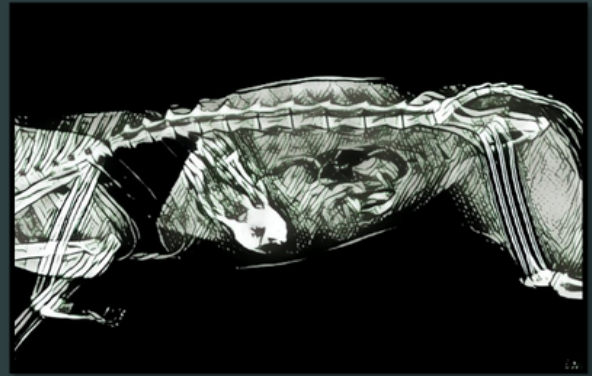
I changed my clothes and made my way directly to the X-ray room to see the radiographies...



couple minutes later... in the surgery and in the preparation rooms were full with happy people.



Meanwhile, the team already started to prepare the patient and the surgical theater!



We started to talk with the radiologist!



No chance M.J will kick them in the finals.

Morning angels!!! Ready for a brand new surgery?

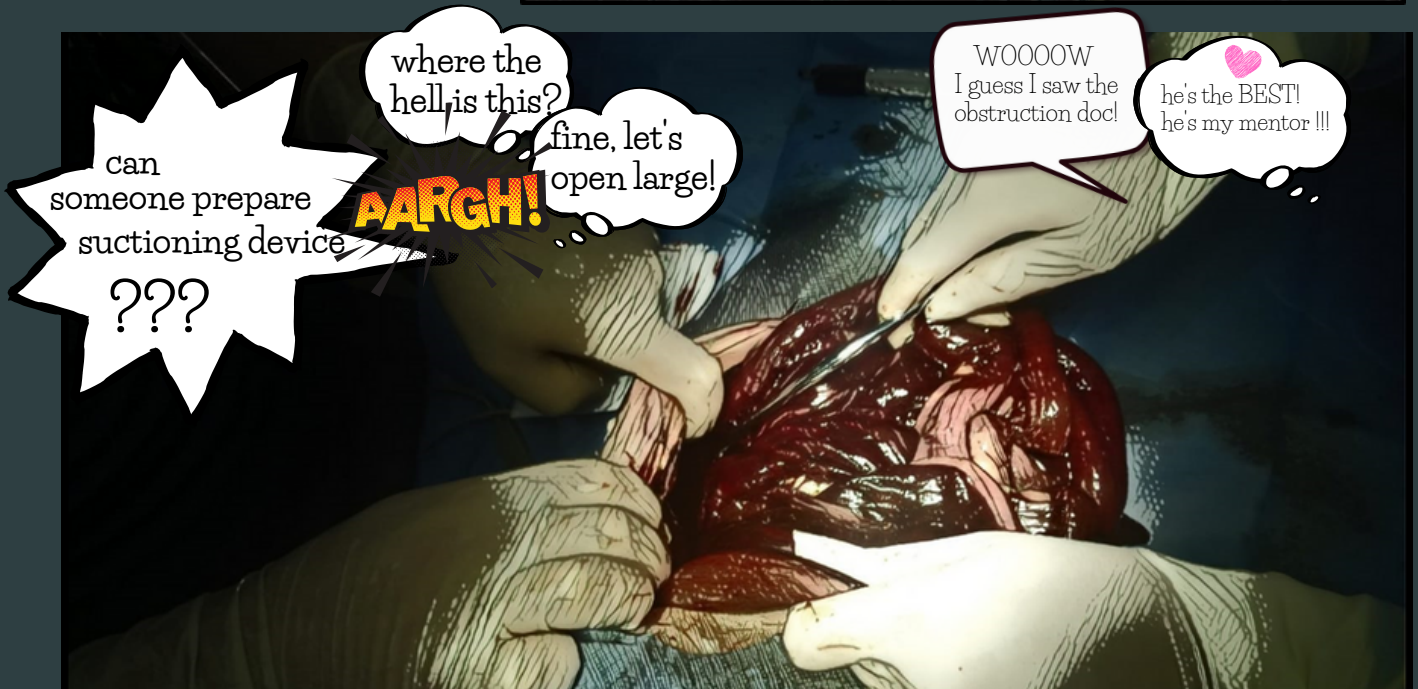
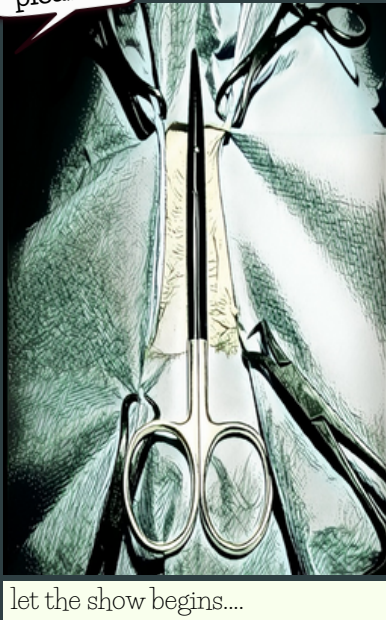
By the way, Blondiel will you assist me in the surgery?



After I washed my hands, they put the surgical scrubs on me. Well well well... Let the show begins!



Meanwhile the assistant tears the packs and serves...



Some time later!...

Finally!!! I don't understand dogs! Why they are swallowing women's nylon garter socks? What's the purpose of this?

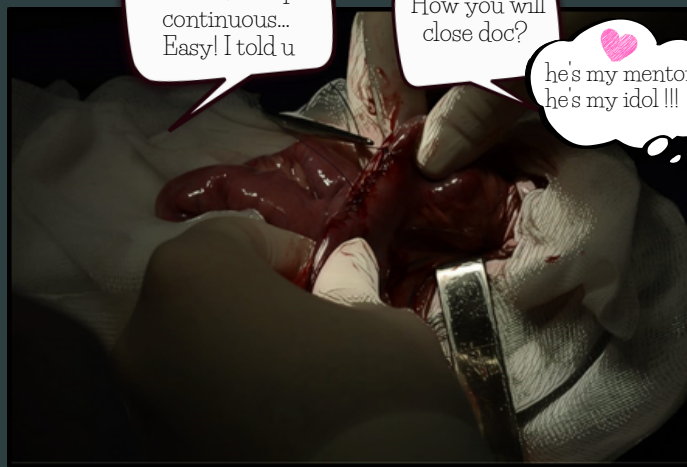


Oh boy! Really?
What's the
matter with u?

Humm. Come oon
let's make simple
continuous...
Easy! I told u

How you will
close doc?

he's my mentor!!
he's my idol !!!



and with this two socks was removed
successfully!
Yet I do not understand why? Just
why those dogs are eating these
things instead of food! Mhhh anyway!



he's my mentor!!
he's my idol !!!



BLUB GLUB

Well well!

of course we have a tradition here in
the parallel universe. After each
surgery I make my team to take a
fancy picture!!!

Good job team!

CLICK!



I jumped in my classic Ferrari, made my way to GYM.
By the way, do I like Ferrari? Definitely not!!!
But I bought this for to make show off!
U GOT THIS. HAH!



VROOM!

One week later. Very early
4:00 am

COME OOOOOON!
GIMME A BREAK



Hello dr. Almighty.
This is dr. Angel Rose
from the Parallel
Universe Hospital

Do you remember
the patient Potter
from last week with
foreign body?

Ok so, I just wanted
to inform you that
Potter
got peritonitis

Ok! Rose go on.
What's the
matter

Sure! what he
ate this time?

So what?!
That's not my
problem. I did a
perfect surgery

AARGH!

Always the same story. When they need to call the surgeon! Ok call me... When they need to ask something? Ask to surgeon! Ok ask me... When they are in trouble? Yeeea run and save us surgeon! Ok I save you After all those favors, when it comes to blame, blame the surgeon HAH!!!

The story "A day in paradise" is taken from the 4th episode of *Free Webinars for The Future Veterinary Doctors* series that performed by SL Univ. Dr. Seralp Uzun with 12 world wide known diplomates and professors in Covid -19 quarantine days. None of the people, events and places are real in the story. The story created for teaching purposes and to point the steps of the surgery to prevent from peritonitis in the post-op period. All rights are reserved by the author. No part of this story may be reproduced, stored in a retrieval system or transmitted in any form by any means electronic or mechanical, including photocopying, recording without written permission of the author. 01.01.2023.

Emotional
DAMAGE

price
QUIZ!

cut the paper and put it in the box
that you can find in the pharmacy,
faculty hospital.

the winner will be announced in the next
issue and on the instagram page

1. How many mistakes done by the team and
the surgeon?

- a. more than 5
- b. more than 10
- c. more than 16
- d. none

2. Which suture patterns can be chosen in
enterotomy surgery?

- a. simple interrupted and lambert
- b. ford interlocking and schmieden
- c. cushing and simple continuous
- d. schmieden and cushing

3. Minimum how many samples should be
collected during the surgery for the
bacteriologic exam?

- a. 2
- b. 3
- c. 5
- d. 7

4. What was the biggest mistake of the
surgeon?

Name and Surname

Year and the number

Stay
tuned

CONGRATULATIONS

THE CAMPUS

As we are celebrating our first year as The Campus, we wanted to introduce you our new fresh team members! Let's give them warm hugs!



Hello,
So I am Esther Cheron, I am 21 yo and I am in the 4th year in vet med school in Bucarest

but I came from France in Lyon. I choose vet med school because first of all, like all people in vet med school I like animals and also because I was always interested in med staff. Since I was children I was really impress by the people who save life so I decide to because one of them person.

I am interested in especially surgery but also in emergency.

I have two hobbies, the horse riding and the running. I will share articles about my other passion, skating, and many more! I wish you will enjoy!



Hi!
I am Laurie Paris, I am 25 years old and I am originally from Reunion Island.

I have travelled more than 10,000 km to make my dream come true: to become a veterinarian and even if it is not always easy, I know that it is a chance for me.

Surgery and internal medicine are fields that interest me.

Later on, I would like to open my own clinic on the island. Beyond animals, I love music, sports and travelling.

In the future I would like to share articles related to my island. The species that live there. I have a particular passion for turtles and whales, why not talk about these species? You will love them!

Hey, I'm Bianca, currently I'm a technician in the laboratory, but soon I'll be a veterinarian! What does it mean to be a veterinarian? Well, being a vet doesn't just mean playing with animals all day, it means new challenges every day, it means always stepping out of your comfort zone and going beyond your limits at every step, and this is the main reason why I chose to become a doctor.

I can say that I am a lucky person because I am part of the "family" of the University Veterinary Hospital, which is made up of very well trained, organized people who are always there for each other.

I believe that everything related to the laboratory has a close connection with each department of the hospital, and we "the bookworms" in the laboratory try to help as much as possible, and through future articles I will try, as much as possible, to present the importance of medical tests and you will love it!



Hi!
I'm Clara Chataigner, I come from France in the south-west.

I want to be a vet since forever, and I choose this faculty because they answer me first. Furthermore, I love internal medicine, every aspect of the rural work, parasitology, alternative medicine like osteopathy and phytotherapy, nutrition and emergency management.

I love reading, mostly history books and thrillers, video games, sports, and cooking. I'd like to share with the readers' information about the rural world and how it works,

Hello!
I am Corentin Pascal Bruno Pietu, I am nearly 26 years old (birthday on valentine day).



I am from Annecy, France, near Switzerland. I chose the vet med faculty because I always loved animals (I save them since I am 3 apples tall) and science in general. In addition, we can learn in english and it is really interesting. I am interested in surgeries (all types), in parasitology and exotic animals (except maybe tarantulas haha).

My hobbies are : subaquatic photography, movies (all types), music (mainly metal but I listen to everything, even classic music), games of all types, and fictional worlds (all that surround it).

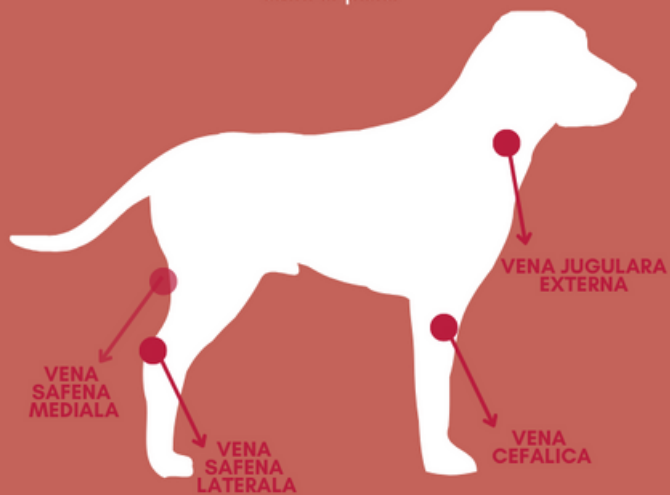
I want you to follow me to discover new interesting topics..."

Welcome On Board



PUNCTIA VENOASA

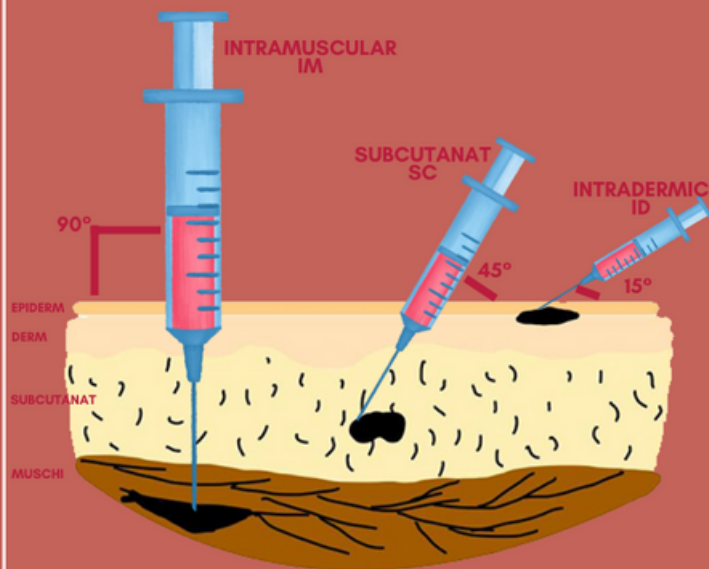
Venele accesibile pentru colectarea sangelui venos la caini si pisici



THE  CAMPUS
we could be heroes!

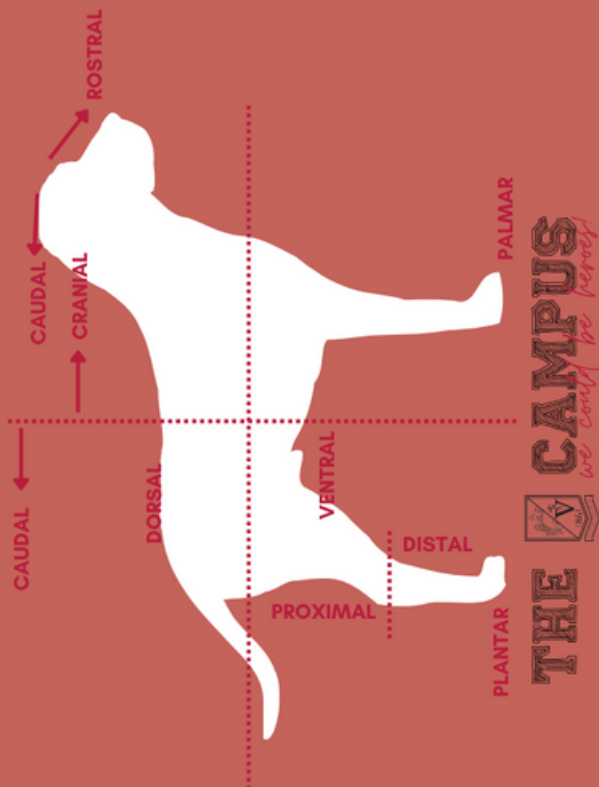


TEHNICI DE INJECTARE



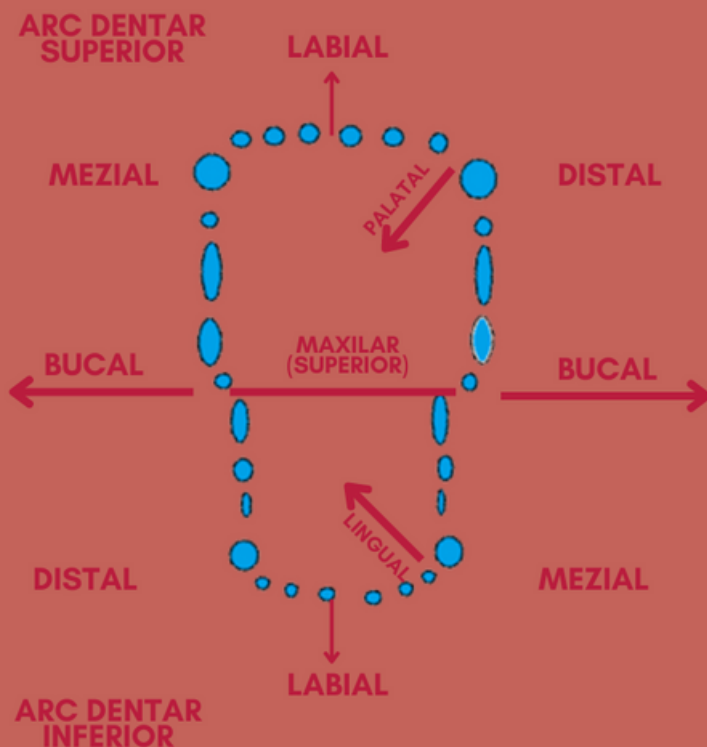
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we could be heroes!

IMAGISTICA DE DIAGNOSTIC



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we could be heroes!

TERMENI DIRECTIONALI FOLOSITI IN STOMATOLOGIE



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*Let's
save
lives!*

STAY TUNED, STAY SHARP