Veterinary Medicine

الطب الباطني المرحلة الربعة

***المصدر : Radostits, O. M. , et al. (2006) "VETERINARY MEDICINE a textbook of the diseases of cattle ,horses, sheep, pigs and goats" . 10th ed. Saunders, Elsevier***

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**Clinical Examination Of The Individual Animal , Examination Of The Herd & Making A Diagnosis .**

**Introduction**

**Disease**: can be defined as 'inability to perform physiological functions at normal levels

**Clinical Signs** :abnormality appear on ill animal such as fever, dyspnea, convulsions or lameness

# Clinical examination of the individual animal

**II-The environment**

**I-The history  III-The animal**

## I - HISTORY-TAKING is the most important

***HISTORY-TAKING METHOD***

1-The veterinarian should introduce himself or herself to the owner" How can I help you today?".

2- Handled with diplomacy. The use of nontechnical terms is essential.

3- Answers should be tested for accuracy.

4- Avoid the use of leading questions.

5- The clinician must know the right questions to ask, this knowledge comes with experience.

***A- PATIENT DATA*** kept records of animal's previous history

\* Owner's name and Postal address and telephone number.

\* Species, type, breed, Sex, age, name or number, body weight ,color markings, of the patient.

now Computers used record the animals examined , treated ,and laboratory services

***B- DISEASE HISTORY***

one animal or a group (in large animal work, all disease should be considered as herd problems)

1- **Present disease** clinical abnormalities

animals affected ,food or drink ,milk production, growth, respiration, defecation, urination, sweating, activity ,gait, posture, voice and odor. necropsy examinations on fatal cases. The behavior of animals before death and the period of time elapsing between the first observable signs and death or recovery. Prior surgical or medical procedures such as castration, docking, shearing, or vaccination

**2-** **Morbidity, case fatality and population mortality rates**

**Morbidity Rate**: percentage of animals affected compared with the total number of animals exposed

**Case Fatality Rate**: is the percentage of affected animals that die

**Mortality Rate**: is the percentage of all exposed animals that die

**3- Prior treatment**

**4- Prophylactic and control measures**

control procedures have already been attempted: artificial insemination to control venereal disease, vaccination, changes in nutrition, management or hygiene as disinfecting the cows' teats

**5- Previous exposure** new animal introduced, how long ago?

**6- Transit**

**7- Culling rateمعدل استبعاد الحيوانات**  due to Failure to grow well, poor productivity and short productive life, and chronic diseases.

**8- Previous disease (previous illness)**

***C - MANAGEMENT HISTORY***

**1-Nutrition** : quantity and quality of the diet ,send-feed and water samples for analyses.

**Livestock at pasture**  **(grazing animals):** ask about bad weather , transportation, rain , fertilizer program, mineral supplements

**Hand-fed/stall -fed animals :** ask human error, Exotic diseases may be imported in feed materials, Variations in ingredients , Feeding practices, , Rapid changes, and The availability of drinking water.

**2- Reproductive management and performance**

**Breeding history** -inherited disease

length of parturition ,Percentage of abortions, Length of breeding season, Percentage of females pregnant , Bull/cow ratio, Fertility status of the females, and males at breeding time

**Reproductive history**:

**3- Climate** - warm, wet Cool, hot, humid

**4- General management**

Hygiene, Adequate of housing space, ventilation, draining, troughs, exercise, acts of milking

## II- EXAMINATION OF THE ENVIRONMENT

***OUTDOOR ENVIRONMENT (pasture)***

**1-Topography and soil type :** insect -borne diseases, nutritional deficiencies, wetting of the feet and udders, winds, rain, snow or the heat of the sun, Dusty

**2-population density -Stocking :** Overcrowding , feces and urine, Fighting

**3-Feed and water supplies :** plant types, poisonous plants, garbage, painted walls, moldy feed, contamination

***INDOOR ENVIRONMENT***

Hygiene, cleaning and disinfection, Ventilation, chilling and dampness during the winter months , Flooring, Lighting.

## III-EXAMINATION OF THE PATIENT

**A- GENERAL INSPECTION (*DISTANT EXAMINATION*)**👁

**a- Behavior and general appearance**

**Bright**: normal responds to stimuli such as sound and movement**.**

Separation, ⇩**dull** or **apathetic (depression) ,⇩⇩**The terminal stage is **coma**(the animal is unconscious).

⇧ **Excitation** : vary in severity. (A state of Restlessness , lies down and gets up , looking at its flanks, kicking at its belly and rolling and bellowing) .⇧⇧**anxiety or (apprehension**).

⇧⇧⇧ **mania** and **frenzy** extreme degrees of excited: Violent licking , wild and uncontrolled. danger to anyone.

**b- Activity** (Voice , Eating, prehension ,mastication or swallowing, regurgitation, rumination ,eructation, Defecation, Urination frequency, and posture).

**c- Posture** : Abnormal posture is not necessarily indicate disease, shifts its weight from limb to limb, Arching of the back, **'saw horse':** severe abdominal pain, **'dog-sitting**': pain and pressure on the diaphragm, **Abduction of the elbows** is usually with chest pain , rigidity of the tail, ears and limbs, recumbent, and Abnormal Gait.

**d-Body condition**: obese, thin, or emaciated. Body conformation, symmetry, size of the different body regions, Skin, hair or wool, abnormal sweating, lesions, Alopecia, folding of the skin.

**B - INSPECTION OF BODY REGIONS (*DISTANT EXAMINATION*)** 👁

**Head:** The facial expression, Swelling of the maxillae, The eyes, eyelids, Visible discharge, nasal Discharge, salivation or frothing.

**Neck:** jugular pulse, jugular vein engorgement .

**Thorax:** The respiration **rate, rhythm** (inspiration, expiration and pause), **depth** (increase as hyperpnea , labored breathing as dyspnea.) and **type** (thorax and abdomen), **noises**(Coughing, Sneezing, Wheezing, Snoring, Roaring, Grunting)

**Abdomen**: size, pregnancy. **External genitalia**: enlargements, Discharges of pus and blood from the vagina. **Mammary glands**, milk or secretions. **Limbs**: Symmetry, Enlargement or distortion of bones, joints ,tendons, sheaths

**C- CLOSE PHYSICAL EXAMINATION 🖐🖏👂**

**Palpation: 🖐 :** size, consistency (Doughy, Firm, Hard, Fluctuating, Tense), temperature and sensitivity of a lesion

**Percussion:** **🖏** by finger or plexor and pleximeter. Resonant, Tympanitic, Dull sound.

**Ballottement:** palpated vigorously with a firm push to move the organ or mass away and then allow it to rebound. Ballottement and auscultation.

**Auscultation:**. **👂** by stethoscope, phonendoscope, Percussion and auscultation for the detection and localization of agas-filled viscus, with 'flick ' hear 'ping'.

**Other techniques:** (Special physical techniques including :biopsy and paracentesis, radiographic , Ultrasound. nasogastric intubation, Rectal examination.)

**1-VITAL SIGNS EXAMINATION:**

**Temperature** ,**Pulse** , **State of hydration**

**2- EXAMINATION OF BODY REGIONS**

**a-Thorax:**

***Cardiac area***: auscultation hart rate (The first (**systolic**), The second (**diastolic**)), rhythm (**LUBB - DUPP - pause**), intensity and quality of sounds, murmurs, electrocardiography.

***Lung area:*** auscultation **VEE-EFF**

**b-Abdomen:**

**Rumen** 1-2 primary contractions per minute, auscultation sound: grunt(detectable by over the trachea), borborygmi , tinkling sound ,Nasogastric intubation.

**c-Head and neck**

***Eyes:*** The **lids** ,. **Conjunctiva, Cornea** by ophthalmoscope . **Vision tests**: reflex closure of the eyelids. **night-blindness (nyctalopia)**.

***Nostrils* , *Mouth:***. **Teeth,** **Tongue,** **Pharynx:** by speculum (Horse by Endoscopy.) to viewing the pharynx, the glottis and the proximal part of the larynx and arytenoid cartilages.

***Submaxillary region,* *Neck:*** A jugular pulse, Tracheal auscultation.

**d- Rectal examination, Feces and defecation:**

volume, consistency, form, color, covering, odor and composition, blood, bile pigments. bad teeth, Frequency.

**e-Urinary system:**

act of urination ,difficult and painful, palpation of the kidneys, bladder and urethra.

**f-Reproductive tract and mammary:**

metritis, retained placenta and ruptured uterus, Mammary gland, udder and teats, milk.

**g-Musculoskeletal system and feet:**

lameness, weakness, or recumbency. Inspection of the gait, muscles, joints, ligaments ,tendons, and bones are inspected and palpated.

**h-Nervous system. Skin including ears, hooves and horns**

**Making a diagnosis:**

**DIAGNOSTIC METHODS**

**METHOD 1 : THE SYNDROME RECOGNITION**

In the first few moments depending on experience, based on the comparison of the subject case and previous cases in the clinician's memory.

**METHOD 2: HYPOTHESES AND DETECTION**

draw up a short list of diagnostic possibilities, three or four logic hypotheses, then begins to ask questions and clinical examinations (the confirm/exclude technique) and become the list of diagnostic possibilities , may need laboratory ,then provide treatment for two or three possible illnesses.

**METHOD 3: THE ALGORITHM METHOD**

extension of method 2, listed series of diagnoses and examines each one in turn with supporting or disproving questions; if they pass the proving test they stay in, if they fail it they are deleted. These algorithms are eminently suited to computerization and can be made available by the supply of floppy disks or by access to a central database via a modem, the online database, or dial-up information system. who has not had the necessary experience

**METHOD 4: THE KEY ABNORMALITY METHOD (no suggestion for D.D)**

Need more time, knowledge of normal structure

**GENERAL PHYSICAL EXAMINATION**

Determine of the **ABNORMALITY** of function

**PHYSICAL EXAMINATION OF BODY REGIONS**

Determines **SYSTEM** OR **ORGAN**· or body as a whole

**SPECIAL EXAMINATION**

e.g. exploratory laparotomy, endoscopy, radiography

Determination of the **LOCATION of the lesion** within the system or organ

**SPECIAL EXAMINATION OF LESION**

e.g. biopsy, response to treatment,

determines

**TYPE OF LESION**

**SPECIAL EXAMINATION OF SPECIMENS**

e.g. blood, urine, feed or soil samples, by chemical,

microbiological, parasitological means

determines

**CAUSE OF LESION**

**Determination of the abnormality of function present**//Definition of the abnormality , terms such as paralysis

**Determination of the system or body as a whole or organ affected**//In some cases the body as a whole may be involved, physical examination is available it may be extremely difficult to choose between two or more systems—special diagnostic techniques and laboratory

**Determination of the location of the lesion within the system or organ affected**//

**Determination of the type of lesion** //lesions can be divided into anatomical or physical lesions and functional disturbances, inflammatory, degenerative or space-occupying, Inflammatory lesions are characterized by heat, pain, swelling and a local or general leukocytosis, and, in severe cases, a systemic toxemia, Degenerative lesions loss or abnormality of function but are not usually inflammation

**Determination of the specific cause of the lesion** //laboratory examinations, history taking and examination of the environment, epidemiology and the clinical characteristics, treat with a great many drugs serially or in combination. Accuracy in diagnosis means increased efficiency, and this is the final criterion of veterinary practice.

**METHOD 5: THE DATABASE METHOD**

Expanded version of the Hypotheses And Detection. This system is now used widely by veterinary teaching hospitals. complete clinical and clinicopathological examination of the patient in order to acquire a comprehensive patient database. uses the problem oriented veterinary medical record system, The system has four components based on the four phases:

1- Database

2- Problem list

3-Initial plans

4- Progress notes.

# Examination Of The Herd

In Outbreaks, subclinical disease to establish strategies for the treatment, correction and control of the disease, or may increase the resistance . **The methods for routine examination of the herd include:**

1- definition of the problem to be examined.

2 -Clinical examination of individual animals in the herd

3- Analysis of records of performance and disease

4- Examinations of the environment of the herd

5- Laboratory examination of animal, nutrition and environment

6- Necropsy examinations of dead or sacrificed animals

7- epidemiological examinations

**Methods for correction of the problem include:**

1- Treatment of individual sick animals

2- Selective or strategic prophylactic medication of the group (Immuno prophylaxis)

3- Alterations to the nutrition, environment or the management of the herd or group within it.

Herd examinations can be expensive, with some diseases are less well defined ,and interaction of several risk factors. So epidemiological investigations are effective.

**EXAMINATION STEPS**

Step 1 : Defining the abnormality :clinical or subclinical

Step 2: Defining the pattern of occurrence and risk factors: **temporal (when) and spatial (where)**

1- A listing of the cases that have occurred.

2- The date when disease was first observed in each case.

3-The age, breed and other individual information for each case, which may include vaccination history, previous medication

4- Management , nutritional data and other environmental information

population at risk can be determined ,analytical

**Temporal pattern:** (hours, days, weeks) management or environmental changes**. Draw Epidemic curve** : rapid increase in the number of cases over a short period of time.

**Spatial examination**: affected and non affected animals in relation to areas of the housing ,environment, or pastures, or animal movements. **Draw maps risk factors** such as buildings, water sources ,pastures, rubbish, dumps, roads, storage areas, etc.

Step 3: Defining the etiological group (new born , winter, building 4,….. )

Step 4: Defining the specific etiology

Many cause may be clear and the correction are:(alterations in nutrition, alterations in management, vaccination, etc.), In other cases further prospective examinations needed because of its complexity.

***TECHNIQUES IN EXAMINATION OF THE HERD OR FLOCK***

**CLINICAL EXAMINATION** :

Recording the findings is important, Selection of the animals should not be left to the farmer, select 10-12 animals as a minimum, should include eight sick animals, if possible four advanced and four early cases, and four normal animals as controls. necropsy examination In outbreaks and associated sampling, larger sheep flocks the costs associated with the sacrifice of a few animals.

**SAMPLING AND LABORATORY TESTING :** The samples submitted must be appropriate to the question, due to Laboratory analysis of samples is expensive the following questions should be asked:

is it a random ? comparison of animals 'at risk with those believed not at risk(collect samples from 'controls animals that have not experienced to the suspect exposure factor)? ,10%.

**INTERVENTION STRATEGIES:**

to correct the problem without further analysis. RESPONSE TRIALS(treatment trials).

**INTERPRETATION OF LABORATORY DATA**

LABORATORY DATA:

including results of clinical, biochemical, hematologic, serologic, radiographic, electrocardiographic, ultrasonographic and other examinations

To confirm disease , severity of a disease , determine a prognosis, response to therapy, requirements, determine the disease or immune status of an animal, herd or flock

When need LABORATORY DATA

1-if results of the test will alter the treatment of its disease.

2-the test has no diagnostic utility should not be performed

3-test must be accurate

4-The test should allow you to rule in or rule out one of the differential diagnoses

5-avilable references ranges

**Reference range (Interval)**

Collecting values from a large number of healthy or 'normal' animals.

Faults

\*5 % of normal animals will have values for the test that are outside the reference range**(false positive)**

\*Some diseased animals are within the reference range **(false negative)**

\*serum biochemical profiles often contain more than one variable disorder.

**Prognosis and therapeutic decision-making**

Outcome of prognosis : expected morbidity and case fatality rates for the disease, The stage of the disease, treatment or surgical operation is available or possible, The cost of the treatment, prolonged and the high cost therapy, the owner may select euthanasia of the animal.

**COMPUTER -ASSISTED DIAGNOSIS**

In the 1980s, clinical and laboratory data into a computer ,yield a list of differential diagnoses or diagnostic hypotheses , With a knowledge of the epidemiological and clinical characteristics may be effective . many Textbooks lists of differential diagnoses with similar clinical findings .

One computer assisted diagnostic system for veterinary medicine was developed at the College of Veterinary Medicine, Cornell University, Ithaca, NY. The CONSULTANT program designed by M. E. White and J. Lewkowicz2 is available on the Internet at: http://www.vet.comell.edu.

The data bank contains a description of several thousand diseases of dogs, cats, horses, cattle, sheep, pigs and goats. With disease description and information on diagnostic testing, clinical findings that might be present in the disease. computer-assisted diagnosis is not used in day-to-day management of routine cases but is used primarily when faced with an unusual problem.