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Received: 14 May, 2018

Accepted: 13 August, 2018

Published: 14 August, 2018

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Research Article

Veterinary Clinical Practice and Diagnosis

Introduction

Clinical examination is a fundamental part veterinary diagnosis. It provides the veterinarian with the information to determine the disease or diseases producing the clinical abnormalities. Additionally, the information derived from the clinical examination should assist the veterinarian in determining the severity of the pathophysiological processes. Without a proficient clinical examination and an accurate diagnosis, it is unlikely that the treatment, control, prognosis and welfare of animals will be optimized [1-5]. The organs or systems involved, the location and type of lesion present, the pathophysiological processes occurring and the severity of the disease can be deduced from the information gained during the clinical examination. The success of clinical examination relies heavily on the knowledge of the clinician and usually assumes a single condition is responsible for the abnormalities. Many clinicians begin their examination by performing a general examination which includes a broad search for abnormalities [6,7]. The system or region involved is identified and is then examined in greater detail using either a complete or a problem oriented examination. For this sound knowledge of Anatomy, Physiology, Pathology and Animal behavior, skills in the methods and techniques of clinical examination, knowledge of etiology, clinical sign and pathogenesis of the diseases are the basic requirements for clinician to make diagnosis [8].

The diseased animals which are presented to veterinary clinic can be analyzed by veterinarian or clinician, the clinician approach through asking the owners complaint, which request for professional assistance by giving animal history. The clinical examination ideally proceeds through a number of steps. The owner's complaint, the history of the patient, the history of the farm and the signalment of the patient are usually established at the same time by interview with the owner or keeper of the animal. This manuscript can assist veterinary clinicians and technicians by giving clear informations and procedures, and

also guides veterinary students and clinicians how to operate at veterinary clinic and laboratory.

Taking history of patient

History taking or anamnesis is the process of taking information on animal patient from owners about its illness, onset of illness and feeding practice through careful questioning of the owner. In Veterinary practice, the disease is presented indirectly in the form of a complaint by the owner or the attendant. Thus, it is very necessary to have all the information from the owner. Most of the time, the owner or attendant fails to provide pertinent and adequate history and inaccurate history may lead to misdiagnosis. The clinician must substantiate these with rational question utilizing professional knowledge [1,5].

Without knowing history of animals it is difficult to diagnose disease problem of patient animals. Therefore, the history should be taken from the owners of the patient and recording the owner's complaint. Disease information should include the group(s) affected, the numbers of animal affected (morbidity) and the identities of the animals affected; the number of animals that have died (mortality) should be established. In order to get the accurate and complete history of patient the following things should be focused; patient data, present history, past history and environmental history. Patient data is essential to identify the patient and it includes: Owner's name, Owner's address: postal address, telephone, kebele, peasant association, species, breed, sex, age, name, ID No., body weight, description including color, marking, polledness, and other identification marks of patient [8,9].

Present history of patient

Present history of patient includes of recording the sequential events from the start of the patient chronic. Questions about physiological functions such as appetite, urination, defecation, rumination, respiration, sweating, milk production, gait, posture and also of the first symptoms shown by the animal should be asked. All these information deal with the current problem of the animal and the events associated with it. The points which going to be asked during that is as following [1,5,8].

Locations of the problems: The main attention at the complaint that a farmer has to say and from there clinician can tentatively say can be listed as following:

- * Digestive system involvement will be shown as absence of rumination, appetite, bloat or diarrhea
- * Respiratory system involvement will be indicated presence of nasal discharge, coughing, dyspnea.
- * Urinary system involvement will be manifested as frequent urination, passing red coloured or cloudy urine.
- * Musculo-skeletal and nervous system involvement will be manifested as lameness, inco-ordination, and paralysis.

Nature of illness: The clinician should be able to assess and find out the time of onset of disease, any change management practices and signs noticed by the farmers.

- * To assess to know the duration of disease whether it is peracute, acute, subacute or chronic
- * To know number of animal diseased and morbidity rate and mortality rate of animals
- * Determine whether any drug has been given for animals, before patient come to clinic for assurance
- * And the following question should be pointed:
- * When did the farmer notice the disorder? (time)
- * Did it occur suddenly/slowly? (acute /sub-acute / chronic nature)
- * What were the signs noticed? (anorexia/drop in milk yield/ others)
- * Are the animal fed / grazed in pasture / forest grazed? (getting information on management practices e.g. ketosis seen in stall fed animals, while babesiosis seen in forest grazed animals)
- * Is there any other animal affected with similar condition in the same herd / in other farmer's herd in the village (to find out if the disease is rapidly spreading)?
- * Ask if there has been any introduction of new animal to the herd / village (sick animal may have been bought from affected area and disease has started)
- * Is the affected animal vaccinated against food-and-mouth disease (FMD), anthrax, hemorrhagic septicemia (HS), Black quarter (BQ) (to find out if the animal is protected against common diseases).

Past history

Inquiring into the past history may help in arriving at a diagnosis. History of drenching a day or two earlier may cause aspiration pneumonia. History of past disease may be co-

related to the present illness. Past history will also give idea if such condition prevailed previously in the area.

- * Ask if such condition was reported previously too (reveal endemic nature of disease, or occurrence of a new disease)
- * Does this occur at certain period of time? (find out the seasonal occurrence of the disease)
- * Was the disease reported from other places in the locality? (area of spread / occurrence can be found out)
- * Has any animal recovered from such a sickness? (to aid in prognosis)
- * Is the disease restricted to certain age group / sex? (BQ is seen in animals between 1-3 years of age in both sexes 2, 4).

Environmental history

The environment in w*iosecurity and regional mineral deficiencies. Risk factors indoors may include ventilation, humidity, dust, stocking density, temperature, lighting, bedding, water availability, feeding facilities and fitments. Environment or surrounding of the animals may help in the diagnosis of disease. Animal grazing on pasture irrigated with sewerage water may suffer from nitrate poisoning. Parasitic diseases are more in animals, which are kept in marshy lands. Recent spraying of weedicide or insecticides may poison the animals. Environmental history can be divided into outdoor environment and indoor environment [9].

Outdoor environment history: It regard to the topography of land where animals are reared, vegetation, type of agriculture practiced in the locality, use of chemicals in agriculture (pesticide, weedicide) and system garbage disposal in the area. Animals that are grazed are likely to be infested by parasites and prone to vector borne diseases like babesiosis, trypanosomiasis, or animals that are grazed in the marshy area including paddy filed are likely to be infested by liver fluke etc.

Indoor environment history: It regards with the types of animal house. The following should be look assessed how is the house of animals is designed:

- * If there is proper ventilation,
- * In the rural area, traditionally animals are housed in the ground floor of the house where there hardly any ventilation and this will predispose the animals to respiratory diseases,
- * If the animals are stall fed check
- * If the animals are provided with enough drinking water,
- * If the floor is dry and clean, damp and dirty floor may lead to mastitis in milking animals,
- * If the bedding materials are used

- * If the materials are changed daily or topped daily to keep the animals dry and clean.
- * If the animals are housed separately see
- * If the height of the roof is at a required level,
- * If it is too low, in hot places animals may be subjected to heat stress in summer months,
- * If it is too high animals will be exposed to rain.

Restraint and approach to animals

Restraint is the term used to imply control of an animal and may be necessary for medical reasons and nonmedical procedures. Animals are often resisting to the clinical examination procedures. The animal must be restrained so that it can be examined carefully, safely and with confidence. The methods of restraint should be done, in order to able to carry out the examination safely and without danger to the clinician and assistants, the methods available may be classified as the following [6,9].

- **Physical restraint.**
- **Chemical restraint**
- **Verbal/Moral restraining**

Physical restraint: It is important to perform all the physical manipulations in a quiet and gentle manner in order to carry out the examination safely without causing danger to the clinician or his assistants and to avoid disturbing the patient. This manual is to give the advanced knowledge on how to restrain the domestic animals.

Restraints of the equine: Equipment used for restraint and handling should be effective without causing stress to the horse and should be designed for maximum safety of the handler and horse. A horse should be approached from the front and slightly to the left (near) side because they are accustomed to being handled on that side. They become nervous when handled from the right side. Any restraint method used to assist normal management or treatment of the horse should be the most mild and effective method available, and should be applied for the minimum amount of time necessary to carry out the task.

A halter and lead rope is the most common form of restraint. Generally, the safest knots are those that can be quickly untied even if the horse has pulled on it. When used by knowledgeable handlers, other acceptable forms of restraint include hobbles, twitches, lead chains, stocks and chutes. Tethering is a form of restraint that brings a high risk of injury to horses unless used correctly. Tethering does not refer to tie stalls or briefly tying a horse to a fixed object. The following lists are the methods how to restraint horse [8,10] (Figure 1.1):

- * *Applying a halter.*
- * *Rope twitch*
- * *The hand twitch*

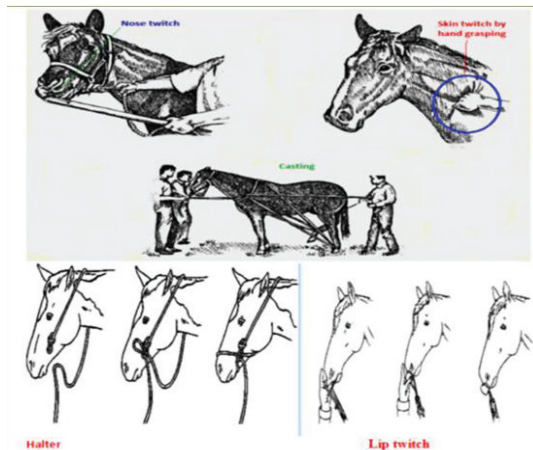


Figure 1.1: The methods for restraint of equine animals [12]. Halter: Used to restrain head of horse and donkey, it can be led or held for procedures such as injections. A halter can be made from a piece of sisal or cotton rope. A viod using nylon rope against the skin. The Lip twitch the twitch is useful to restrain a horse before a painful procedure, to examine it or gave it treatment. It is known that a twitch placed correctly on the nose cause the release of natural pain-killing substances in the horse's body. Two rope casting used to prevent kicking and it can be done safely without danger of being kicked.

- * *Neck skin grip:* To restrain the horse, grasp the loose skin of the neck.
- * Twitch is applied to the upper or lower lip or to the ear
- * Nose twitch
- * Lifting the fore-leg and hind-leg by unaided hands or with Leg twitch
- * A loop of strong cord or soft rope is applied to the appropriate part
- * Two ropes one-person horse casting
- * Two ropes four people's horse casting

Restraint of the cattle: Restraint of cattle depends on breed, age, sex and knowledge of animal behavior. For example, bulls are unpredictable and should be handled with care. Aggressive bulls for instance, will paw the ground with front feet, lower and shake the head. They may also make mowing sounds. Nervous cows will keep head and tail up and may have an anxious expression in their eyes [8,13]. The followings are the methods for restraint of cattle (Figure 1.2):

- * The nasal septum is gripped between the thumb and one finger or with 'bull-holder'
- * Leg twitches are also employed
- * One rope locking two horns on a post or tree
- * One rope two-person cattle casting
- * Two ropes three-person cattle casting
- * Chest twitch: Chest twitch is used for exceptionally restless cattle.

- * Procedure chest twitch: A rope is tied around the chest and held under tension by a strong pole twisted in a rope loop. However, chest twitch should be used only when there is no other method of restraint.
- * *Nose lead*: It restrains cattle by applying pressure to the nasal septum.
- * *Procedure of nose lead*: It is shaped like a pair of tongs with a large ball at the end of each arm, which fits against the nasal septum. Usually, it has a chain or rope at the end. Hold the lead out for the animal to sniff. As the animal raises its head to sniff, slip the nose lid into the nostrils and close quickly. Then tie the rope to the post for continuous restraint but remember it loses effect when the nasal septum becomes numb. Manually holding the nasal septum with index finger and thumb *nose grip* and slip in the nose lead. It is advisable to avoid using nose lead too frequently on the animal as it may become "head shy".
- * *Restraint using a crush*: A crush can be used to restrain many animals at a go. It can be constructed of posts or planks or steel tubing (Figure 1.2). However, the internal surface should be free of sharp edges or projections that can injure the animal. So, it should comprise of an assembly area with a funnel ending in a closed pen with the final run being just wide enough for one animal and sufficiently high enough to prevent it from jumping. Backward movement is prevented by a transverse bar inserted just behind the animal [13].

Restraint of sheep and goat: Sheep have an intense instinct to remain with the flock and as such, it is best to handle them as a flock initially before isolating the animal you want to perform certain procedures on. When disturbed, they will stamp their front feet and will use the head to attack. Hence, always work gently, calmly and with assurance around them. Sheep have very fragile bones that can easily be broken and heavily woolled sheep may become hyperthermised if chased around [13]. The following are the methods how to restraint and holding sheep and goat (Figure 1.3) [13].

Capturing a sheep: The sheep can be captured by driving the flock into a small pen or enclosure and then approach an individual animal slowly and swing your arm around the neck and front quarters and quickly wrap your other hand around the hindquarters or grasp the tail if present.

Shepherds crook: Hook a rear leg at the hock, quickly immobilizes sheep as above.

Halters: Can be used but remember sheep have a short nose and should be careful not to block the nostrils.

Restraint of goat: Goats do not tolerate rough treatment and will struggle violently if not properly handled. Therefore, restraint time should be as short as it is necessarily possible [18].

Walls and fences: Push the goat against the fence or wall with your legs and hip and leave your hands free for other



Figure 1.2: The methods of restraint of the cattle.



Figure 1.3: Restraint methods in sheep and Goat.

procedures. You can also push the hindquarters against a wall and then put your hand around the neck to keep it still for temperature taking or injection.

Restraint on lateral recumbence: The goat is placed parallel to your legs; the jaws are grasped with one hand while the inside rear leg is grasped with the other hand. Bring the leg forwards. The goat will be thrown off balance and fall on the ground.

Restraint of the Head: This is best when the goat is pushed in a corner and the body held against a wall. *Procedure:* Grasp the beard (if bearded) with one hand and encircle the neck with the other arm to stabilize the head.

Use of horns: This should only be for a short time as goats react violently when horns are held. Moreover, horns should not be used in very old goats as they break easily.

Cheek hold: Place one hand on either side of the cheeks

and wrap fingers around the mandibles to hold firmly. You can examine the eyes or take blood from the jugular.

Collars: Leather collar or neck chain can be used in dairy goats to lead or restrain them. They may be temporary or permanent (collars). Neck chains should be made of small, flat links, which don't catch easily as the goat rubs against a fence.

Restraint of Pet animals

Cats have always relied on speed, agility, caution, needle sharp teeth and dagger-like claws for survival. Therefore, they should be approached in a feeble manner. Restraint techniques of cat are as following [10,13]:

Leg restraint: Always place an index finger or middle finger between two legs. This provides a better grip to prevent escape.

Head – Mandible hold: The palm of the hand is placed under the cat's chin and the fingers are used to grasp mandible.

Scruff of the neck: Hold as much of the loose skin on the back of the cat's neck as possible. This prevents the cat from turning its head to bite.

Restraint with towel: Cover the head with a towel or cover the entire cat; then lift it up, isolate the needed part and uncover it. This is good for injection or examination.

Restraint bag: Feline restraint bag (cat bag) is normally used to restrict the movement of the cat and also to protect the handler from scratches.

Restraint with the adhesive tape: Apply adhesive tape around the legs starting with the hind legs then followed by the forelegs.

Gauze muzzle: They can be commercially available (leather muzzles) or home made using gauze.

Procedure of gauze muzzle: Make an over hand knot in the middle of the gauze to form a loop. Next, lower the loop over the cat's muzzle and tighten it on both ends of the gauze. Bring the gauze under the jaws, which are tied together under the mandible using an overhand knot with both ends brought behind the ears.

In restraint of dog the following devices prevent injury when used correctly and judiciously [10]: (Figure 1.4)

Muzzles: Commercial muzzles are made of leather, wire or fabric. There are also gauze or nylon rope muzzles.

Gauze or Rope Muzzles: For dogs with long noses, you do not need to pass the passive end between the eyes to secure the loop over the nose before tying the bow gauze after passing behind the ears.

Blanket and towels: These are used to remove unfriendly dogs from cages.

Restraint of poultry and birds

Free movement of the sternum is essential for respiration

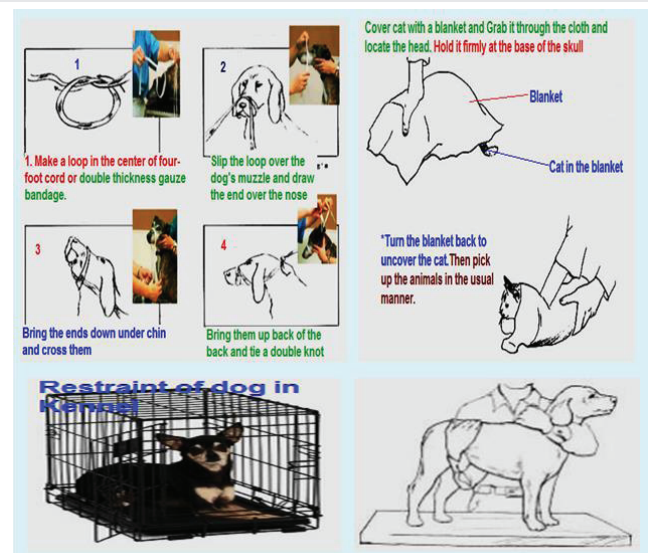


Figure 1.4: Restraint methods of Dog and cat.

in birds. They possess no diaphragm and their lungs do not expand and contract. They breathe through expansion and contraction of their air sacs facilitated by their intercostal muscles. Thus, any undue pressure on their sternum would restrict breathing. More than likely they had closed their hand around the chest inhibiting respiration. When handling a bird, fingers should never be closed around the chest, rather cupped in the hand to allow for sternal movement. During handling carefully monitor the bird for any signs of discomfort, stress or breathing difficulty. Due to struggling, the bird could contort and twist in such a way to constrict the air passages. Also during restraint, efforts to escape can lead to hyperthermia, especially if in a towel, so be alert if the bird begins to pant heavily [10].

There are various methods how to restraint poultry, the following lists are the common restraint methods during holding of poultry:

- * Use slow, steady movements with minimal noise
- * Catch individual birds by grasping both legs, just above the feet
- * Support the bird's body
- * Avoid too much pressure on thorax and compromising the ability to breathe
- * Carry the bird upright when possible
- * Place your arm over the bird's wings to minimize flapping
- * Extend the head between the index and middle finger,
- * Grasp the head with the thumb and index finger on either side of the head at the temporo-mandibular joint,
- * Using three fingers, place the thumb and middle finger just below the eyes and the index finger over the head, called the 'helmet grip,'

- * Crook the index finger behind the back of the head and gently place the thumb behind the lower mandible,
- * Gently circling the neck with the thumb and index finger as a tubular restraint collar would (Figure 1.5).

Chemical restraint

Chemical restraint may be defined as the use of drugs to bring about sedation or neuroleptosis, neuroleptanalgesia and anesthesia or short duration general anesthesia. This is a reversible process whose purpose is to produce convenient, safe, effective and inexpensive means of restraint so that clinical procedures may be carried out with minimum of stress, pain, discomfort, and toxic effects to the patient, the anesthetist or the clinician [13]. Drugs that is useful for this purpose includes: acepromazine, acetylpromazine, chlorpromazine, promazine and trimeprazine; members of this group can be used in most species of animals, butorphanol, lorazepam [8,13].

Verbal/moral restraint

The verbal methods of restraint is practiced by owner, the owner can restrain the animals by calling name of animals, feed provision and massaging of animals. When the horse is alert, the ears are flicked forwards and the horse is usually curious of one's approach. A nervous horse will continuously flick the ears back and forth especially when there is activity behind it while an angry or fearful horse will pull its ears backwards. This should however not be confused with laid-back ears where

a horse is concentrating on a difficult task such as calf roping or barrel racing. The tail always indicates the horse's attitude. A wringing or circling restraint of domestic, laboratory and wild animal's tail is an indication of nervousness. A tail held straight down indicates pain or sleeping, while a tail clamped tight indicates fear. Nevertheless, each horse is an individual and should be treated accordingly. Horses can be calmed by an even tone of voice and are most cooperative when handled quietly and decisively. They can also, be easily "bribed" with a handful of delicious foods like oats, carrots etc. Scratching behind ears, eye ridges and the neck will convince the horse you are friendly [5,10].

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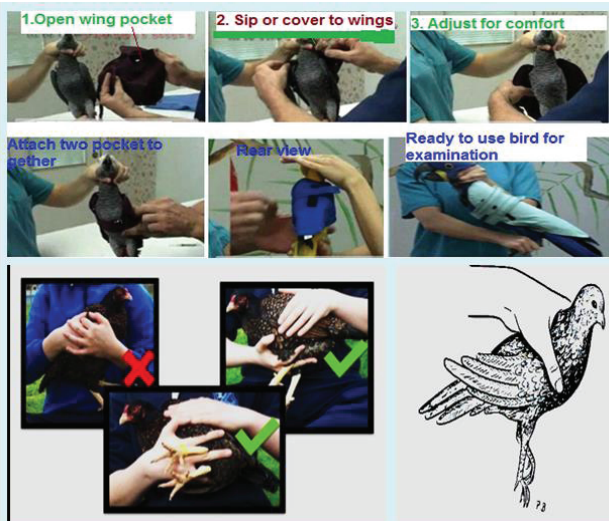


Figure 1.5: Restraint methods how to holding domestic and wild birds.