

Principles of Clinical Examination

Introduction

The purpose of the clinical examination is to identify the clinical abnormalities that are present and the risk factors that determine the occurrence of the disease in the individual or population. From this information the most likely cause can be determined. In addition, the organs or systems involved, the location, 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. Without a proficient clinical examination and an accurate diagnosis it is unlikely that the control, prognosis and welfare of animals will be optimised.

There are several different approaches to the clinical examination. The *complete clinical examination* consists of checking for the presence or absence of all the clinical abnormalities and predisposing disease risk factors. From this information a ranked list of differential diagnoses is deduced. This is a fail-safe method and ensures no abnormality or risk factor is missed.

The *problem orientated method* (hypothetico-deductive method) combines clinical examination and differential diagnosis. The sequence of the clinical investigation is dictated by the differential diagnoses generated from the previous findings. This results in a limited but very focused examination. The success of the method 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. The *system or region* involved is identified and is then examined in greater detail using either a complete or a problem orientated examination.

The clinical examination

The clinical examination ideally proceeds through a number of steps (Table 1.1). 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. Observations of the patient and environment are performed next. Finally a clinical examination of the patient occurs, followed by additional investigations if required.

Owner's complaint

This information usually identifies which individuals and groups of animals are affected. It may also indicate the urgency of the problem. The owner may include the history of the patient and the signalment in the complaint. Stockpersons usually know their animals in detail, and reported subtle changes in behaviour should not be dismissed. However, opinions expressed regarding the aetiology should be viewed with caution as these can be misleading. The extent of the problem or the exact nature of the problem may not be appreciated by the owner, and the clinician should attempt to maintain an objective view.

Signalment of the patient

Signalment includes the identification number, breed, age, sex, colour and production class of animal. Some diseases are specific to some of these groupings and this knowledge can be useful in reducing the diseases that need to be considered.

Table 1.1 The clinical examination

Owner's complaint
Signalment of the patient
History of the patient(s)
History of the farm
Observation of the environment
Observation of the animal at a distance
Detailed observations of the animal
Examination of the animal
Further investigations

History of the patient(s)

Disease information

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. Information regarding the course of the disease should be obtained including the signs observed.

Risk factors

Possible predisposing risk factors should be identified. These may include the origin of the stock, current disease control programmes (vaccination, anthelmintic programmes, biosecurity) and nutrition.

Response to treatment

Clinical improvement following treatment may support a tentative diagnosis.

History of the farm

The disease history of the farm will indicate diseases that should be considered carefully and may indicate some of the local disease risk factors operating. The sources of information may include farm records, practice records, colleagues and the owner. Husbandry standards, production records, biosecurity protocols, vaccination and anthelmintic programmes may all be relevant.

Observation of the environment

The environment in which the animals were kept at the time of the onset or just before the onset of the illness should be carefully examined. The animals may be housed or outside. Risk factors outdoors may include the presence of toxic material, grazing management, biosecurity and regional mineral deficiencies. Risk factors indoors may include ventilation, humidity, dust, stocking density, temperature, lighting, bedding, water availability, feeding facilities and fitments.

Observation of the animal at a distance

Ideally this procedure should be performed with the patient in its normal environment. This enables its behaviour and activities to be monitored without restraint or excitement. These can be compared with those of other member of the group and relative to accepted normal patterns. However, sick animals have often been separated from their group and assembled in collecting yards or holding pens awaiting examination. Observations are most frequently made in this situation; they may include feeding, eating, urinating, defaecation, interactions between group members and responses to external stimuli. The patient can be made to rise and walk. The posture, contours and gait can be assessed, and gross clinical abnormalities detected.

Useful information is often derived from these observations and this stage in the clinical examination should not be hurried.

Detailed observations of the animal

Detailed observations can be made in docile animals without restraint; however, restraint may be necessary to facilitate this procedure. Closer observation of the patient may detect smaller and more subtle abnormalities.

Examination of the animal

Restraint is usually necessary for the examination and to ensure the safety of the animal and clinician.

Table 1.2 Examination by topographical region

Region	Common sequences used		
	Head to tail	Tail to head	Tail to tail
Head and neck	1	5	3
Left thorax and abdomen	2	4	2
Right thorax and abdomen	3	3	4
Tail end	4	1	1
Vaginal examination	5	6	5
(Rectal examination)	6	7	6
(Udder/Male: external genitalia)	7	2	7

The clinical examination usually proceeds topographically around the animal, with clinicians starting at different points dependent upon personal preference. Each topographical area may encompass several components of the different body systems and these are examined concurrently (Table 1.2). Frequently the topographical approach is used to identify major clinical abnormalities which are then examined in a more detailed manner using a systems approach.

Further investigations

Further investigations may be required before a diagnosis can be made. These may include laboratory tests, post-mortem examination, and a wide range of advanced techniques. Careful consideration should be given to the additional cost and what additional diagnostic or prognostic information will be gained from the additional procedures.

Techniques used during a physical examination

Palpation (touching)

Changes in shape, size, consistency, position, temperature and sensitivity to touch (pain response) can be assessed by palpation.

Auscultation (listening)

Changes in the frequency, rhythm and intensity of

normal sounds can be detected. Abnormal sounds can be identified. Stethoscopes are often used to increase the acuity.

Percussion (tapping)

The resonance of an object can be determined by the vibrations produced within it by the application of a sharp force. The sound produced provides information regarding the shape, size and density of the object.

Manipulation (moving)

Manipulation of a structure indicates the resistance and the range of movements possible. Abnormal sounds may be produced, and the pain produced in response to the movement can be assessed.

Ballottement (rebound)

This is performed by pushing the body wall sharply and forcefully so that internal structures are first propelled against the body wall then on recoil rebound against the operator's fingers. This enables the presence or character of an internal structure to be assessed.

Succussion (shaking)

Succussion is performed to determine the fluid content of a viscus. The shaking induces the fluid inside the viscus to produce an audible sloshing sound which can be detected by auscultation.

Visual inspection

This is used to identify abnormalities of conformation, gait, contour and posture. Visual appraisal may help determine the size and character of a lesion.

Olfactory inspection

This is used to identify and characterise abnormal smells which may be associated with disease.

CHECKLIST OF USEFUL EQUIPMENT FOR THE CLINICAL EXAMINATION

Scissors	Thermometer (digital or mercury)
Forceps	Long stethoscope with a phonoendoscope
Battery operated hair clippers	Watch with a second hand
Sample bottles	Torch
Heparin	Paddle and Californian milk test reagent
EDTA	Plastic rectal gloves and lubricant
Plain	Hoof knife, hoof testers and clippers
Sterile urine collection bottle	Assorted needles and syringes
Faecal sample pot	Local anaesthetic with and without adrenalin
Rotheras tablets for ketone detection	Spinal needles
Nasogastric tube	Oral gag
Stomach tube	Vaginal speculum
Wide range pH papers	Ophthalmoscope
Surgical scrub	Auriscope