



Claire E Whitehead, BVM&S  
MS DACVIM FHEA MRCVS

Camelid Veterinary Services  
Ltd  
United Kingdom

claire@ukalpacavet.com

## THE CLINICAL APPROACH TO THE SICK ALPACA

Camelids are prey species and good at masking clinical signs of illness. If the clinical examination approach outlined below still leaves the diagnosis in doubt, always consider further diagnostics.

Take a detailed history and consider the experience of the owner: new owners may be less observant whereas an experienced owner may notice subtle signs of illness that may seem trivial but allow you as the veterinarian to step in at a much earlier stage, giving more time for diagnostics to be performed.

Always perform a detailed physical examination. Heavily-fleeced animals may disguise swellings or distension so be sure to palpate thoroughly. Downer camelids can be challenging to examine, and it's important to attempt to get them standing as this allows differentiation of weakness from recumbency of neurological origin. Any recumbent camelid requires a basic neurological examination: check cranial nerves, proprioception, pain and withdrawal reflexes as well as muscular and anal tone. Evaluate all limbs for fractures or luxations. Weakness in camelids may result in severe neck weakness and torticollis since the nuchal ligament overrides weak muscles and pulls the neck back. This does not therefore indicate severity of the underlying disease process and should *not* be used as a prognostic indicator.

As with other production animals, female camelids (especially alpacas) are pregnant, lactating (or both) most of the year. Their gestation length is an average of 343 days and they are usually bred back 3 weeks after parturition. Therefore with females, always consider reproductive state: late in pregnancy consider metabolic demands or obstetric complications such as uterine torsion or dystocia. In lactating females, consider metabolic demands and post-partum complications.

Assess body condition and hydration status. Skin teint is not useful in camelids so evaluate membrane tackiness and sunkeness of the globe as indicators. Palpate both mandibular arcades to rule out mandibular tooth root abscesses. Auscult both sides of the thorax (lungs and heart), and listen carefully for murmurs and adventitious lung sounds. Lung sounds are typically very quiet in camelids but louder in thin animals

and crias. Gastrointestinal sounds are appreciated over the left paralumbar fossa (3-5 C1 contractions per 2 minutes) and quieter due to the absence of pili. If no sounds are heard on the left side, auscult the right side for intestinal sounds. Perform a digital rectal exam to assess the presence/absence of faeces and their quality if present. Absence of faecal material in the rectum together with signs of colic could indicate the possibility of an obstructive lesion in the gastrointestinal tract.

### Further Diagnostics

Unfortunately, many sick alpacas and llamas present with very similar clinical signs, regardless of disease process – depression, anorexia, weakness and lethargy are typical. Additionally, physical exam findings may be similar or even normal.

### Ultrasound

An invaluable tool for evaluating the abdomen (and thorax) of camelids. For most purposes, variable frequency probes in the range of 5-9 MHz are ideal for use in camelids. A [microconvex probe](#) is perfect for transabdominal use, especially in neonatal patients, but many camelids will adopt sternal recumbency when the probe is placed on the inguinal area making it challenging to fit both the probe and the operator's hand in the small space that remains. In these cases, a linear rectal probe may be better tolerated. The [linear rectal probe](#) may also be used for evaluation of the reproductive tract and caudal urinary tract structures.

- Transabdominal ultrasound must include evaluation of the main organs (liver, kidneys, spleen) as well as the different areas of the gastrointestinal tract (forestomachs and intestines) and the bladder and uterus where relevant.
- It is usually not [necessary to clip](#) the fleece for a survey transabdominal examination. Since alpaca fleece is so fine, usually it is possible to acquire excellent images by parting the fleece and using alcohol as the contact medium.
- When performing rectal ultrasound, it is vital that adequate restraint is achieved either by physical or chemical means since rectal tears may easily occur when an alpaca or llama resents examination. Additionally, the rectum must be evacuated of faecal material and adequate lubrication used.
- Sedation is not required and the procedure can be done with the animal cushed or standing.

### 2. Labwork

Labwork yields valuable clinical data when clinical evaluation may be unrewarding.

- Make fresh blood smears at the time of collection and examine them yourself unless your haematology analyser is correctly calibrated for camelid cells. Also send fresh smears to the lab. With practice you will learn what is a high, normal or low white cell count and perform a differential count of 100 white cells in the monolayer, particularly noting the percentage of any band neutrophils which reflect bacterial infections if increased. Then examine the red cells: look for *M haemolamae*, especially in anaemic patients; also look for variation in red cell size and shape as evidence of regeneration.
- Perform a PCV and TP. These two items will give you a lot of information about cardiovascular status.
- Full biochemistry and haematology – in-house or sent away to a commercial lab.
  - o Portable analysers effectively bring the lab with you into the field and provide valuable real-time information to facilitate patient management

### 3. Faecal analysis

Recommended for any sick camelid as a part of the clinical database. Camelids are highly susceptible to gastrointestinal parasites. They are also arid-climate adapted and extremely good at resorbing water from their spiral colons: therefore, it is not uncommon for camelids to have heavy parasite burdens with normal pelleted faeces.

- Ensure that the correct test is done for camelid faecals. Passive float tests, although cheap and easy, are inadequate. Modified tests including centrifugation and concentrated sugar solution are more sensitive and will float the heavier or more dense eggs such as *Nematodirus* and *Trichuris* as well as *E mac*. It is not recommended to pool samples from camelids for testing.