Rabbits are commonly kept as pets in the United States. There are over 50 breeds of rabbits. Rabbits differ from dogs and cats and rodents in a number of aspects that have important, clinical implications. Rabbits are classified as lagomorphs due to an extra set of upper incisors called “peg” teeth. Both the incisors and molars grow continuously. The body temperature range in rabbits is relatively high at 101-104°F. They have a delicate skeleton which comprises only 8% of their body weight. Females have a dewlap below their chin. It is reported that rabbits cannot physiologically vomit. They are hindgut fermenting herbivores with a large cecum. Two types of fecal pellets are produced. The hard pellet is produced during the day and night. The softer pellet, called a cecotroph, is normally only produced at night and is sometimes referred to as “night feces.”

Rabbits are monogastric, hindgut fermenting herbivores. Adult, non-gestation, non-lactating rabbits require a diet of 20-25% fiber. Most pet rabbits are fed a diet too low in fiber. One recommended diet regimen for adults consists of high fiber pellets (at least 18%) limited to 1/8 to 1/4 cup pellets/5 lb. of body weight and ad lib leafy, green vegetables and grass hay. Rabbits should not be allowed high fat or high carbohydrate treats. Also, fruits should be greatly limited in the rabbit’s diet. Some rabbits cannot eat even this limited amount of pellets in the diet and will have gastrointestinal disease unless fed nothing but grasses and hay. Recommended hays include Bermuda or timothy. Alfalfa hay, commonly given to rabbits, may be too high in calcium and protein for most pet rabbits. Young rabbits, gestating rabbits, pregnant rabbits, and rabbits produced for the meat industry may be given food that is lower in fiber and higher in other ingredients.

When carrying rabbits or when performing a procedure, it is always important to handle rabbits with proper restraint. This includes support of the body and legs. Without suitable support, severe spinal injuries can occur. The strong, muscular hindlegs can “kick out” and put enough stress on the vertebra to actually fracture the bone. If the rabbit is held on the table, it can either be held or wrapped in a towel, “burrito” style. If held or carried, the important aspect of handling is restraining the rearlegs so that the rabbit cannot kick while being transported. The physical examination usually requires minimal restraint. Perform the physical examination in the same manner each time so each system is thoroughly assessed. Check the incisor and cheek teeth for malocclusion. The ears should be assessed for both bacterial and arthropod infections. Auscultate the heart and lungs as thoracic disease is common. Palpate the abdomen for organomegaly and auscultate for gut sounds. Check feet and legs for signs of pododermatitis. The basic examination is not very different as those used on other mammals.

The most common diagnostic procedure to perform in rabbits is venipuncture. The average blood volume of most rabbits is 6-8% of the body weight in kilograms and since it is safe to withdraw 6-10% of that blood volume in milliliters. Therefore, it is possible even in dwarf breeds to have enough blood for a hematology and biochemistry profile. The most common sites for venipuncture are the jugular, cephalic, lateral saphenous, and marginal ear veins. With experience, certain venipuncture sites will become preferable to others. Although the marginal ear vein may seem the most accessible, improper technique can cause pinna necrosis which is unacceptable. The jugular and lateral saphenous veins are better choices for large volume venipuncture. The jugular vein, as in other mammals, lies in the jugular furrow. The vein is typically superficial but in obese rabbits, may lie under a substantial amount of fat. One technique is to hold the rabbit at the edge of the table with the forefeet pulled down and the head held upwards. In dyspneic and stressed rabbits, this technique can lead to respiratory arrest, therefore respirations should be monitored closely. Use a 25 gauge needle attached to a 1 or 3 cc syringe. In female rabbits, due to the dewlap, the jugular vein may be difficult to find. Another easily accessible site is the lateral saphenous vein. Place the rabbit on its side and grasp the scruff. Hold off the vein by encircling the proximal thigh area. Increase visualization by removing a small amount of fur in the lateral side of the leg. Pluck rather than shave the hair due to the delicate, thin nature of rabbit skin and the likelihood that shaving may tear the skin. Use a 25 gauge needle attached to a 1 cc syringe to collect blood. The key for good stabilization and therefore successful venipuncture is to hold the leg steady with your free hand. Put pressure on the venipuncture site once the procedure is over as large hematomas form quickly. The cephalic vein is used for venipuncture when only small volumes of blood are needed. Use either a 1 cc syringe attached to a 25 gauge needle or an insulin syringe and small gauge needle for venipuncture. Hold the rabbit in sternal recumbency and encircle the front leg near the elbow. Wet the fur on the foreleg to better visualize the vein.

Give parenteral fluids in rabbits either intravenously, subcutaneously, or intraosseously. Usually, administer a physiologically balanced solution. Specific diseases may require other fluid solutions or the addition of ingredients such as dextrose, B vitamins, potassium. Give fluids at a rate of 50-75 ml/kg/day. Increase the fluid rate to compensate for losses and dehydration. Commonly, catheters are placed in the cephalic or the lateral saphenous vein as these are the most accessible to place a catheter in. In the small rabbit use 24 or 26 gauge peripheral catheters and 22 gauge peripheral catheters in larger rabbits. Usually it is necessary to anesthetize the rabbit for catheter placement. Secure the catheter with
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There is no proven treatment. This organism is a source of clinical disease in rabbits, it is likely to cause problems in older rabbits with chronic lesions as well.

Start by rolling, and nystagmus. Anorexia maybe present. Diagnose this problem with the same diagnostic tests that are used in other mammals. Torticollis is usually caused either by neurologic disease or otitis. Pasteurella multocida is commonly linked to otitis but other bacteria are likely involved, too. Treat otitis with antibiotics and appropriate supportive care. If middle or inner disease is present, a bulla osteotomy may be indicated. The prognosis is usually good unless severe disease is present.

Other causes of head tilt include vestibular disease, cranial nerve lesions, and other brain lesions. This can be a challenge to determine the etiology but bacterial infections are frequently assumed to be the cause.

Anorexia, not a disease itself, but rather a sign of disease, is common in rabbits. Determine the cause of anorexia by doing a minimum data base including a physical examination, CBC, plasma biochemistry panel and radiographs. During the oral examination, closely observe the teeth for malocclusion. Proper examination may not be possible in an awake rabbit. Anesthetize the rabbit for a full oral examination and skull films. Treatment depends on age, degree of malocclusion, and etiology. Gastrointestinal tract (GIT) disease is a common cause for anorexia. Gastrointestinal ileus or GIT stasis is a better term for the disorder that some call "hairballs" (trichobezoar). Hair in the rabbit's stomach is a natural and common occurrence. If there are signs of anorexia and low stool production along with a history of a diet too low in fiber, then GIT stasis is suspected. This is even more likely if the CBC and plasma biochemistry panel do not point to another etiology and radiographs show gas in the GIT. Treat GIT stasis with supportive care and a high fiber diet. Gastrointestinal obstruction is rare. Obstruction is an acute illness characterized by a depressed, hypothermic rabbit. Treat a true gastric obstruction with surgery. Gastric obstructions can be caused by hair mixed with material such as carpet fibers or other foreign objects.

Pasteurella multocida infections are assumed to be an important cause of morbidity and mortality in pet rabbits. This bacteria does cause significant disease in pet rabbits but it is unknown if it is responsible for as many infections in rabbits as people seem to affirm to it. Pasteurella multocida is transmitted by does to kits as they are being born. The nasopharynx is a major site of colonization. Other diseases frequently assumed to be caused by P. multocida infections include conjunctivitis, subcutaneous abscess, osteomyelitis, rhinitis, and pneumonia.

Another controversial organism in rabbit medicine in terms of the incidence of pathogenicity is Encephalitozoon cuniculi. This is a protozoan that is shed in urine. It may or may not be one of the causes of renal and neurologic disease in pet rabbits. If this organism is a source of clinical disease in rabbits, it is likely to cause problems in older rabbits with chronic lesions as opposed to younger rabbits. Serology is only suggestive of disease, no ante-mortem definitive test is yet available, and there is no proven treatment.

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