TREATMENT AND PREVENTION OF UROGENITAL DISEASE IN RABBITS

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Livia Benato and Chris Shepherd discuss, in the final part of their article, common urinary and genital tract diseases and suggest treatment and management options

IN part one (*VT* 41.09) we discussed the clinical approach to common urogenital diseases normally seen in general practice, and diagnostic tests were described.

In part two we describe the more common diseases of the urinary and genital tracts and provide suggestions for treatment and prevention.

Common urinary tract diseases

• *Encephalitozoon cuniculi* – an intracellular parasite. In one UK study (Keeble and Shaw, 2006), it was found that 52 per cent of the clinically normal rabbit population tested positive for *E cuniculi.* Transmission occurs via ingestion of spores shed in the urine of infected rabbits or by vertical transmission from mother to foetus. The organisms infect the kidneys with spores shed in the urine about six weeks after infection.

Other organs involved are the central nervous system and eyes. In healthy rabbits the disease is asymptomatic, with clinical signs developing in immunesuppressed animals. The most common symptoms are head tilt, anorexia, lethargy, urine scalding and cataracts.

Serology will indicate if the animal has been exposed to *E cuniculi,* but the interpretation is often

difficult and should be left to specialist laboratories. Urine PCR can now be used to detect spores. Clinical signs, elimination of other causes and positive serology or PCR may allow a presumptive diagnosis but definitive diagnosis can only be made by postmortem examination.

Treatment is administration of fenbendazole for at least 28 days, and addressing possible secondary infections and underlying diseases. *E cuniculi* is a zoonotic disease that can be transmitted by infected rabbits via urine to immune-suppressed people.

• Urolithiasis – predisposing factors are commercial diets high in calcium, alfalfa leaves as part of the diet, inadequate water intake, obesity and sedentary animals. Hypercalciuria causes sand in the urine and, subsequently, formation of uroliths in kidneys, ureters, bladder and urethra. The mechanical irritation and abrasion due to the sand causes tissue damage and eventually bleeding, infection and obstruction of the urinary tract.

The rabbit is often presented with lethargy, anorexia or haematuria. On physical examination, an enlarged bladder or a tense abdomen can be detected and sludge can be found in urine after manual expression of the bladder. Anuria and inability to express the bladder manually may indicate partial or complete urethral obstruction. Diagnosis of urolithiasis can be aided by a detailed history and evaluation of the behaviour of the animal when urinating. Ultrasonography and radiography will help to distinguish between a sludgy bladder and urolithiasis.

Clinical signs need also to be differentiated from infections of the urinary tract usually caused by *E scherichia coli* and *Pseudomonas* species. Serum biochemistry can give an indication of increased urea levels if obstruction is present. Urinalysis will help identify the types of deposit present in any associated infection. Urinary tract obstruction must be considered an emergency and treated promptly.

The treatment of choice is urinary catheterisation, although surgical intervention is sometimes required to relieve the obstruction. Post-intervention medical treatment generally consists of aggressive fluid therapy to re-establish the urinary flow, systemic antibiotics and analgesics. Also, because excessive calcium content in the diet may contribute to the development of this pathology (Harcourt-Brown, 2002), a moderate calcium diet should be started (Richardson, 2006) and management of the rabbit should be changed gradually to prevent recurrence.

• Urine scalding – dermatitis of the genital and ventral area due to urine contamination. This is more of a pathological symptom and is very common in rabbits because of their highly alkaline urine. The most common causes are polyuria and incontinence due to a number of causes, such as infection of the urinary tract, age-related musculoskeletal changes (for example, arthritis), renal failure, neurological disorders and locomotor disorders (for example, spinal trauma).

Unfortunately, urine scalding is often also due to poor management practices, such as obesity, dental disease, pain and inadequate cleaning of the pet’s bedding by the owner.

Due to pain, the rabbit will be reluctant to adopt a normal posture during urination, leading to further contamination and a vicious cycle of problems. (Table 1).

Therapy consists of cleaning and disinfecting the affected area daily, treating primary causes and providing supportive care. This needs to be addressed quickly to maximise the chances of the rabbit's recovery.

• Acute and chronic renal failure – due to causes such as age, renal uroliths, urinary obstruction, dehydration, severe stress, poisoning, neoplasia and infection such as *E cuniculi.* Often symptoms are non-specific and the owner will report lethargy and anorexia.

During physical examination, urine scalding and enlarged kidneys can be detected. Blood tests will show increased urea, creatinine and phosphorus levels. Raised calcium levels will be found on blood biochemistry and signs of anaemia will be seen on haematology. Urinalysis can provide further information of the nature of the pathology and should always be carried out. Ultrasound-guided needle aspiration is advisable if neoplasia is suspected. Fluid therapy and supportive treatment are necessary, along with treatment of the primary cause when possible. NSAIDs should be avoided.

Common genital tract diseases

• The two most common uterine pathologies in females older than four to five years of age presented with lethargy and anorexia are adenocarcinoma and pyometra.

They can be diagnosed and differentiated by several methods. On physical examination, pale mucous membranes, haematuria, vulvar discharge and staining of the perianal area are general presenting signs in both cases. Mammary gland enlargement may also be present. On abdominal palpation, the uterus may appear enlarged in the case of pyometra, and distinct uterine masses may be palpated in the case of adenocarcinoma. Radiographic examination helps to confirm the clinical findings.

Radiography of the thorax is necessary if secondary pulmonary metastasis is suspected – for example, if dyspnoea is noted. Ultrasonography generally enables distinction between the two pathologies. The treatment of choice, in both cases, is ovariohysterectomy. Owners should be encouraged to permit an ovariohysterectomy in young rabbits not intended for breeding as a preventive measure.

• Pseudo-pregnancy is typical in female rabbits of any age and, as in dogs, involves physical and behavioural changes usually associated with pregnancy. The mammary glands enlarge and the doe may present with alopecia of chest and abdominal area as a result of plucking her fur to prepare the nest. Pseudo-pregnancy in rabbits usually resolves spontaneously after two to three weeks. However, if the problem does not resolve, the rabbit will eventually develop uterine infection

and, possibly, adenocarcinoma of the uterus. The treatment of choice is ovariohysterectomy in these cases.

• Wounds to the genital area in male rabbits are typically seen when two or more entire adult rabbits are housed together. Entire adult males are very territorial and can be aggressive towards other males. When they fight, rabbits tend to bite the genital area, thus causing severe wounds of scrotum, testicles and penis. Intestinal herniation can be seen as consequence of wounds of the scrotal sacs, owing to the open inguinal canal. To prevent this, males should be neutered if housed together.

• *Treponema cuniculi* (rabbit syphilis) is a bacterium that causes infection of the genital tract. It is transmitted via contact with the lesions during breeding. It causes inflammation and congestion of the vulva and prepuce, as well as necrosis and atrophy of seminiferous tubules in males and the uterus and vagina in females. Facial lesions may be seen as a result of grooming infected lesions.

Clinical signs, such as swelling of the mouth and the genital area, should be differentiated from myxomatosis infection. Serology tests can confirm the presence of *T caniculi.* Treatment consists of supportive care and administration of penicillin G (40,000IU/kg) once weekly for at least three weeks. Infected rabbits should also be kept in isolation to avoid transmission to other rabbits.

Supportive treatment

Supportive care is extremely important for the successful recovery of sick rabbits because pain, stress and anorexia alone can rapidly be fatal. Analgesia needs to be addressed as soon as possible using NSAIDs, such as carprofen and meloxicam for mild discomfort, and opioids for moderate to severe discomfort. Syringe feeding with a high-fibre diet and administration of gut motility stimulants, such as metoclopramide and ranitidine, help promote normal activity of the gastrointestinal tract and prevent ileus. A quiet and calm environment away from predators such as cats, dogs and ferrets helps to reduce potential stress factors.

Prevention

Most common diseases can be prevented by good management. A proper diet should be high in fibre and low in carbohydrates, and consist of ad libitum hay, grass, green vegetables and a small dose of good quality rabbit commercial pellets (not a mix of grains). The hutch should be big enough for the rabbit to be able to stretch itself and exhibit normal behaviour. An exercise area should be provided and the hutch and associated areas should be regularly cleaned – rabbits can be easily litter-trained to make daily cleaning easier.

Owners should be aware and informed of the needs of rabbits before buying one. Several books and web resources cover basic husbandry. Neutering is encouraged between four and six months of age in all rabbits not intended for breeding.

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