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Urinary Stones (Urolithiasis) and Pizzle Rot (Posthitis)

URINARY STONES (Urolithiasis) Introduction

Bucks and wethers are prone to urinary tract blockage due to urinary calculi (stones). The most common type in Ontario are calcium phosphate and struvite (magnesium phosphate) from high grain diets rich in phosphorus but deficient in calcium. The calculi often have the appearance of sand. The male urethra is narrow and long. At the end of the penis is the urethra process (vermiform appendage). Sand may become blocked anywhere but most frequently is at the urethral process, sigmoid flexure (about the level of the testicles) and ischial arch as the urethra travels out of the pelvis.

Clinical Signs

The blocked goat will be uncomfortable and will strain and act depressed. Often the presenting complaint is constipation. If observed carefully, the producer may notice frequent dribbling of small amounts of urine which may be blood tinged. If not sure if the goat is urinating, place in an unbedded, cement pen by himself for several hours. Prepuccial hairs may have dried crystals on the end. If not noticed and blockage is total, the bladder ruptures in 24 to 36 hrs. After rupture, the abdomen swells with urine and the goat appears more depressed. He may live another few days before succumbing to the toxins in his system. Occasionally the urethra ruptures

and the urine pools under the skin. This condition is called "water belly".

In bucks, the penis can be exposed and the urethral process examined. Sand or stones, discoloration and swelling may be evident. A normal appearing process may mean the blockage is higher. In wethers, often the prepuce is adherent to the penis and it is difficult to expose the end. Veterinarians may "tap" the abdomen to detect urine in cases of suspected bladder rupture. Catheterization of the urethra is difficult and should only be attempted by a vet. It isn't possible to catheterize into the bladder as there is a diverticulum at the pelvis that the catheter cannot get past.

Treatment

If the blockage is at the urethral process, then it can be snipped off. If urine is voided after this "surgery" then the prognosis, while not good, has some hope. Oral therapy with ammonium chloride which dissolves the remaining stones is highly recommended. If the blockage is higher, then there are two options, both with major problems. A perineal urethrostomy, in which the penis is exposed and cut in its location below the rectum and the urethra exposed, often results in failure if the blockage is higher. In addition, even if immediately successful, it is a salvage procedure as the hole heals up in a few weeks and the goat re-blocks. Therefore it is not a suitable option for breeding bucks or pets.

The second option is very expensive and few practitioners will undertake the surgery. The abdomen is opened and the bladder opened. A catheter is introduced from the bladder into the urethra and the stones flushed down the penis. If successful, all stones are removed and the buck is still capable of breeding. Often the stones are firmly lodged, there is tissue damage from the stones and recovery is very prolonged. Only valuable bucks or valued pets are recommended for this option.

Prevention

As usual, this is a condition better prevented than treated. The diet should have a calcium:phosphorus ratio of 1.5 to 2:1. Salt should be included at 1% of total dry matter intake. Plenty of fresh, palatable water should always be available. Diets high in potassium should be avoided. Vitamin A requirements should be met (good quality green hay and pasture will do this). For herds with previous problems, it is sometimes recommended to include ammonium chloride in the ration at 0.5% of dry matter intake. This is particularly true with kids on creep grain. Other diseases such as coccidiosis, pneumonia, etc. which might cause decreased water consumption or increased needs may spark an "outbreak" of urolithiasis so these diseases should be managed as well.

POSTHITIS (Pizzle Rot)

This is a nutritional disease of bucks and wethers that are on high protein diets, often with high inclusion rates of alfalfa hay. The urine is high in urea and, therefore, very alkaline. The urine scalds the prepuce and allow specific bacteria (*Corynebacterium renale* group) to grow. The prepuce becomes ulcerated, swollen and very painful. The condition is worse in wethers that don't extend their penis to urinate. Affected breeding bucks are often reluctant to extend their penis and may not breed does because of it. Occasionally the condition is so severe that scarring of the prepuce mechanically prevents extension of the penis, rendering the buck infertile. Treatment consists of diet change to lower protein rations (e.g. 12 to 14%), clipping the prepuce hairs, cleaning the area and local antibiotics. Pets or valuable breeding bucks may require surgery if scarring is severe.

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