Urolithiasis is a disorder in small ruminants that is frequently seen in castrated males. This urinary tract disease most often involves the urethra, especially at sites where narrowing of the urethral diameter occurs, such as in the distal part of the sigmoid flexure or in the vermiform appendage (urethral process).

Struvite and apetite are the more common uroliths seen in the regions of North America; however calcium carbonate uroliths have also been reported.

Small ruminants with urolithiasis can present with a range of clinical signs from dribbling urine from the prepuce and straining to urinate to an animal with severe metabolic derangements that need to be stabilized before any further treatment options. Other findings that can be noted during physical examination are a change in abdominal contour and preputial region due to bladder or urethra rupture, pulsation of the urethra, small stones, crystals or blood clots at the preputial orifice.

Medical treatment of obstructive urolithiasis has in general been unrewarding. With medical treatment the urethral process, the most common site of obstruction, is amputated to provide some relief. Once the obstruction is relieved, treatments such as acidification of the urine, fluid therapy, non-steroidal anti-inflammatory treatment as well as broad-spectrum antibiotic therapy are instituted. The goal is the correction of electrolyte imbalances, treatment and prevention of inflammation and infection as well as dissolution of the remaining uroliths. In one half of the cases this treatment is successful; however re-obstruction within hours or sometimes days occurs in 80-90% of the cases. Therefore some sort of additional surgical intervention is usually necessary to relieve the obstruction to temporary or permanently allow for urine diversion.

Selection of appropriate surgical therapy depends on the value and intended use of the animal, the location of the obstruction, and the integrity of the urethra and bladder. Tube cystostomy under general anesthesia seems to be the most successful surgery performed for small ruminants that are breeding animals or pets. A percutaneous tube cystostomy technique has been developed to reduce the costs; however a subsequent second procedure to replace the tube is very likely. Other urine diversion techniques such as prepubic/perineal urethrostomy and urethrotomy have a poor long-term outcome due to stricture formation and are not suitable for breeding animals. Bladder marsupialization has also been successful, but is associated with multiple complications. The success rate of dissolution of the uroliths with laser lithotripsy as described in other species depends if the diameter of the urethra is large enough to pass a laser in an endoscope. Lithotripsy could potentially reduce the cost and the hospitalization of an animal; however it is not readily available in every hospital.

Urolith formation is most likely a multifactorial disease and prevention is influenced by management practices and diet of the animal. The diets should be low in phosphorus/calcium ratio and magnesium and roughage based diets are preferable. The pH of urine also plays a role and a pH of 5.5-6.5 is recommended to prevent urolithiasis. Since castrated males have a higher tendency to develop this disease, delayed castration might help increase the urethral diameter due to the prolonged positive influence of testosterone.
Short-term treatments for urolithiasis may be straightforward, but long-term resolution of urethral obstruction can sometimes be a complicated and unsatisfying endeavor.