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UROLITHIASIS AND CYSTITIS IN MALE CATS

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Various foods and hard water have frequently been suggested as causes of cystitis in cats, but there is little evidence that these agents do more than possibly aggravate a condition having some other etiology. Providing cats with only distilled water appears to have prevented calculi in some instances, but the mechanism of action must be more complex than simply the lack of minerals in the water; milk and other foods contain more minerals than are ingested from water. Neither vitamin A nor other vitamins seem to affect the incidence of urolithiasis. Early castration is frequently said to predispose to urolithiasis because of the small urethral size in these animals. The problem here is one of retention rather than formation, but some of the worst cases are seen in old toms. The long, thin bladder neck in cats, together with the angle it forms with the penis in males, may also favor retention of calculi. Perhaps of greater significance is the thickening of the bladder wall in cystitis, which causes urine to be retained and is a source of continuing trouble. Bladder infection does not appear to be an essential factor; metabolic irritants in the absence of bacteria may also cause a cystitis.

Of the various types of calculi in cats, the pasty mucous plug is the most bothersome both in diagnosis and treatment; being nonmineral in nature, the substance is not visible in radiographs. Urine pH influences the type of calculus formed, and the rate of formation may be increased as much as 10 times in strongly alkaline urine. Treatment for urolithiasis is not always successful, but good enough results are obtained sufficiently to warrant treatment in most cases. The bladder is usually distended, and the first step in treatment is to relieve the distention. Passing a metal catheter against the pressure caused by a full bladder may result in puncture of the penis, and tapping the abdomen is a better means for emptying the bladder. Once the pressure has been reduced either sand or mucous plugs can often be returned to the bladder by using a tuberculin-type syringe and cannula to introduce saline into the urethra.

If the owner will permit surgery, opening the bladder affords the best means for determining the condition of the bladder and how amenable it may be to treatment. It also facilitates the complete removal of calculi or mucous debris. After removing sand or stones, or scooping out mucous material with a spoon, the bladder is flushed with Ringer's solution, using a catheter and syringe for irrigation. If the bladder wall is thickened it should be scraped with a curette to induce acute inflammation. The bladder should not be sutured until all hemorrhage has ceased and the blood is removed. Infusion of an intramammary ointment containing antibiotics and steroids (e.g., SF 17900: Upjohn) is useful for controlling inflammation where indicated. An indwelling catheter or frequent tranquilization and catheterization may be required to keep the bladder empty until its natural tonicity is restored. In any case it is likely that the cat will require close attention the rest of its life and, fortunately, the psychology of cat-owning clients is such that they "want to be bothered" with what other persons might consider an intolerable nuisance. The cat should re-

ceive antibiotics for at least a month or longer, starting with chloramphenicol, 25 mg/day in 3 divided doses p.o. and reduced the 2nd week.

Bacterial sensitivity tests should be made and, if indicated, the antibiotic treatment changed on the basis of these results. Culturing the last urine obtained, whether by catheter or opening the bladder, will minimize the chances of negative findings. The instruments used in obtaining the urine specimen should not be chemically sterlized; even soap may result in false-negative cultures. Enteric bacteria — usually E coli — are most commonly found; these grow readily in alkaline urine and cause further alkalinity.

In long-term medical treatment, Urised (Conal) has the disadvantage of causing white cats to turn blue, and aspirin should not be used; it may cause ulcers and blood changes — and a small overdose may be fatal. As a urine acidifier, either chlorethamine tablets or DL methionine may be used, the latter having an advantage in that it can be administered in the food. This treatment should be continued for the rest of the cat's life. If the bladder is atonic it should be kept empty — but not by squeezing. Even with faithful treatment, cystitis and/or urolithiasis will recur in some 15 to 20% of cases. The condition of the bladder must be determined accurately to give a reasonably dependable prognosis, and flushing the urethra — although necessary at times — affords only temporary relief if the underlying condition is not corrected.