Nonsurgical Removal of Urethroliths from the Terminal Urethra of Female Guinea Pigs

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Stones >1 cm in diameter commonly lodge at the urethral orifice because they are large enough to pass through the wide urethra but cannot pass through the urethral orifice.

In the literature

Lewis TT, Lennox AM. Nonsurgical removal of urethral uroliths using a self-retaining retractor with elastic stays in female guinea pigs (*Cavia porcellus*): 16 cases (2006-2019). *J Exotic Pet Med*. 2021;36:11-15.

FROM THE PAGE ...

The urethra of female guinea pigs does not open into the vagina; rather, it has a separate opening in the perineum, allowing easy access to the terminal urethra. The urethra is short and wide, which allows small uroliths to pass. Stones >1 cm in diameter commonly lodge at the urethral orifice because they are large enough to pass through the wide urethra but cannot pass through the urethral orifice.

In this study, 16 stones lodged in the terminal urethra were removed from 15 female guinea pigs (one had recurrence that was managed with the same technique). A commercially available self-retaining retractor was used to stretch the urethral orifice to allow retrieval of the stone(s). In patients with multiple stones, those not lodged in the urethra were then flushed from the bladder.

General anesthesia was used to perform the procedure. In 13 guinea pigs, a single stone was removed intact, and in 3 guinea pigs the stone was broken into smaller pieces, which were easily removed. Only minor trauma caused by the retractor was reported. The authors found this technique to be a fast, minimally invasive, technically simple, and cost-effective method for removing distally lodged urethroliths in female guinea pigs.

… TO YOUR PATIENTS

Key pearls to put into practice:

1 Stones in the terminal urethra are easy to palpate, but, prior to planning surgery, radiography should be performed to determine the number of stones in the urethra. Some guinea pigs in this study had multiple urethral calculi and some had cystic and ureteral uroliths.

2 This procedure involved use of a commercially available self-retaining retractor to carefully stretch the orifice, allowing stones to be grasped and removed or broken and removed in pieces. Some of these retractors are for single use while others are fully autoclavable, including the elastic bands; this author recommends purchasing the reusable models.

3 If a stone cannot be removed using this method in this study, urethrotomy at the urethral orifice can be performed. An incision just large enough to remove the stone(s) should be made. There is no need to suture the urethrotomy—it can be allowed to heal by second intention.[1]

4 The cause of urolithiasis in guinea pigs is unknown, and recurrence is common. Guinea pigs excrete excess dietary calcium through the urinary system, and one study has shown urinary calculi from this species to be primarily composed of calcium carbonate.[2] Pet owners should be educated regarding the possibility of recurrence and related clinical signs.

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