



Rogue Valley Equine Hospital

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Case Report: Urolith removal via a standing perineal urethrotomy in a quarter horse gelding using radial shock waves.

This case report describes the use of a modified shockwave probe inserted through a perineal urethrotomy incision to fragment a Type 1 bladder urolith in a quarter horse gelding. The Probe was made by welding a 42 cm length of ¼ inch stainless steel rod onto a 10mm probe of the MASTERPULS MP 100 radial shock wave machine. The tip of the probe was rounded to prevent trauma to the bladder or urethra should the horse become agitated during the procedure.

A 14 year old quarter horse gelding was referred to us for removal of a 6 cm urolith that was discovered when the gelding was examined for polyuria and stranguria. The referring veterinarian treated the gelding with Trimethoprim-Sulfadiazine 20 mg/kg PO once daily for one week prior to referral.

The gelding was maintained on Trimethoprim Sulfadiazine and given 500 mg of flunixin meglumine IV presurgically. Under detomidine hydrochloride (Dormosedan) sedation and an epidural of 100 mg xylazine and 3 cc's of 2% mepivacaine hydrochloride (Carbocaine) qs'd to 10 cc with sterile saline, the gelding was prepped and a sterile stallion catheter was passed into the bladder. A routine 6 cm. perineal urethrotomy incision was done just above the ischial arch exposing the catheter within the urethra. The catheter was withdrawn to a point just distal to the incision to prevent fragments of the urolith from becoming lodged in the distal urethra. A lubricated, shortened 16 mm nasotracheal tube was inserted through the proximal urethra and into the bladder to protect the proximal urethra.

An IV injection of 60 mg of N-butylscopolammonium bromide (Buscopan) was given to reduce rectal straining. Using a hand inserted per rectum the urolith was manipulated into the caudal bladder and a modified shock wave probe was inserted through the 16 mm tube in the proximal urethra. The urolith was held against the modified shock wave probe with moderate pressure. Once the tip was held in contact with the urolith, shock waves were delivered at a frequency of 10 Hz and at a maximum setting of 4 bars on the MASTERPULS MP 100. In several short bursts the urolith was reduced to 4 or 5 fragments ranging from .5 to 1.5 cm in diameter, and the remainder of the urolith was reduced to the consistency of coarse sand. The gelding was only moderately sedated at the time, and stood quietly in the

stocks during the entire procedure. The 16 mm tube was removed and several large fragments were grasped and removed with sponge forceps. The appearance of the fragments was consistent with a Type 1 urolith. A large silicone stomach tube was inserted through the urethrotomy incision into the bladder, and the bladder was lavaged with saline repeatedly to remove the smaller fragments. Endoscopic examination of the bladder revealed the presence of two remaining fragments in the apex of the bladder that were too large to pass through the lavage tube.

Several attempts were made to retrieve the fragments, and to reduce their size by using the shock wave probe, but their small size and the thickened bladder wall prevented them from being manipulated easily. Due to concerns over traumatizing the bladder and urethra excessively, the decision was made to attempt to retrieve them when a second lavage of the bladder was scheduled. The gelding was placed in a stall, continued on Trimethoprim-sulfadiazine and given 1 gram of phenylbutazone orally twice daily.

48 hours later, under detomidine sedation and using a loop snare through the endoscope's instrument portal the remaining fragments were removed relatively easily. The bladder was lavaged with saline using the large diameter silicone tube until the bladder was free of any remaining fragments. The incision was left to heal by second intention. The gelding was hospitalized for 48 hours until the hemorrhage from the incision abated, then he was discharged. The owner was instructed to keep him on Trimethoprim- sulfadiazine 20 mg/kg once daily orally for fourteen days. Recovery was uneventful.

This case demonstrated the effective use of radial shock waves to remove a bladder urolith via a standing perineal urethrotomy.

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