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Clinical and surgical approach of a complicated ureter ectopy in a bitch

ESCUER, G.¹; CAVILLA, V.²; CATALANO, C.¹; DEL RIO, M.¹; CLAUSSE, M.³; CATALANO, M.⁴; NEJAMKIN, P.⁵; LANDIVAR, F.¹; GUTIÉRREZ, V.¹; MARTÍNEZ, S.⁶; NASELLO, W.¹; FOGEL, F.⁷ Y DEL SOLE, M.J.⁸

¹Vet., Ayudante Diplomada (Ay), Hospital Escuela de Pequeños Animales (HEPA), Facultad de Ciencias Veterinarias (FCV), Centro de Medicina Veterinaria Traslacional (MEVET), Universidad Nacional del Centro de la Provincia de Buenos Aires (UNCPBA). ²Dra., Ay. Área Clínica Médica y Quirúrgica de Pequeños Animales (CMYQPA), HEPA, FCV, MEVET, UNCPBA. ³Dra., Jefa de Trabajos Prácticos Área de Cirugía General, Investigadora Asistente CONICET, HEPA, MEVET, Centro de Investigación Veterinaria de Tandil CIC-CONICET-UNCPBA (CIVETAN). ⁴Vet., Profesor Adjunto, Área Cirugía General, FCV, MEVET, UNCPBA. ⁵Vet., JTP HEPA, MEVET, FCV, UNCPBA. ⁶Vet., Ay. HEPA, Becario CONICET, HEPA, MEVET, CIVETAN. ⁷Vet., Profesor Adjunto (Prof. Ad.) CMYQPA, FCV, MEVET, UNCPBA. ⁸Dra., Prof. Ad. HEPA, Investigadora Adjunta CONICET, MEVET, CIVETAN. E-mail: geescuer@vet.unicen.edu.ar

Ectopic ureter is a congenital anomaly in which one or both ureters empty out of the bladder. The aim of this work is to describe the clinical findings and the integral treatment performed in a canine with an ectopic ureter.

The 5-year-old female Border Collie crossbreed presented urinary incontinence and excessive drooling. At the general inspection, the patient presents a good general condition, hypersalivation due to hypoglossia and ulcerative dermatitis in the groin and vulva due to urine incontinence. An ultrasound study revealed hydroureter of right ureter (62 mm) with a tortuous path, hydronephrosis of the right kidney and left kidney agenesis. A sample was taken for culture and antibiogram. Treatment with enrofloxacin (5 mg / kg orally every 24 h) was indicated based on the result of the culture (*Proteus mirabilis* ENR sensitive). The opening of the ureter in the urethra was confirmed by excretory urogram and computed tomography. Surgical reimplantation of the urethra was carried out 30 days after the initial consultation. During the procedure, active ureteral peristalsis was confirmed. *Staphylococcus intermedius* and *Proteus mirabilis* resistant to enrofloxacin were isolated from the urine samples. Therefore, treatment with amoxicillin-clavulanic acid (20 mg / kg orally every 12 h) was indicated. Monthly controls and cultures were repeated. Different microorganisms with multi-resistance were isolated and treatment was indicated. Given the persistence of dilatation of the ureter a ureteropexy was performed 6 months after the initial surgery in the attempt to correct a tortuous course of the ureter distal to the dilatation. To increase ureteral tone, two therapies were implemented: i) treatment with pseudoephedrine (0.23 mg / Kg every 12 h, oral) and ii) weekly physiotherapy with electrical stimulation using exponential monophasic current (Neurovip®). Two months after starting this second treatment, a notable decrease in the diameter of the ureter (52 mm to 19 mm) was observed. These findings were accompanied by a significant reduction in urinary incontinence. However, UTIs recurred for at least 18 months after diagnosis. Throughout the 13 positive cultures, 7 different bacterial strains were isolated: *Proteus mirabilis*, *Staphylococcus intermedius*, *Morganella morganii*, *Moraxella urethralis*, *Oligella urethralis*, *Enterobacter cloacae*, non hemolytic *Streptococcus spp.* Antibiotic resistance increased as new antibiotic treatments were administered.

Management of complicated ureteral ectopic patients is challenging. It is necessary to establish an orderly diagnostic path, correctly select medical and surgical tools for treatment and carry out exhaustive monitoring. In this case, the presence of a single kidney conditioned the treatment since the functionality of the ureter was mandatory. Physiotherapy could be a valuable tool in the treatment of this type of pathology, it would be interesting to further investigate electrical stimulation effect on ureteral motility.