Surgical correction of a perineal fistula in a 9 month old female Dandie Dinmont terrier with urinary incontinence

C. Scully, M. Milovancev, H. Montilla, S. Nemanic, C. Estill
Department of Clinical Sciences, College of Veterinary Medicine, Oregon State University, Corvallis, OR

A 9 month old female Dandie Dinmont Terrier presented to the Oregon State University Veterinary Teaching Hospital with a history of urinary incontinence. Urogenital examination revealed a 3 mm circular orifice in the perineum, midway between the vulva and the anus, through which urine leakage was observed. When examining the vulva, an excessively large clitoris was evident. The cause of the incontinence was assumed to be a developmental urogenital anomaly resulting from an intersex condition. Excretory urography by computed tomography (CT), followed by antegrade and retrograde CT urethrography was performed with a 64 slice helical CT scanner (Aquilion®, Toshiba Medical Software, Tustin, CA). Computed tomography showed a congenital caudal genito-urinary malformation with two urinary exit tracts that communicated between the urinary bladder and a fluid-filled uterus within the pelvic canal. The external urethral opening in the clitoris was smaller than the more dorsal perineal opening. The selected surgical approach was to resect the fistula, closing the extra perineal orifice. The clitoral urethral orifice was enlarged and the vulva was reconstructed to better envelop the clitoris (much like the prepuce covers the penis in the male animal). Postoperative perineal distension, erythema, and pain led to the decision to perform a radiographic positive contrast retrograde urethrogram, which revealed urine leakage and contrast pooling at the perineal surgical site. An ovariohysterocolpectomy and surgical repair at the site of urine leakage were performed during a second operation. The surgical repair revealed a failure in the closure of the urethral mucosa. Postoperatively, a 5 French red rubber catheter was placed in the urethra for 72 h to assist in the healing process by limiting hydrostatic pressure within the urinary tract. The previously observed perineal distension, erythema, and pain did not recur. The patient was discharged one week after the second operation and six months postoperatively was still continent and clinically normal. Histopathological evaluation of the surgically removed gonads revealed only ovarian tissue without evidence of a testicular component, thus ruling out hermaphroism as a cause of the developmental disorder. Karyotyping confirmed a 78XX genotype. Further investigation also revealed that this animal was one of three females in a litter of five and provided no evidence of the dam’s exposure to any reproductive steroids during gestation.

Urinary incontinence is a relatively common disorder, particularly in bitches. This case is notable because the urinary incontinence resulted from anatomic abnormalities of the internal and external urogenital structures without any apparent cause. The methods used to reconstruct the perineal area and correct the urinary incontinence in this case reflect an amalgam of those previously reported. In this case, the maintenance of the clitoral urethra (maximizing urethral length and theoretically increasing the likelihood of urinary continence), and the reconstruction of the vulva (serving as an envelope for the enlarged clitoris and preserving an environment for normal flora) represent novel aspects of surgical treatment.

Keywords: Urinary incontinence, clitoris, perineal fistula, intersex