Prostatic adenocarcinoma in a cat

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An 11-year-old castrated cat was evaluated because of intermittent hematuria of 7 weeks' duration. On numerous occasions, the owner had observed a small amount of fresh blood where the cat had been sitting. The cat had been treated with various antibiotics, a urinary acidifier, and dietary manipulation. The owner had noticed a partial response to treatment on the basis of a decrease in the frequency and quantity of blood observed. No episodes of dysuria or pollakiuria had been noticed. The cat had no medical history of lower urinary tract disease. Analysis of multiple urine samples obtained via manual expression of bladder contents had revealed numerous RBC without crystals, bacteria, or a high number of WBC. Bacterial culture results of the urine, obtained while the cat was on antibiotics, had been negative.

On physical examination, the cat was attentive without clinical signs of illness. The kidneys were normal in shape and size. The bladder was approximately 5 cm in diameter; signs of pain were not elicited by palpation. The penis was easily extruded and was normal in appearance. A grossly clear urine sample was obtained via atrumatic cystocentesis. The urine pH was 6.5 and the specific gravity was 1.048. Protein, glucose, ketones, blood, or bilirubin was not detected on a standard strip analysis. Shortly after urine was obtained by cystocentesis, the cat voided voluntarily. Gross hematuria was obvious. The blood was not attributed to the cystocentesis procedure.

Abdominal radiography revealed normal renal and bladder shadows. A 2-cm mass of soft-tissue density was visualized caudal to the bladder at the pelvic brim. Rectal palpation confirmed a mass caudal to the bladder. The only abnormality revealed by IV urography was the mass caudal to the bladder. Double-contrast cystography revealed a normal-appearing urinary bladder with a mass caudal to it. Voiding urethrography revealed reflux of contrast material within the mass. Microscopic examination of a fine-needle aspirate of the mass revealed sheets of epithelioid cells with numerous acini and numerous mitotic figures. A tentative diagnosis of prostatic adenocarcinoma was made, and surgical intervention was recommended. Thoracic and abdominal radiography revealed no evidence of metastatic disease.

A ventral midline incision was made to approach the caudal portion of the abdomen. Approximately 7 mm of normal urethra was between the neck of the urinary bladder and the cranial border of the prostatic neoplasm. The neoplasm extended caudally to a point midway between the pelvic brim and the ischiatic arch. It was not adhered to adjacent structures, but could not be mobilized cranial to the pelvic brim.

Bilateral osteotomy of the pubis was performed. The osteotomy sites were parallel to the long axis of the body and continued into the lateral aspect of the obturator foramina. Portions of the gracilis, external obturator, and adductor muscles were elevated from the bone flap. The bone flap was retracted cranially to expose the pelvic canal and the entire prostatic neoplasm.

The periprostatic fat was dissected away. Small prostatic vessels were electrocoagulated as they were encountered. The urethra was transected cranial and caudal to the borders of the neoplasm. Simple interrupted sutures of 5-0 polydioxanone were used to anastomose the urethra. An excisional biopsy specimen of an iliac lymph node was obtained to check for evidence of metastasis. The pelvic osteotomy sites were wired with 22-gauge wire. The abdominal fascia and musculature were closed with 2-0 polydioxanone. Subcutaneous and skin closure were routine. The cat recovered from isoflurane anesthesia without complications.

An indwelling urinary catheter was left in place for 4 day after surgery. The urinary bladder was emptied hourly. The cat urinated voluntarily after the catheter was removed and was continent. Lactated Ringer solution was administered IV at maintenance amounts for 3 days. Amoxicillin was administered until the tenth day after surgery.

Histologic examination of the prostate gland confirmed prostatic adenocarcinoma. Metastatic...
neoplastic cells were not detected in the iliac nodal tissue specimen.

Because of the aggressive nature of this neoplasm in dogs, adjunctive therapy was recommended. Both chemotherapy and radiotherapy have been used in dogs as rational treatments after prostatectomy. The owner elected to have the cat treated with chemotherapy as an adjunct to surgery. The cat was treated with 30 mg of doxorubicin/m² of body surface and 300 mg of cyclophosphamide/m² once every 4 weeks. Because of the potential nephrotoxicosis of doxorubicin in cats, a serum creatinine concentration determination and urinalysis were performed prior to each treatment. Serum creatinine concentration was less than 1.2 mg/dl prior to each of the first 4 treatments, and urine specific gravity was consistently greater than 1.035. Prior to the fifth treatment of a total of 6 planned, the creatinine concentration was 2.8 mg/dl. The urine specific gravity was 1.018 with 1+ proteinuria. On the basis of results of radiography and physical examination, chemotherapy was discontinued. Two weeks later, the serum creatinine concentration was 1.4 mg/dl, and the proteinuria had resolved. Ten months after surgery, the cat was examined because of dyschezia. Rectal palpation revealed an extraluminal mass adherent to the pelvic floor with marked obstruction of the pelvic canal. Microscopic examination of a fine-needle aspirate confirmed recurrence of the prostatic neoplasm. At the owner’s request, the cat was euthanatized and a necropsy was performed. A 4-cm mass was within the pelvic canal in association with the urethra. Numerous nodules were within the pancreas and lungs. Histologic examination confirmed recurrence of prostatic adenocarcinoma with metastasis to the pancreas and lungs.

Prostatic neoplasms have been previously reported in cats; however, we are unaware of any other reports describing treatment of the neoplasms. As with other species, metastatic potential should be considered when formulating treatment and prognosis.