Intraoral Radiographic Technique in Rabbits
Reptile Lighting
Testicular Interstitial Cell Neoplasia in a Rabbit

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A 5-year-old, 5.6-lb (2.54-kg), male mini rex rabbit presented to the Southeast Animal Hospital for evaluation of a testicular swelling of several month’s duration (Figs 1, 2). The physical examination findings were within normal limits, except for a swollen firm right testicle of approximately 3” x 2” (7.6 cm x 5 cm). The testicle was not painful or hot on palpation. A primary testicular neoplasia was suspected.

The diagnostic plan, which included blood work and whole body radiographs with emphasis on the thorax, were performed pre-operatively with the rabbit under isoflurane anesthesia. Blood work showed mild hypoglycemia (secondary to stress); hypokalemia (possibly due to sample handling when sent out for processing) and a mildly elevated alkaline phosphatase (because alanine transaminase, bilirubin, albumin and blood urea nitrogen results were within normal reference ranges, this was considered an incidental and nonspecific finding). All other hematology and serum biochemistry parameters were within normal limits. Radiographs were also within normal limits for the species, and no evidence of metastasis was seen.

The rabbit was admitted for surgery within 24 hours of the diagnostic workup. Due to its fractious nature, the patient was anesthetized with isoflurane and oxygen via a box induction method and maintained by mask. Butorphanol was administered (0.6 mg or 0.24 mg/kg IM) preoperatively. A 22-ga intravenous catheter was placed in the cephalic vein of the rabbit’s right front leg, and a multiple electrolyte solution (Plasma-Lyte - Baxter) was administered at 2 times the maintenance dose (BW lbs x 60 ml/lb/day ÷ 24 = 15 ml/hour). The anesthetized rabbit was placed in dorsal recumbency and a pulse oximeter device placed on its ear to monitor heart rate and oxygen saturation.

The left testicle was not palpable pre-operatively. Normal aseptic preparation was performed. A traditional pre-scrotal incision was enlarged to allow removal of the abnormally large right testicle that was adhered to the scrotum. A monofilament absorbable suture (3-0) was chosen because of its ease of use, minimal tissue drag and minimal tissue reaction. The spermatic cord, deferent duct and vessels...
were transfixed and double ligated (Fig 3) according to the procedure described by Capello. The left testicle was still not palpable and was suspected to be atrophied due to the larger right side. The owner declined a full surgical exploratory to locate the second testicle. The incision was closed subcutaneously with simple continuous sutures of 3-0 monofilament absorbable suture, and the skin was closed with a subcuticular pattern. Tissue glue was applied (Fig 4). Buprenorphine was administered (0.05 mg or 0.02 mg/kg) divided subcutaneously and intramuscularly. Recovery was uneventful. Meloxicam (0.45 mg or 0.18 mg/kg) was dispensed for oral use once daily for 3 days.

The testicle (Fig 5) was submitted to the Texas Veterinary Medical Diagnostic Laboratory for histopathologic evaluation. The results yielded a testicular interstitial cell tumor. This well differentiated tumor exhibited no evidence of cellular atypia, mitotic activity or stromal invasion. The testicular architecture was replaced by an expansile well demarcated mass characterized by large cysts and clefts lined by multiple layers of polygonal cells with apical nuclei. Cells contained moderate quantities of eosinophilic occasionally finely vacuolated cytoplasm with distinct borders and round to ovoid nuclei. Anisocytosis and anisokaryosis were mild, and mitotic figures were rare. No cells extended along the spermatic cord or exhibited stromal invasion.

Discussion

Testicular neoplasia is uncommon in lagomorphs. Benign interstitial cell tumors (Leydig cell tumors) of mature male rabbits have been described in the literature. These cells do not seem to produce excessive androgen secretion in multiple animal species (older domestic bulls, Fisher rats). A recent report describes a tumor that may have hormonal stimulation related to the tumor. However, because the patient was euthanized prior to diagnosis in that case, it is unknown if castration would have resolved the gnecomastia. In this case, the tumor appears to have benign behavior. Three months postoperatively the rabbit has continued to do well, unlike the rabbits in other reports that were sacrificed prior to diagnosis.

References and Further Reading
