BRIEF COMMUNICATION

CHORDOMA OF THE TAIL IN A DEGU (*OCTODON DEGUS*)

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Abstract

A 6-year-old female degu (*Octodon degus*) in good body condition was presented with a mass at the base of the tail. Following presentation and the owners' approval, the tail of the degu was surgically amputated. The mass was submitted for pathological evaluation following the surgical procedure. Histologically, the mass was comprised of lobules and sheets of polygonal cells displaying moderate amounts of basophilic foamy cytoplasm (physaliferous cells). The pathological results of the tail mass were consistent with chordoma. Approximately 3 months following the tail amputation the patient died.

Key words: chordoma; degu; neoplasia; Octodon degus; tail

The degu (*Octodon degus*) is a member of the family Octodontidae, and is native to northern and western Chile. These animals live at altitudes up to 1200 m on the western slopes of the Andes.[1] Total length of degus, from nose to rear, range from 125 to 195 mm, with a tail length of 105 to 165 mm. Body weight ranges from 170 to 300 g for adults. Over the past decade, degus have become popular pets in many parts of the world. Degus have also been used as laboratory research animals in studies that include neurobiological developmental patterns and neurodegenerative conditions.[1,2]

Chordomas are rare musculoskeletal tumors in domestic animals, with the exception of ferrets. In ferrets, chordomas frequently occur at the tip of the tail and in cervical vertebrae as low-grade malignancies.[3] Among zoo animals, Perdido Key beach mice (*Peromyscus polionotus trissyllepsis*) have been reported to show a high prevalence of chordomas in the vertebral column.[4] These tumors have been thought to arise from remnants of the notochord.[5]

A 6-year-old female degu was presented with a rubbery-to-firm, raised mass measuring $2 \times 2 \times 1.5$ cm at the base of the tail (Fig. 1). The skin overlying the mass had a clinical presentation of alopecia. No other significant visible abnormalities were noted on the physical examination. Based on the clinical presentation, surgical amputation of the tail was recommended and the owners of the patient agreed to have the surgery performed on their degu. Preanesthetic medications, including butorphanol 0.4 mg/kg, subcutaneously (Meiji Seika Pharma, Tokyo, Japan) and midazolam 0.4 mg/kg, subcutaneously (Takeda Pharmaceutical Company, Osaka, Japan), were administered 30 minutes before the surgical procedure. Induction of anesthesia was achieved using alfaxalone 1 mg/kg, subcutaneously (Meiji Seika Pharma, Tokyo, Japan), followed by isoflurane in an acrylic induction chamber. For local analgesia, lidocaine 1 mg/kg, subcutaneously (Terumo Corporation, Tokyo, Japan) and

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FIGURE 1. Tissue mass located at the base of the tail of a degu. The skin overlying the mass shows alopecia.

bupivacaine 1 mg/kg, subcutaneous (AstraZeneca K.K. Osaka, Japan) were administered at the incision site. The skin was incised with a scalpel, after which the tail was amputated. The surgical wound was closed using subcutaneous buried sutures with absorbable monofilament. For clinical management following the surgical procedure, the patient was prescribed enrofloxacin 5 mg/kg, subcutaneously, once a day (Kyoritsu Seiyaku Corporation, Tokyo, Japan), carbazochrome sodium sulfonate hydrate 0.2 mg/kg, subcutaneously, twice a day (Mitsubishi Tanabe Pharma, Osaka, Japan), tranexamic acid 10 mg/kg, subcutaneously, twice a day (Daiichi Sankyo Company, Tokyo, Japan), and meloxicam 0.2 mg/kg, subcutaneously, once a day (Boehringer Ingelheim Vetmedica Japan, Tokyo, Japan). No abnormalities were observed during anesthesia or recovery. The excised tissue sample was fixed in 10% neutral-buffered formalin. Representative trimmed tissues were routinely processed, embedded in paraffin, sectioned at 5 μm, and stained with hematoxylin and eosin. Histologically, the dermis, subcutis, and skeletal muscle were effaced by a moderately cellular, mildly infiltrative mass (Fig. 2). The mass was comprised of polygonal cells arranged in lobules and sheets, supported by large amounts of fibrous connective tissue. Occasionally, a basophilic mucinous matrix was prominent between cells. The neoplastic cells displayed distinct cell borders with moderate amounts of basophilic foamy cytoplasm, representing physaliferous cells (Fig. 3). Nuclei were small and round, with finely stippled chromatin and small nucleoli. Anisocytosis and anisokaryosis were mild to moderate. The mitosis count was less than one per ten high-power (400 ×) fields. Small, multifocal islands of bone and cartilage were evident within the mass. These histological findings were consistent with chordoma. Approximately 3 months following the surgical procedure the patient died, presumably due to respiratory failure. No local recurrence of the chordoma was identified prior to death.

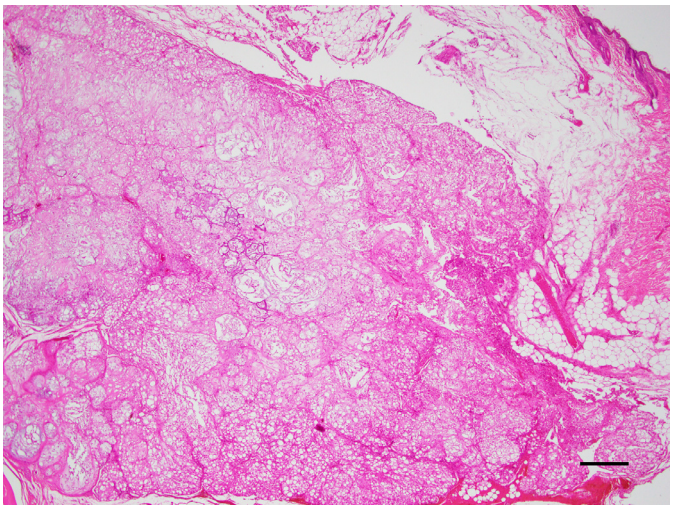

FIGURE 2. Histological section of the excised tissue mass. The dermis, subcutis, and skeletal muscle are effaced by a moderately cellular, mildly infiltrative mass. The mass is comprised of polygonal cells arranged in lobules and sheets, supported by large amounts of fibrous connective tissue. Hematoxylin and eosin staining. Bar = 500 μm.