

# Management of an Extraskkeletal Osteosarcoma in an African Hedgehog (*Atelerix albiventris*)

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## Abstract

A 5-year-old female African hedgehog (*Atelerix albiventris*) was presented with a mass on its left caudodorsal flank and progressive lethargy. A fine-needle aspirate of the mass was suggestive of a malignant spindle cell tumor. After the diagnostic test results were obtained, the mass was surgically removed. Histopathological examination of tissue sections from the mass revealed incomplete excision of an extraskkeletal osteosarcoma. Approximately 2 months after surgery, the patient suddenly died. Gross examination at necropsy revealed multifocal nodules within the spleen, liver, and lungs. Histopathology of the tissues that contained the multifocal nodules was consistent with metastatic osteosarcoma, originating from the original extraskkeletal soft tissue osteosarcoma on the flank. Incidental uterine leiomyoma was also discovered at necropsy. To the authors' knowledge, this is the first reported attempt at surgical treatment of the rarely documented extraskkeletal osteosarcoma in a hedgehog. Copyright 2011 Elsevier Inc. All rights reserved.

**Key words:** *Atelerix albiventris*; extraskkeletal osteosarcoma; hedgehog; leiomyoma; neoplasia; spindle cell tumor

A 5-year-old intact, 374-g female African hedgehog (*Atelerix albiventris*) was presented to the Kansas State University Veterinary Medical Teaching Hospital for lethargy of 1 week's duration and progressive swelling of the left caudolateral flank (Fig 1). The hedgehog's husbandry and behavior were otherwise unremarkable with normal appetite, urination, and bowel movements. The patient was manually restrained and anesthetized with isoflurane gas administered via face mask. On physical examination, a 3.8 × 5.1 cm ulcerated mass on the left caudolateral dorsum was observed. Mild gingivitis and tartar were also present when the oral cavity was evaluated.

While anesthetized, a fine-needle aspirate of the mass was obtained. Cytology of the aspirate showed both individual and aggregate spindle cells with round,

oval, to elongated nuclei, coarsely granular chromatin patterns, prominent nucleoli, and moderate amounts of light blue cytoplasm (Wright's stain). Binucleation

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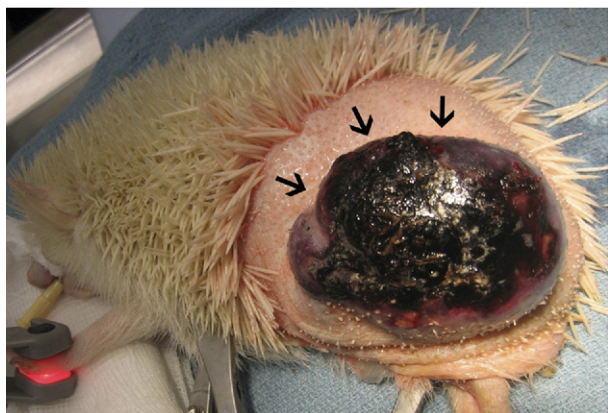
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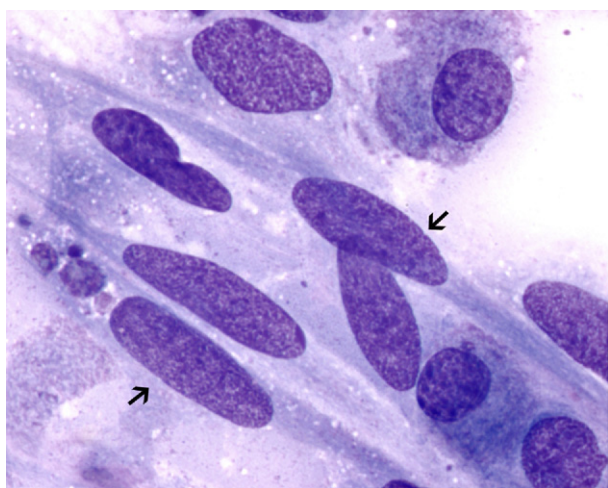
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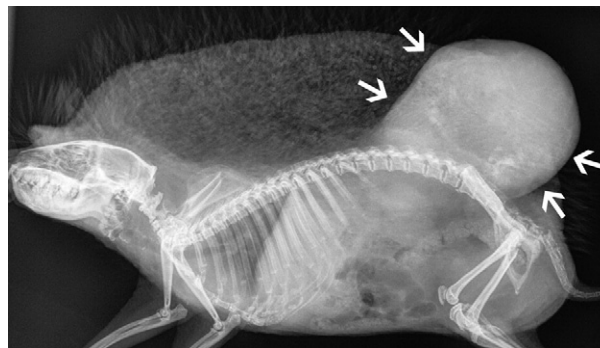
**Figure 1.** Caudolateral mass (arrows) on the left flank of a 5-year-old African hedgehog.

and multinucleation were common along with moderate anisocytosis and anisokaryosis (Fig 2). A malignant spindle cell tumor was suspected and excisional biopsy was recommended to the owner.

Twenty-one days after the initial presentation the hedgehog re-presented for surgical removal of the mass. While at home the hedgehog's activity level had continued to decrease, its body weight was reduced by 30 g, and the mass had grown to  $4.0 \times 6.1$  cm and appeared to have necrotic areas. Preoperative radiographs (Fig 3) revealed a large superficial, caudal abdominal, dorsal, soft tissue mass with amorphous regions of mineral opacity. The mass measured approximately  $5.2 \times 6.3 \times 4.4$  cm on the radiographs and there was concurrent dorsal subluxation of the sacrocaudal intervertebral disc space and mineralization of the larynx and trachea. No obvious metastatic lesions were identified. The pa-

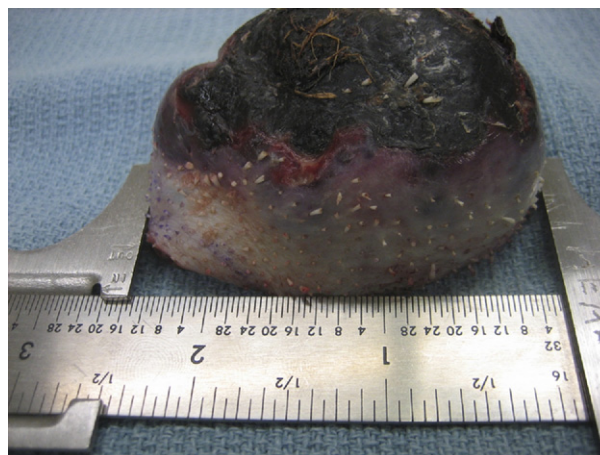


**Figure 2.** Fine-needle aspirate of the African hedgehog mass: spindle cells (arrows) at  $1000\times$  magnification. Wright's stain.



**Figure 3.** Right lateral whole body radiograph demonstrating the large soft tissue mass (arrows) associated with amorphous regions of mineral opacity.

tient was premedicated with buprenorphine (0.01 mg/kg subcutaneously, Buprenex; Reckitt Benckiser Pharmaceuticals Inc., Richmond, VA USA), ceftiofur (22 mg/kg subcutaneously, Naxcel; Pfizer Animal Health, New York, NY USA), and warm lactated Ringer's solution (12 mL subcutaneously). Preanesthetic bloodwork was not performed because of the inherent difficulty in obtaining a blood sample from a conscious hedgehog. Anesthesia was induced via masking with isoflurane gas (5%) and oxygen (2 L/min) and maintained with isoflurane (range, 2%-5%) by means of intubation with an 18-gauge catheter. The patient was manually ventilated intermittently throughout the procedure. A 50-g, malodorous mass was surgically removed (Figs 4 and 5) via an elliptical skin incision and careful dissection from the surrounding tissue layers, and submitted for histopathological examination. The subcutaneous tissues were closed with absorbable suture and the skin was closed with nonabsorbable nylon cruciate sutures. The patient recovered from



**Figure 4.** Excised soft tissue mass with areas of necrosis.

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