# Juvenile bovine angiomatosis in the mandible

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A 2-month-old, female, Holstein calf was presented to the large animal hospital of the Université de Montréal with a congenital, slow-growing, swelling of the right mandible. Clinically, the calf showed slight lethargy, fever, and sporadic coughing. The mandibular swelling was attributed to a large, hard, deforming mass involving the right mandibular body. Radiographically, the mass consisted of an exuberant spicular periosteal reaction with central rarefaction.

**Figure 1.** Large deforming mass involving the right mandibular body. Note displaced teeth and necrotic surface. (Bar = 2 cm)

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This article has been edited but not peer reviewed. Individuals interested in examining histological slides and photographic material archived from this case should contact the author or the secretary-treasurer of the Canadian Association of Veterinary Pathologists (see *CVMA Directory*).

The teeth were irregularly displaced, with the mass extending from the first premolar to the last molar tooth.

A biopsy confirmed the new bone formation seen radiographically and identified, deeper in the mass, a hamartoma-like, benign-appearing, vascular tissue. Because of the large size of the mass and its location, complete excision without functional impairment could not be ensured, and the animal was euthanized.

At necropsy, the mandibular mass was ellipsoidal (10 × 6 × 5.5 cm), hard, and hemorrhagic (Figure 1). The tongue was displaced to the left side. An extensive mucosal ulceration, covered by necrotic material, was present on the dorsal surface of the mass. Some of the

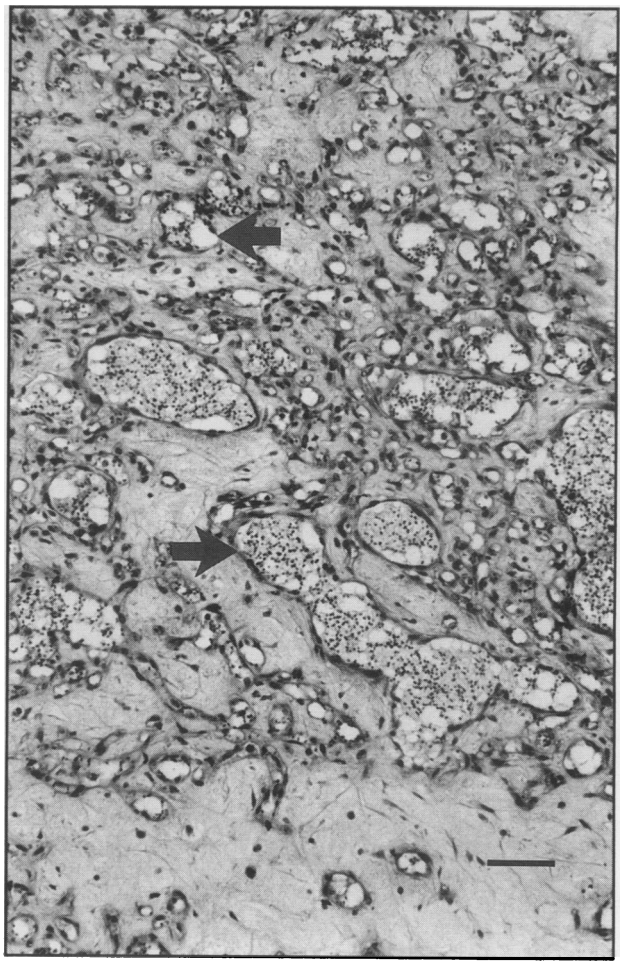

**Figure 2.** Multiple, irregular, endothelial-lined, thin-walled, blood-filled vascular spaces in a myxomatous stroma (arrows) in a mandibular mass from a calf (juvenile angiomatosis). Hematoxylin-phloxine-saffron. (Bar = 50 μm)

teeth were displaced laterally, whereas others were included within the mass. A focal suppurative bronchopneumonia, which accounted for the coughing, was the only other finding.

Histologically, most of the mandibular mass was composed of numerous thin-walled, blood-filled, vascular spaces of varying shape and size within an abundant, pale, myxomatous stroma and infrequent, solid, hyalinized foci. Occasionally, the vascular structures were closely packed in a tortuous arrangement (Figure 2). The vascular spaces, reminiscent of embryonal vascular tissue, were lined by a thin layer of benign-appearing endothelial cells. The vascular tissue was located predominantly in the medullary spaces of the mandibular cancellous bone. Focal loss of bone tissue, newly formed bony trabeculae, and multiple, focally extensive areas of periosteal hyperostosis were also present. Large gingival ulcerations with cellular debris, neutrophils, and bacteria covered the surface of the mass. Based on the pathological examinations, juvenile bovine angiomatosis in the mandible was diagnosed.

Benign vascular tumors are infrequently found in calves. In previously reported cases, the lesions were solitary or multiple, located in various tissues, and found either in animals at birth or an early age, or in fetuses (1). Despite the cases having similar clinical and pathological features, hamartoma-like vascular tumors have been variously called vascular hamartoma, hemangioma, and angiomatous vascular malformation, or angiomatosis. Until more is known about the etiology, biological behavior, and true nature of these tumors, Watson and Thompson (1990) have recommended the name juvenile bovine angiomatosis. Juvenile bovine angiomatosis should be included on the list of differential diagnoses for solitary or multiple, space-occupying, hemorrhagic masses in newborn calves. Differential diagnoses for lesions in the mandible include osteomyelitis, fracture, dental or mesenchymal tumor, and congenital malformation.

### References

1. Watson TDJ, Thompson H. Juvenile bovine angiomatosis: a syndrome of young cattle. Vet Rec 1990; 127: 279–282.

# COMING EVENTS

# ÉVÉNEMENTS À VENIR

**CVMA Conventions/ Congrès de l'ACMV**

**1995**
**Victoria, British Columbia**
**July/Juillet 12–15**

**1996**
**Charlottetown, Prince Edward Island July/Juillet 3–6**

## MARCH/MARS 1995

**American Board of Veterinary Practitioners — Examinations.** Annual certification and recertification examinations for ABVP candidates. Deadline for applications is March 1, 1995. Examinations to be administered at the Marriott O'Hare in Chicago. December 8–10, 1995. Application booklets available. Contact: American Board of Veterinary Practitioners, 530 Church Street, Suite 300, Nashville, Tennessee 37219; tel.: (615) 254-3687; fax: (615) 254-7047.

**22nd Annual Meeting of the Veterinary Orthopedic Society.** March 4–11, 1995 in Whistler, British Columbia. Contact: Daman-Nelson Travel, 501 Howard Street, San Francisco, California 94105; tel.: (415) 982-9860.

**The Association for Equine Sports Medicine 14th Annual Meeting.** March 9–12, 1995 at the Pala Mesa Resort in Fallbrook, California. Topics include: discussions of metabolic problems and lameness, conditioning programs, and nutrition. Contact: Executive Director, AESM, P.O. Box 4506, Santa Barbara, California 93140-4506; tel.: (805) 965-1028; fax: (805) 965-0722

**62nd Annual Meeting & Spring Management Conference of the American Animal Hospital Association.** March 25–29, 1995, at the Colorado Convention Center & Denver Marriott City Center in Denver, Colorado. Includes scientific and management seminars plus sessions for veterinary technicians and office personnel. To be followed by the **AAHA Post Annual Meeting Ski Conference** at Keystone Resort in Keystone, Colorado. Contact: AAHA Member Service Center, P.O. Box 150899, Denver, Colorado 80215-0899; tel.: (800) 252-2242 or (303) 986-2800.

**5th International Symposium on Pathology of Reptiles and Amphibians.** March 31 – April 2, 1995 at "AVIFAUNA" National Bird Park, Hoorn 65, 2402 HG Alphen aan de Rijn, The Netherlands. Contact: Prof. Dr. P. Zwart, Burg.v.d. Weijerstraat 16, NL-3981 EK BUNNIK, The Netherlands; fax: 31-(0)3405-67262.

## APRIL/AVRIL 1995

**American Animal Hospital Association Satellite Teleconference: A Body Systems Approach to Antibiotic Selection.** At 24 downlink sites throughout the United States and Canada. Contact: AAHA Member Service Center, P.O. Box 150899, Denver, Colorado 80215-0899, tel.: (800) 252-2242 or (303) 986-2800.

**VOORJAARSDAGEN Annual International Companion Animal Congress.** April 21–23, 1995 in Amsterdam, The Netherlands. Contact: Voorjaarsdagen Committee c/o H.P. Meyer, Royal Netherlands Veterinary Association, P.O. Box 14031, 3508 SB Utrecht, The Netherlands; tel.: 31-30-510111; fax: 31-30-511787.

**Feline Behavior Weekend Seminar.** April 22–23, 1995 at Cornell University, Ithaca, New York. Solving Feline Behavior Problems featuring Dr. Katherine Houpt. Program charge of $285 includes tuition, course materials and meals. Contact: Solving Feline Behavior Problems, Box 233, Cornell University, B20 Day Hall, Ithaca, New York 14853-2801; tel.: (607) 255-7259; fax: (607) 255-8942.

**Eighth International Annual Conference on Lyme Borreliosis.** April 28–29, 1995 in Vancouver, British Columbia. Sponsored by the Lyme Disease Foundation Inc. Contact: Diane Kindree, President, Vancouver, BC, Lyme Borreliosis Society, P.O. Box 91535, West Vancouver, British Columbia V7V 3P2; tel.: (604) 922-3704.

## MAY/MAI 1995

**Annual Australian Veterinary Conference.** May 21–26, 1995 at the World Congress Center, Melbourne, Australia. Theme: AVA Vets and Society, Making a Difference. Contact: Doreen Culliver, Australian Veterinary Association, Conference Organising Service, 7 Phipps Place, Deakin, ACT 2600, Australia; tel.: (06) 285-3600; fax: (06) 285-3913.