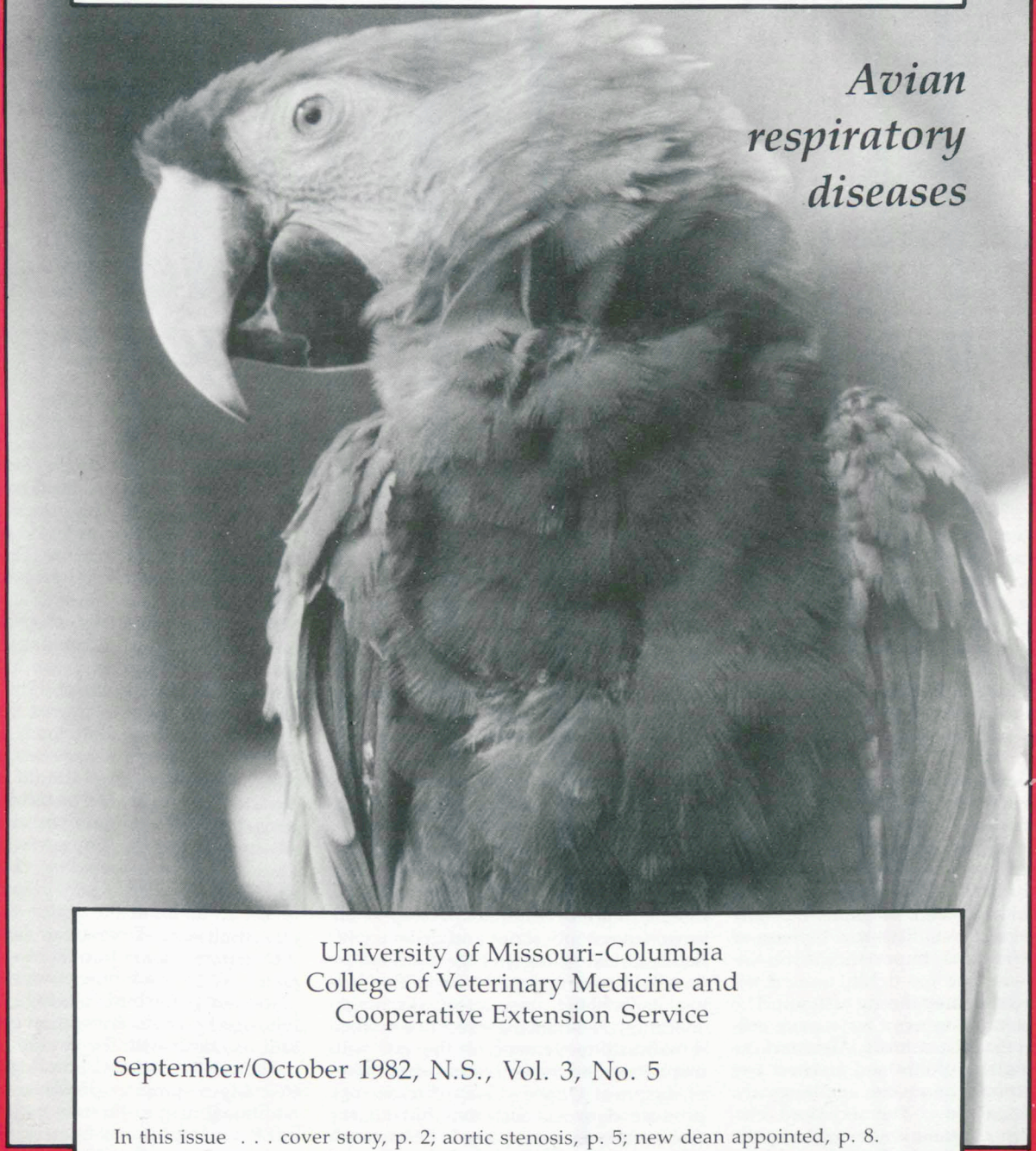
VETERINARY MEDICAL REVIEW



Avian respiratory diseases

University of Missouri-Columbia
College of Veterinary Medicine and
Cooperative Extension Service

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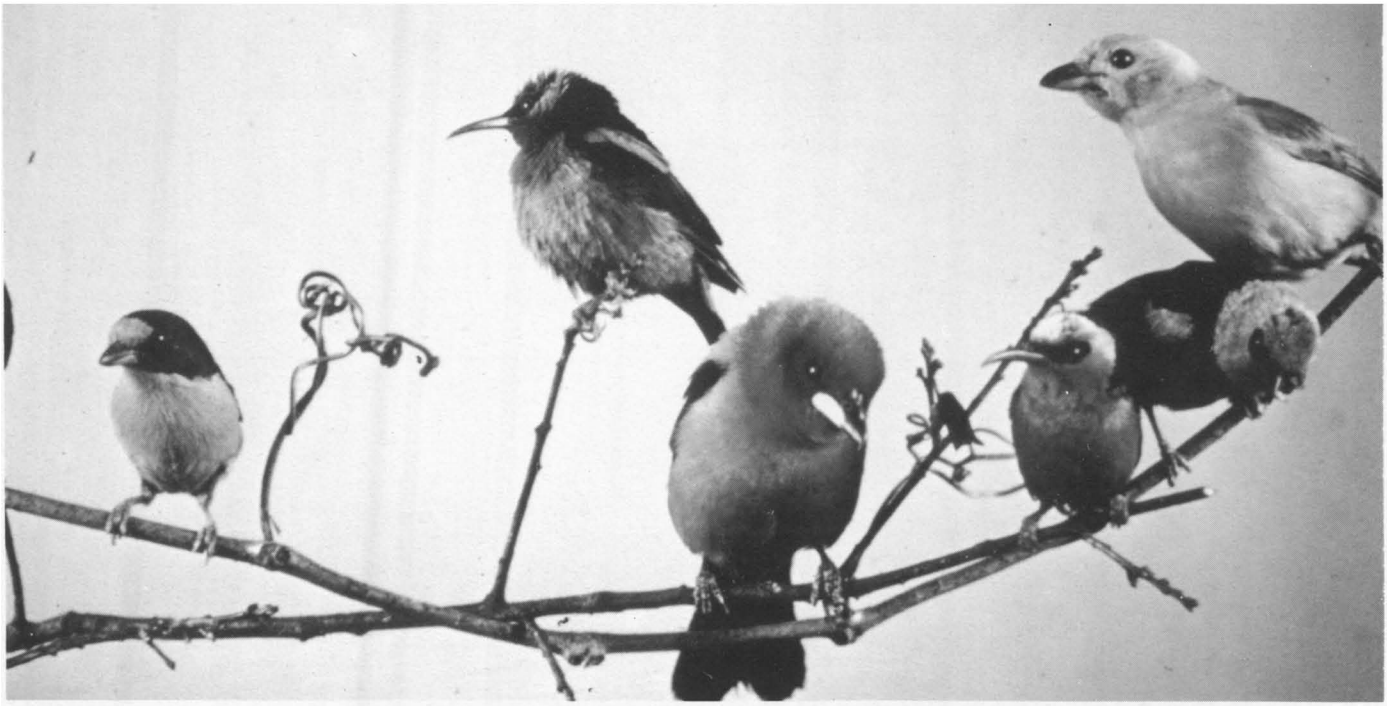

Respiratory disease in caged birds

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The recent boom in the pet trade demonstrates an increasing popularity of feathered pets. These pet owners are seeking veterinary services for their avian, and frequently costly, companions. This review will discuss one of the common presenting illnesses in these pets—respiratory disease. Particular emphasis will be placed on psitticines (parrots, budgerigars) and on passerines (finches, canaries).

To understand avian respiratory disease, it is necessary to appreciate some of the unique features of the avian respiratory system. The bird has no functional diaphragm, and so the majority of air movement results from excursions of the abdominal wall and movement of the intercostal muscles. This can become of critical, even fatal, importance if the fingers are wrapped too tightly around the thorax and abdomen during restraint. The avian system is in many ways more efficient than that of mammals. Air enters the system via the glottis and trachea and moves through the air sacs and lungs in a unidirectional flow. The increased efficiency of this system is attested to by the high altitudes at which birds may fly, levels where mammals find even mild exercise stressful. The system also leads to greater sensitivity to environmental changes, evidenced by the use of canaries in coal mines as early sentinels for lethal gases.

Rather than blind, saclike alveoli, avian lungs are composed of flow-through air capillaries that enhance air exchange. There are nine air sacs, membranous bags that are lined with mesothelium. They are not functional in gas exchange. In flighted birds, the air sacs extend into the proximal long bones. Therefore, fractures or osteomyelitis of the femur or humerus expose the respiratory system to contamination. The air sacs are highly reactive when infected, but the accumulation of inflammatory debris in their central dead space often leads to difficulties in treatment. Of special note in some avian species is the syrinx, a sometimes elaborate "voicebox" located proximal to the tracheal bifurcation.

As in mammals, the avian respiratory system is susceptible to damage from bacterial, viral, fungal, toxic and parasitic disease. Signs of respiratory diseases may range from nondescript and general (ruffled feathers, sitting on cage floor, failure to talk, loss of appetite) to specific (gaping, tailbobbing, respiratory discharge, sneezing). Tail-bobbing refers to a marked downward movement of the tail with inspiration and may serve as an indication of dyspnea. Upper airway disease may produce dyspnea early on, but air sac disease may be far advanced before such signs are observed.

Examination should begin by careful observation of the bird's breathing pattern at rest. Physical examination should follow. This can be carried out only by manually grasping the bird for palpation and auscultation. If the bird is extremely dyspnic, oxygen therapy may precede the examination. Although risk is involved in the examination of the stressed avian patient, it is justified by the necessity of diagnosis and treatment. The owner should be forewarned, however, of the risk to his pet.

A quick, yet complete, physical examination should ensue. Palpation of the sternal musculature gives an idea of the duration of the condition (is it emaciated?). On auscultation, a mild inspiratory click may be normal, but a loud, persistent click may indicate air sac debris or airway obstruction. The nares should be examined for any discharge or blockage. The periorbital region should be examined for any swelling of the sinuses in that area. The oral cavity, including the glottis, should be observed. Body palpation may reveal an abdominal mass or subcutaneous emphysema from an air sac rupture. (SQ emphysema is normal in screamers, pelicans and some other waterfowl.) Replacement of the bird in its cage should be followed by close observation of how the bird has dealt with the stress.

There is a common clinical appearance to many respiratory diseases; therefore, additional diagnostic tests may be needed. Radiography may be performed with or without anesthesia. A properly positioned lateral and ventral dorsal view are necessary for lung and air sac evaluation (see *Current Veterinary Therapy VI*). Air sac consolidation indicates chronicity, and be-

cause of its poor resolution, denotes a guarded prognosis. Radiography may reveal abdominal masses that are secondarily embarrassing respiration. Bloodwork may be helpful. Total protein less than 3 mg/dl indicates chronicity and a poor prognosis.[1] A PCV should be done and WBC may be subjectively evaluated. Swabs of respiratory and oral exudate may be submitted for staining and culture. A preliminary study can be done by gram-staining the exudates. Avian normal flora is gram-positive; the presence of large numbers of gram-negative organisms indicates possible pathology. The rapidity of disease progression in these pets, and often their high monetary value, warrants early culture and sensitivity testing.

The most common respiratory presentation is the pet with nasal discharge from sinusitis. The history commonly involves the advent of air conditioning or a lack of heat in the bird's home. Mild cases may show a slight depression and sneezing, but acute cases may present moribund. Most frequently cultured agents include *E. coli, Pseudomonas aeruginosa, Staphylococci* and *Streptococci*. Mycoplasma has been incriminated, but it is difficult to diagnose. Treatment should include warming of the environment (80° to 85°F), systemic antibiotics, and tube-feeding if the bird is anorectic and depressed. Broad-spectrum antibiotics should be administered parenterally until the bird is consuming food and water normally. In the convalescent bird, antibiotics may be administered in the water. Chronic sinusitis presents as supra- or infraorbital swellings near the commissure of the beak. Birds tend to form caseous exudates, and so drainage must be achieved by surgical drainage and curettage. Antibiotics may be instilled directly into the sinus in addition to systemic treatment.[2]

Proliferative lesions of the oral cavity and nares that interfere with respiration may result from vitamin A deficiency, avian pox, trichomoniasis (particularly common in pigeons), neoplastic growths (e.g., squamous carcinoma of the cere) and candidiasis. Scaly mites may result in superficial scaling of the cere.

Vitamin A deficiency is associated with oral abscesses from alteration of epithelial cells and subsequent blockage of epithelial glands. The deficiency may be accompanied by serous nasal discharge and conjunctivitis. Supplementation can take place in the diet and by the addition of two to five drops of Abdec (Parke-Davis) in 30 cc of drinking water.[3]

Pox affects colonies of canaries and of pigeons, frequently in explosive episodes. The respiratory form of the disease may be accompanied by crusting, serous lesions in the mouth and on the fleshy portions of the face. Tentative diagnosis can be made on the basis of symptoms,

From budgerigars to juncos, the most common problems plaguing caged birds are respiratory ailments. Successful treatment requires a good deal of understanding and cooperation on the owner's part.

Photos courtesy of St. Louis Zoo

Cover photo by Dr. R. E. Miller

history and intracytoplasmic inclusion bodies in tissue sections. Only supportive treatment for affected birds is available. Vaccination is of questionable value, and the disease is most easily prevented by quarantine of new arrivals in the colony.

Trichomoniasis and candidiasis usually are limited to the oral cavity and to the gastrointestinal tract. Respiratory signs are secondary to proliferative lesions around the glottis. Diagnosis is made by direct swab.

In the lower respiratory tract, the air sacs are involved more frequently in disease processes than the lungs. In conditions of the lower respiratory tract, birds are often presented much later in the course of the disease because of nondescript symptoms. Bacterial agents are the most common cause of air sac infections and may include *E. coli, Pseudomonas aeruginosa, Proteus, Klebsiella,* streptococci, staphylococci and *Pasteurella* sp. (Culture may be attempted from tracheal exudates or a tracheal swab.) Systemic antibiotics are required for proper treatment. Viral and mycoplasmal agents must be considered in unresponsive cases.

A perplexing problem is the diagnosis of aspergillosis, a relatively frequent and chronic fungal air sac infection. It is often secondary to stress such as shipping, and some species are more susceptible than others. To date, with the exception of laparoscopy of lesions, no antemortem diagnostic test has proven readily available and highly accurate. Consolidation of air sacs and unresponsiveness to antibiotic therapy suggests the possibility of fungal infection. On necropsy, the air sacs are covered by soft white, yellow or green plaques. Granulomas may appear in adjacent organs. Lesions may be widespread or occur as focal fungal growths. No highly reliable treatment is known, although therapy may be attempted with 5-fluorocytosine (Ancobon) at 100 mg/kg for 10 days. Therapy also may be attempted with intratracheal or nebulized amphotericin B.[5]

Several bacterial and viral diseases primarily affect other organ systems, but their importance as zoonoses, requirements for reporting, and significance for the poultry industry make recognition of their respiratory signs important. Psittacosis ("parrot fever") most often occurs as a gastrointestinal disease, although it may have respiratory manifestations. In man, it presents as an atypical pneumonia. In the avian necropsy, cloudy air sacs with fibrinous tags accompanied by pericarditis, splenomegaly and hepatomegaly should indicate precautions for a psitticosis suspect. Antemortem diagnosis may be attempted via complement-fixing titers, but a suspect patient should be started on chlortetracycline in the interim (0.5 mg drug/gm seed for 45 days—Keet-Life,® Hartz Mountain).[6]

Avian tuberculosis is not a common finding but one that should be included in the differential for parrots. Avian strains of tuberculosis occur primarily as a gastrointestinal disease. Respiratory involvement is usually by secondary extension or metastasis from the gut viscera. Large adult parrots are an exception. In association with an infected owner, they may contract bovine or human tuberculosis with lung involvement. Usually, symptoms are nonspecific and associated with wasting. No definitive premortem diagnosis or treatment exists for TB in exotic birds.

Newcastle disease, a viral infection, may present as a respiratory infection or central nervous system disturbance. While not common in pet bird collections, the viscerotropic velogenic form of the disease (VVND) recently has accounted for the eradication of many exposed exotic birds in quarantine stations.

Occasionally, respiratory disease may be caused by parasites. Gapeworms have been described in poultry, pheasants and

Continued on Page 4

Birds

From Page 3

waterfowl. They may be identified from adult worms in the trachea or ova in the feces. Treatment may be attempted with oral levamisole (40 mg/kg), injectable DNP (60 to 80 mg/kg weekly, although feathers may be stained yellow) or thiabendazole (50 to 200 mg/kg once daily for 7 to 10 days).[7] In pet birds, air sac mites may be found on a tracheal swab, or more commonly on necropsy. Canaries most commonly are affected. The mites may cause no problem, but heavy infections may lead to dyspnea. Treatment may be attempted by placing the bird in a small box and exposing it to 5 percent malathion dust for five minutes weekly for four to 16 weeks. Nebulization of 10 percent medical grade malathion in alevair—40 ml per hour in one cubic foot weekly for five treatments—may be more effective.[8] Filarial air sac worms commonly are found on necropsy, but rarely are pathogenic.

Hypothyroidism has been incriminated in inspiratory dyspnea in the budgerigar. Iodine deficiencies can lead to goiter. The location of the thyroids at the thoracic inlet leads to direct pressure on the trachea. Although not a common finding, the possibility may be eliminated by supplementation of the drinking water with one drop daily of a solution of 2 cc of Lugol's Solution in 30 cc of water.

Treatment of the avian patient with antibiotics requires appropriate dosages and equipment. Pet birds range from finches (15 to 20 grams) and budgerigars (30 to 40 grams) to large parrots (0.5 to 1 kg) and macaws (1 to 2 kg). As sick birds become anorectic, parenteral or direct oral administration of medication is a must. Table I lists injectable and oral dosages for some frequently used antibiotics. Table II includes dosages for addition to the drinking water of convalescent birds.

Successful medication of these pets requires the owner's understanding and participation in convalescent care. In addition, the veterinarian should take time to investigate the environment and diet of the bird and to explain to the client many of the different husbandry needs of the bird as a pet (see July/August 1981 *Veterinary Medical Review*, Vol. 2, No. 4, pp. 6-7). In many veterinary practices, the volume of avian patients is increasing. Treatment of these feathered patients not only provides a service for the client, but also unique challenges of diagnosis and treatment for the clinician.

TABLE I

INJECTABLE ANTIBIOTICS[9]

Drug	Concentration	ml/30 gm	Frequency
Gentamycin	50 mg/ml	.005	BID-TID
Chloroamphenicol succinate	100 mg/ml	.01-.015 (birds over 3 lbs give canine dose)	BID
Tylocine	50 mg/ml	.01-.02	BID
Sulfadimethoxine	100 mg/ml	.0075	BID
Ampicillin[10]	100 mg/ml	.015-.03 50-100 mg/kg	TID-QID
Tetracycline	100 mg/ml	.01-.015 (reduce to 3-5 mg/lb if over 454 gm)	BID
ORAL ANTIBIOTICS			
Chloroamphenicol palmitate	125 mg/4 ml	.05 (1 drop)	QID
Amoxicillin	50 mg/ml	.25	BID
Minocycline (Minocin-Lederle)	10 mg/ml	.15 (in larger birds 15 mg/kg BID)	BID
Ampicillin[10]	100 mg/ml	.045-.06 (150-200 mg/kg)	BID-TID

TABLE II

ANTIBIOTICS TO ADD TO THE WATER[9]

Drug	Concentration	Dilution
Tetracycline	100 mg/ml	350 mg/500 ml
Tylosin	50 mg/ml	200 mg/500 ml
Chloramphenicol succinate	100 mg/ml	320 mg/500 ml
Chloroamphenicol palmitate	125 mg/4 ml	320 mg/500 ml
Ampicillin	100 mg/ml	125 mg/500 ml
Sulfamethazine	125 mg/ml (12.5% Albon)	1 part to 16 parts water

Footnotes

[1]Ensley, Phillip, "Caged Bird Medicine and Husbandry," *The Vet. Cl. of N. Am.*, Saunders Co., Philadelphia, Vol. 9, 1979, p. 509.

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[3]Altman, Robert B., "Respiratory Diseases in Caged Birds," *The Vet. Cl. of N. Am.*, Saunders Co., Philadelphia, Vol. 9, p. 533, 1979.

[4]Altman, Ibid., p. 537

[5]Altman, Ibid., p. 536

[6]Fowler, M. E., *Zoo and Wild Animal Medicine*, Saunders Co., Philadelphia, p. 371, 1978.

[7]Greve, J. W., "Parasitic Diseases, *Zoo and Wild Animal Medicine*, Fowler, M. E., Saunders Co., Philadelphia, p. 375, 1978.

[8]Greve, Ibid., p. 378

[9]Wallach, J. and Boever, W. J., *Exotic Animal Medicine*, Saunders Co., Philadelphia, 1982 (in print).

[10]Ensley, P. K., Janssen, D. L., "A Preliminary Study Comparing the Pharmacokinetics of Ampicillin Given Orally and Intramuscularly to Psitticines: Amazon Parrots (Amazona spp.) and Blue-Naped Parrots (*Tanygnathus lucionensis*), J. Zoo An. Med. Vol. 12, p. 46, 1981.

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1. *The Veterinary Clinics of North America: Small Animal Practice—Non-Domestic Pet Medicine, Wallach, J. and Boever, W. J., Saunders Co., Philadelphia, Vol. 9, No. 3, August 1979.*
2. *Zoo and Wild Animal Medicine*, Fowler, M., Saunders Co., Philadelphia, 1978.
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4. *Current Veterinary Therapy VI and VII*, Saunders.

Aortic stenosis

Surgical correction is the only form of treatment

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Everett Aronson, D.V.M.
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Fourth in a series

Aortic stenosis, an obstruction to the outflow of blood in the region of the aortic valve, occurs most commonly in larger breed dogs. German shepherds, boxers, and Newfoundlands have been identified as having increased incidence. As with pulmonic stenosis, the narrowing of the vessel can be subvalvular, valvular, or supravalvular. Subvalvular is most common with the stricture occurring as a fibrous or fibromuscular ring.

Routine exams of puppies provide detection of murmurs before the animal becomes symptomatic. The murmur is an ejection-type, crescendo-decrescendo, systolic murmur that is generally heard best on the left side near the elbow. The right cranial thorax might be the sight of greatest intensity since the aortic arch courses to the right. The murmur frequently radiates up the carotid arteries and can be heard in the ventral cervical area, and sometimes even can be detected when the stethoscope is placed on top of the head.

Electrocardiography may be normal or might show abnormalities consistent with left ventricular hypertrophy. Many animals have ventricular ectopic beats due to secondary myocardial problems.

Radiology

The plain film diagnosis of aortic stenosis in the dog is often difficult. The radiographic appearance of the cardiac silhouette and thoracic vessels depend on the type of the aortic stenosis and the length of time the disease has been present. The lateral radiograph of a young dog with an uncomplicated aortic stenosis usually demonstrates an enlarged heart with loss of the cranial waist, slightly enlarged left ventricle, and a normal pulmonary vasculature. The loss of the cranial waist is caused by the enlarged post-stenotic dilatation of the aortic arch overlying the right atrium and right ventricle. This loss of the cranial waist is the most characteristic radiographic sign seen with aortic stenosis. On the ventral dorsal projection, the heart usually appears elongated with rounding of the left ventricular border. The descending aorta is normal; however there may be a prominence of the aortic arch extending into the cranial mediastinum.

Undiagnosed cases of aortic stenosis may develop secondary complications of left ventricular hypertrophy, enlarged left atrium due to mitral regurgitation, and venous congestion due to left heart failure. In these animals, the diagnosis of aortic stenosis may be overlooked due to the secondary changes present.

Aortic stenosis can be diagnosed easily by nonselective angiography. The contrast media outlines the enlarged post-stenotic dilatation of the ascending aorta. The normal aorta is uniform in width and should not be any larger than the sinus of Valsalva at its base.

Figure 1 is the plain film lateral radiograph of a 5-month-old Newfoundland puppy with aortic stenosis. Notice that the carina is elevated, there is loss of the cranial waist, and the caudal border of the heart is straighter than normal. The ventral dorsal radiograph in Figure 2 demonstrates elongation of the cardiac silhouette, enlargement of the left ventricle, and a prominence of the aortic arch in the cranial mediastinum. The nonselective angiogram depicted on Figure 3 was taken six seconds after the injection of contrast media into the jugular vein. Notice how the contrast media outlines the markedly enlarged post-stenotic dilatation of the ascending aorta.

Although most cases will be detected prior to clinical signs becoming apparent, undetected or untreated cases develop left heart failure. Signs include cough, moist rales and exercise intolerance. Syncope is also a very common sign. Since the left ventricle must pump against greater pressure, the left ventricular wall hypertrophies. This hypertrophy is not accompanied by adequate coronary blood supply, therefore, myocardial ischemia is common. This causes ventricular premature beats and possibly ventricular tachycardia and fibrillation. Untreated cases many times die suddenly, probably due to ventricular fibrillation.

The only treatment to relieve the problem is surgically removing the obstruction; however, this requires extracorporeal circulation. Medical treatment consists of treating the heart failure—digoxin, diuretics, low sodium diets, and antiarrhythmic agents if needed. Without surgical correction, survival time is short and owners should be informed their dog probably will die suddenly.

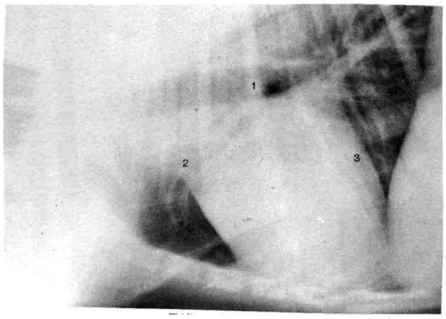


Figure 1: Lateral thoracic radiograph of a 5-month-old Newfoundland with aortic stenosis. The carina is elevated, 1. There is loss of the cranial waist, 2. The left caudal border of the cardiac silhouette is straighter than normal, 3.

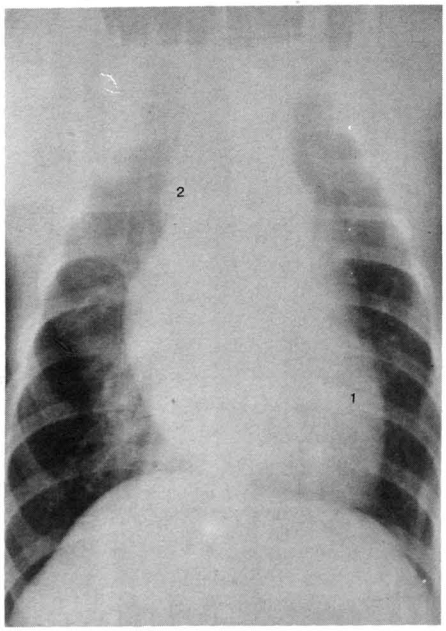


Figure 2: Ventral dorsal radiograph of the same dog in Figure 1. The cardiac silhouette is elongated; there is left ventricular enlargement, 1, and a prominence of the aortic arch into the cranial mediastinum, 2.

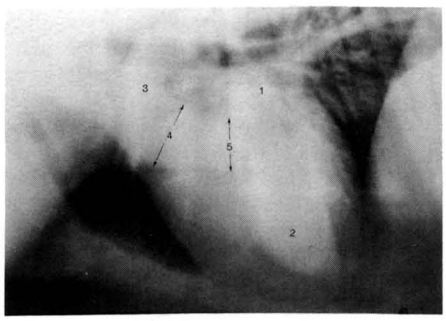


Figure 3: Lateral projection of the nonselective angiogram of the same dog in figures 1 and 2 taken six seconds after the injection of contrast media into the jugular vein. Contrast media is seen in the left atrium, 1, left ventricle, 2, and aortic arch, 3. Notice the post-stenotic dilatation of the aorta, 4, is wider than the sinus of Valsalva, 5.

Don Connor photo

Dr. Berrier retires

Dr. Harry H. Berrier (right) and his wife, Lina (center), chat with well-wishers August 31 on the eve of Dr. Berrier's retirement. The College hosted a reception for Dr. Berrier, who became an associate professor emeritus of pathology after 47 years at the University of Missouri.

Faculty members elected to national offices

Dr. Ron Elmore is the new president-elect of the American Veterinary Computer Society. An associate professor of veterinay medicine and surgery at the College, Dr. Elmore also serves as interim associate dean for research and graduate studies. He was elected to his new post during the American Veterinary Medical Association convention last summer.

Dr. James Thorne, the College's continuing education director, was elected vice president of the American Board of Veterinary Practitioners during the AVMA convention. He also was named chairman of the ABVP examination committee.

Dr. Robert B. Miller, associate professor of veterinary medicine and surgery, has been elected to the ABVP Council of Regents and will serve as chairman of the ABVP food animal examination subcommittee.

Three become Diplomates

Three College faculty members in the department of veterinary medicine and surgery have achieved Diplomate status in their respective specialty boards.

Dr. Everett Aronson, assistant professor, passed his certifying exam of the American College of Veterinary Radiology.

Dr. Jennifer Balke, research associate, and Dr. Terry Blanchard, assistant professor, have been certified by the American College of Theriogenology.

Pitman-Moore donates AAHA programs to library

Slide-tape programs and television cassette programs presented at the 1982 annual meeting of the American Animal Hospital Association are available for autotutorial study in the College's Veterinary Medical Library.

The 10 slide-tape presentations and 10 television cassettes were donated to the College by Pitman-Moore Inc.

Slide-tape programs include:

"Surgical Repair of Collapsed Trachea in the Dog" by Drs. H.P. Hobson and C.H. Tangner of Texas A&M University.

"Anatomy of the Dog Iridocorneal Angle" by Dr. M. Wyman of Ohio State University.

"Polyuric-Polydipsic States in the Dog" by Dr. G. Grauer of Colorado State University.

"The Neurological Examination in Spinal Cord Disease" by Dr. A. Shores.

"Cyclo-Cryosurgery for Glaucoma" by Drs. A.H. Brightman, W.A. Vestre, and L.C. Helper of the University of Illinois.

"Canine Ehrlichiosis" by Dr. M. Dunbar Jr. of Texas A&M University.

"DMSO—Mode of Action, Pharmacology and Indications in Veterinary Medicine" by Drs. S. Jacobs of Portland, Oregon, R. Herschler of Los Altos, California, and R.P. Knowles of Miami, Florida.

"Feline Taurine Deficiency Retinopathy" by Dr. S.M. Roberts of Colorado State University.

"Animal Technician Necropsy Procedure for Small Animals" by Dr. B. Ward of Mississippi State University.

"Liver Biopsy Techniques Using Tru-Cut Needles in the Dog and Cat" by Dr. R.B. Ford of Purdue University.

The video programs include:

"Managing the Seizure Patient" by Dr. W. Fenner of Ohio State University.

"Reduction and Stabilization of a Femoral Fracture Using Pin and Wire" by Dr. D.M. McCurnin of Colorado State University.

"Descenting the Ferret" by Dr. J.E. Creed of Colorado State University.

"What's Your Diagnosis? Case 2" by Drs. O.F. Roesel and A.R. Allen of Purdue University.

"Parotid Duct Transposition in the Dog" by Drs. R.L. Leighton and D.D. Fleming of the University of California-Davis.

"Large Bore Chest Tube Placement in the Dog" by Drs. D.T. Crowe and D.E. Bjorling of the University of Georgia.

"Perineal Urethrostomy in the Male Cat" by Dr. D.T. Crowe of the University of Georgia.

"Principles of Cerclage Wire" by Dr. G. Rouse of Colorado State University.

"Collection of Cancellous Bone Autograft" by Dr. J.E. Creed of Colorado State University.

"Transarticular Pinning of Coxofemoral Luxation" by Dr. G. Rouse of Colorado State University.

Microbiology professor visits Thailand as advisor

Dr. C. A. Carson, professor and chairman of the College's department of veterinary microbiology, recently spent six weeks traveling in Thailand with a four-man investigative team assembled by Winrock International to define constraints to food and draft animal production. Existing animal health programs also were evaluated. The team's findings will serve as resource material upon which a $40 million, five-year contract between the U.S. Agency for International Development (USAID) and the royal Thai government will be based. The project, called the Rainfed Agricultural Intensification (RAI) Program, will address compounding problems of the small landholder. Population increases have reduced the amount of land available to sustain rural families and there is an apparent need to intensify farming methods and improve soil productivity. Components of the program, in addition to the livestock sector, are: agricultural extension, applied crop research, soil and water conservation, livestock management and training and integration of Thai government service programs with agricultural research in universities.

The RAI project is directed largely toward northeastern Thailand since 60 percent of the rural poor and 60 percent of the country's buffalo and cattle are located there. Much of the land is infertile, irrigation is unavailable and villagers are in a subsistance mode, producing little beyond sustaining rations with virtually no money to make purchases. To compound this problem, the small landholder's married children are moving onto the family farm so that the original small parcel of land now must support multiple families. Dr. Carson says that the options are few: existing land must be farmed more intensively, replacing lost nutrients in turn; farming methods and technology could be improved; or crop/animal systems may be integrated with respect to regional situations.

Initially, the livestock team met with the USAID/Bangkok Mission staff and then joined Thai counterparts as they began nearly a month of travel throughout the northeastern and northern regions of the country. The team visited diagnostic laboratories, a draft elephant training center, buffalo breeding farms, government experiment stations, artificial insemination units, the federal vaccine production plant and numerous villages, many in areas of extreme poverty.

Dr. Carson says losses to animal disease in Thailand should diminish markedly with improved husbandry and management practices, parasite and infectious disease control and strong diagnostic, extension and regulatory functions. He adds that animals are integral parts of Thai daily life, tradition and culture. Water (swamp) buffalo, used for plowing rice paddies, are considered virtual pets. Currently the villagers have a great need for more quality buffalo bulls, especially where use of artificial insemination is logistically difficult due to remote location. Cattle to a lesser extent also are used for draft and elephants, though present in reduced numbers, are still important for logging in the jungle areas of the north.

The USAID project will complement ongoing Thai programs sponsored by the World Bank, Asian Development Bank and the German, Japanese and Danish governments. Dr. Carson feels the University of Missouri is particularly able to deal with the complexity of Thai agricultural needs due to the Columbia campus' diversity of disciplines already collaborating freely. He expects the Colleges of Agriculture and Veterinary Medicine to submit a proposal addressing each area of the contract, which is scheduled to begin in mid-1983.

Referral cases needed for drug evaluation

Dr. Dudley McCaw and Dr. Allen Hahn are evaluating a new drug for canine cardiomyopathy and atrial fibrillation. Improved survival time and better control of the arrhythmias will be evaluated. Referral of these cases would be appreciated. For information contact Dr. McCaw at (314) 882-2846.

Dr. Leslie Murphy dies

Dr. Leslie Carlton Murphy, an emeritus professor and associate dean at the University of Missouri-Columbia College of Veterinary Medicine, died of cancer July 28 in a Columbia hospital. He was 69.

Dr. Murphy, a native of Mercer, N.D., received his B.S. in bacteriology and his D.V.M. degree from Washington State University. He conducted postdoctoral research at the Rockefeller Institute for Medical Research in New York.

His 24-year career as a research veterinarian in the U.S. Army Veterinary Corps included assignments at the Walter Reed Army Institute of Research, U.S. Army Biological Laboratories at Fort Detrick, Maryland, Brook Army Medical Center in Fort Sam Houston, Texas, and the National Cancer Institute in Washington, D.C., where he served as director of the cancer virology section.

Dr. Murphy retired from the Army with the rank of colonel. He came to the University of Missouri in 1964 as a professor of veterinary microbiology and director of research development at the College. Dr. Murphy was instrumental in developing many of the research programs at the College. He helped obtain funding for College programs from a variety of government and private sources. He was named associate dean for research and graduate studies in 1969 and continued to shape the College's research programs.

When he retired in 1978, Dr. Murphy was awarded emeritus status as associate dean and professor.

Dr. Murphy published numerous papers in his field, neurotropic viral diseases of animals and man and bacterial diseases transmissable from animals to humans. He was a Diplomate of the American College of Veterinary Microbiologists and the American Board of Veterinary Public Health. He also was a Fellow of the New York Academy of Science and held memberships in numerous professional and honorary scientific societies.

Dr. Murphy was active until his illness last spring as a consultant to research programs at the College and in preparing an updated history of the College of Veterinary Medicine.

He is survived by his wife, Ruth; three daughters, Kathy Rile of Edina, Minn., Peggy Ann Barton of Albuquerque, N.M., and Jane Ross of Sherwood, Ark.; two sisters, Alice Krause of Harrington, Wash., and Ruby Murphy of Twin Falls, Idaho; and seven grandchildren.

Services were held August 2 in Columbia. Burial was in Arlington National Cemetery.

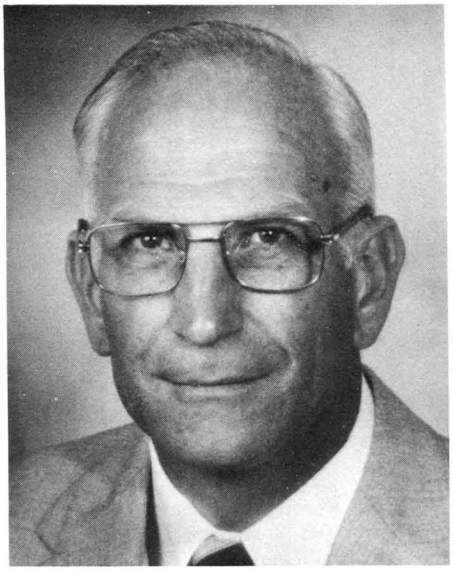
Friends may send memorial contributions to the Dr. and Mrs. Leslie C. Murphy Scholarship Fund at the University of Missouri, in care of Dr. Kenneth Niemeyer, UMC College of Veterinary Medicine, Columbia, Missouri 65211.

Dr. Robert Kahrs to assume College's leadership

Dr. Robert F. Kahrs, a veterinary virologist, has been appointed Dean of the University of Missouri College of Veterinary Medicine. He will begin his tenure in Columbia December 1.

Dr. Kahrs, 52, comes to UMC from the University of Florida College of Veterinary Medicine, where he is chairman of the Department of Preventive Medicine. He also holds appointments in immunology and medical microbiology in the College of Medicine there.

A native of New York, Dr. Kahrs earned his D.V.M. from Cornell University in 1954. He spent seven years in general veterinary practices in rural Interlaken and Attica, New York, before returning to Cornell in 1961 to conduct clinical research on vaccines. While at Cornell, he earned his M.S. and Ph.D. in veterinary virology, and served as assistant and associate professor of epidemiology, and as associate dean for pre-doctoral programs. In 1971, he was honored with the Teacher Recognition Award from the senior veterinary class. He joined the Florida faculty in 1978.



He has taught epidemiology and infectious diseases to veterinary students for more than 17 years. His research interests have centered on development and evaluation of bovine viral vaccines, the effects of viruses on the developing fetus, antibody prevalence surveys, techniques for detecting viruses in semen, and methods for investigating outbreaks of livestock diseases. He is the author of the 1981 book, "Viral Diseases of Cattle," published by Iowa State University Press, as well as more than 60 articles in his research areas.

Dr. Kahrs is a Diplomate of the American College of Veterinary Preventive Medicine and a Fellow of the American College of Epidemiology. He serves on the Council on Biologic and Therapeutic Agents of the American Veterinary Medical Association, and currently is chairman of the U.S. Animal Health Association's Committee on Biologics. He also is a consultant to the U.S. Department of Agriculture's emergency animal disease program, which trains veterinary epidemiologists, in Ames, Iowa.

Dr. Kahrs and his wife, Evelyn, have four grown children.

Datebook

November 4-6. Continuing education workshop: Endoscopy, at the College. For complete information on any continuing education offerings, call (314)882-7848.

November 6. Continuing education workshop: Thoracic Radiology, at the College.

November 11. Continuing education workshop: Caged Bird Management, at the College.

November 11. Visiting lecturer: Dr. Kenneth McEntee of the University of Illinois will speak on "Pathology of the Placenta and Fetus" at 8 p.m. in the College's Teaching Hospital Auditorium.

November 14. Continuing education workshop: Equine Reproduction, at Columbia's Campus Inn.

December 2-3. Continuing education workshop: Surgery Update, at the College.

December 4-8. American Association of Equine Practitioners 28th annual meeting, Atlanta Hilton Hotel, Atlanta, Georgia. For further information, contact Dr. Wayne Kester, Route 5, 22363 Hillcrest Circle, Golden, Colorado 80401.

December 10-11. Continuing education workshop: Ruminant Nutrition, at the College.

January 7-8. Continuing education workshop for small animal hospital technicians, at the College.

January 13. Continuing education workshop: Skin Tumors, at the College.

January 14. Continuing education workshop: Equine Respiratory Problems, at the College.

January 15. Equine Health Day, at the UMC Livestock Pavilion.

January 20. Visiting lecturer: Dr. Bruce Wilkie of the University of Guelph will speak on "Respiratory Immune Response to Microbial Pathogens and Allergens" at 4 p.m. in the College's Teaching Hospital Auditorium.

January 28-30. 91st annual convention of the Missouri Veterinary Medical Association, at Lodge of the Four Seasons, Lake Ozark, Missouri.

Veterinary Medical Review
College of Veterinary Medicine
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