

## Book News

# Introduction to Veterinary Pathology

Second Edition

Norman F. Cheville, DVM, PhD

PUBLICATION DATE: July 23, 1999

FOR IMMEDIATE RELEASE

Abnormalities of structure and function, caused by injury, in cells of nonhuman vertebrate animal species are explained in this textbook by renowned veterinary pathologist Norman F. Cheville. It provides "a framework of basic principles of general pathology and . . . add[s] to this the new knowledge of molecular pathology" in "readable, understandable language for students."

The book is intended for undergraduate and graduate students in veterinary medicine and biology (especially fish and zoology), and medical pathologists with interests in comparative medicine.

*Introduction to Veterinary Pathology*, Second Edition, features:

- Material reviewed by a nine-person editorial board of authoritative educators in the field of general pathology to assure completeness and clarity of substance and structure.
- Clear, easily understood descriptions and explanations.
- "FOCUS" sections that highlight important material for study and easy referral.
- 105 tables, 50 line illustrations, and 143 photographs.
- Instruction in the interaction of disease processes, conveyed through repeated references to fundamental abnormalities.
- Instruction in the ways in which basic pathologic processes complement each other during disease, conveyed through descriptions of well-understood diseases affecting multiple animal species.
- Emphasis on: gross and light microscopic changes; mechanisms responsible for events in disease; and interspecies comparisons.

**ABOUT THE AUTHOR:** Norman F. Cheville, DVM, PhD, is professor and chair, Dept. of Veterinary Pathology, Iowa State University College of Veterinary Medicine, where he continues work on pasteurella toxins and brucellosis. Previously, Dr. Cheville was chief of pathology of the National Animal Disease Center. He has received national and international recognition for his work. His honors include: Outstanding Achievement Award (USDA; 1991), Distinguished Scientist Award (ARS, USDA; 1990), *Doctor Honoris Causa* degree (University of Liege; 1986); and Alumni Merit Award (Iowa State University; 1978). Dr. Cheville also has served as secretary-treasurer and president of the American College of Veterinary Pathologists, president of the Conference of Research Workers in Animal Disease, and editor of the scientific journal *Veterinary Pathology*. He is the author of more than 200 papers and seven books.

520 pp., 7 x 10, illus., hardcover, ISBN 0-8138-2496-6, \$74.95. Available through ISU Press. Prices subject to change without notice. Sixty-day examination copies available to U.S. instructors. Complimentary copies available to reviewers. For more information contact Beverly Fisher, Promotion Coordinator, ext. 624. Visit our Web site at <http://www.isupress.edu>

### Introduction to Veterinary Pathology, Second Edition CD-ROM

This CD-ROM offers an interactive format for study of textbook material. Features include: **Hypertext links** that provide cross-references to related material. **One-hundred full-color photographs** (some shown as black-and-white in the textbook). **Learning assessment quizzes** to measure comprehension of material.

June 1999. Sorry, no examination copies of CD-ROMs. PC platform: ISBN 0-8138-2488-5, \$34.95 • Power Macintosh: ISBN 0-8138-2684-5, \$34.95.

## Abstracts

### Acid-base disorders in milk-fed calves with chronic indigestion

H. Stocker, H. Lutz, C. Kaufmann, P. Rüschi  
*Veterinary Record* (1999) 145, 340-346

Acid-base disorders were investigated in 50 calves with chronic indigestion and metabolic acidosis. In the calves that were unable to stand up, the acidosis was significantly more severe than in the calves that could stand up. The anion gap and four different components of the base excess were calculated by the method described by Fencl. The anion gap was high in more than half of the calves, and it was significantly associated with the base excess due to unidentified anions. How-

ever, in seven of the calves, the excess of unidentified anions would not have been detected without the calculations, which made it possible to measure the effect of sodium, chloride, plasma protein and unidentified anions on the acid-base balance. Twenty-four of the calves had a combination of hyperchloraemic and high anion gap metabolic acidosis. Changes in sodium and plasma protein concentrations had a minor impact on the calves' acid-base status.

### Modelling the expected numbers of preclinical and clinical cases of bovine spongiform encephalopathy in Switzerland

M.G. Doherr, D. Heim, M. Vandeveld, R. Fatzer  
*Veterinary Record* (1999) 145, 155-160

The objective of this study was to model the expected numbers of cattle incubating bovine spongiform encephalopathy (BSE) and the numbers of clinical cases of BSE in the Swiss cattle population between 1984 and 2005. The results were compared with the observed number of clinical BSE cases and with the results of a culling and testing scheme on herd mates of cattle with BSE. The age distribution of the Swiss cattle population, the age-at-death distribution of the first 235 BSE cases and exposure information were used to calculate the expected number of infected cattle in each birth cohort and the resulting numbers of clinical cases and

survivors incubating the disease for each year. The model which did not assume any underreporting of cases fitted the observed epidemic curve of clinical cases reasonably well, and predicted that the Swiss BSE epidemic would come to an end between 2003 and 2005. The age of survivors incubating BSE is increasing. The higher than expected incidence of subclinical cases observed in animals from the culling scheme is most probably the result of the heterogeneous distribution of infected animals and affected herds in the population. The results of the model need to be taken into account when designing surveillance and testing schemes for BSE.

### Decreased sedation by xylazine and high blood pressure in cows with BSE

U. Braun, S. Abgottspon, E. Gubler, T. Schweizer  
*Veterinary Record* (1999) 144, 715-717

Fifteen cows with bovine spongiform encephalopathy (BSE) and 90 healthy cows were given xylazine intramuscularly at a dosage of 0.15 mg/kg bodyweight. The onset of sedation and of drooling was recorded, and the heart and respiratory rates and the systolic and diastolic blood pressure were measured every five minutes for 40 minutes. All the healthy cows but only five of the 15 cows with BSE became sedated, and the period between the administration of xylazine and the

onset of sedation was twice as long in the cows with BSE than in the healthy cows (15.0 [7.5] and 7.6 [2.6] minutes). Throughout the observation period, the blood pressure of the cows with BSE was significantly higher than that of the healthy cows, and the blood pressure of the healthy cows, but not of the cows with BSE, decreased significantly towards the end of the observation period.

## Studies on the efficacy of intranasal vaccination for the prevention of experimentally induced parainfluenza type 3 virus pneumonia in calves

D. G. Bryson, B. M. Adair, M. S. McNulty, M. McAliskey, H.E.L. Bradford, G.M. Allan, R.T. Evans, F. Forster  
*Veterinary Record* (1999) 145, 33-39

The efficacy of intranasal vaccination in preventing or limiting disease of the lower respiratory tract induced by parainfluenza 3 (PI3) virus was evaluated under experimental conditions, using a commercially available live vaccine containing a temperature-sensitive strain of PI3 virus. In a preliminary study four colostrum-deprived calves were vaccinated intranasally at one week and again at two months of age, and two similar calves were given an intranasal placebo. After the second vaccination serum antibodies to PI3 virus were detected in all four vaccinated calves, but not in the control animals. Seventeen days after the second vaccination all six calves were challenged with virulent PI3 virus, and they were killed six days later. The clinical scores and the extent of pulmonary consolidation were reduced in the vaccinated animals; PI3 virus was detected in the upper and lower respiratory tract of the

control calves but in none of the vaccinated calves. In a larger scale study with 14 colostrum-fed calves, seven were vaccinated at one week and again at five weeks of age, and seven were given an intranasal placebo. Two weeks after the second vaccination all 14 calves were challenged with virulent PI3 virus. The clinical scores and lung consolidation were significantly reduced in the vaccinated calves in comparison with the controls. Six days after infection, 10 of the 14 calves were killed; PI3 virus was detectable in the nasal secretions of all seven control calves but in only one of the vaccinated animals, and PI3 viral antigen was detected in the lungs of the control calves but not in those of the vaccinated animals. One of the vaccinated calves had developed a severe clinical response after the challenge, but it had only minor lung consolidation when killed.

## Non-invasive assessment of arterial haemoglobin oxygen saturation in cattle by pulse oximetry

J. Coghe, Ch. Uystepuyst, F. Bureau, P. Lekeux  
*Veterinary Record* (1999) 145, 666-669

The aim of this study was to evaluate the practicality and accuracy of different attachment sites for the optodes of a pulse oximeter (measuring arterial haemoglobin oxygen saturation) in healthy cattle, and to assess the accuracy of pulse oximetry in diseased cattle with low haemoglobin oxygen saturation values caused by respiratory disease. The tail, the nasal septum and the genital mucosa of females provided a continuous, stable and intense signal. The smallest bias, and no significant difference between measurements of arterial haemoglobin (mSpO<sub>2</sub>) with the pulse oximeter and

measurements of arterial haemoglobin oxygen saturation (SaO<sub>2</sub>) with a blood gas analyser was obtained when the probe was attached to the tail. This site was used to evaluate the accuracy of pulse oximetry in animals with respiratory disease. There was a small bias between the measurements of SaO<sub>2</sub> and mSpO<sub>2</sub>, with a tendency for pulse oximetry to underestimate higher values and to overestimate lower values. The precision of pulse oximetry decreased substantially with the values for SaO<sub>2</sub> <80 percent, which lies outside the clinically relevant range.

## Effects on cattle of transportation by road for up to 31 hours

T.G. Knowles, P.D. Warriss, S.N. Brown, J.E. Edwards  
*Veterinary Record* (1999) 145, 575-582

The physiological and behavioural effects on cattle of transporting them for periods of 14, 21, 26 and 31 hours, including a stop for a rest and drink on the lorry after 14 hours, were studied in 120 transported animals and 48 control animals. The physiological measurements indicated that a journey lasting 31 hours was not excessively physically demanding, but many of the animals chose to lie down after approximately 24 hours. The

animals that lay down had higher plasma cortisol levels than those that remained standing. Many animals chose not to drink during the rest stop. Physiological measurements made after the journeys indicated that 24 hours in lairage, with hay and wate freely available, allowed the animals to recover substantially, although not completely, irrespective of the journey time.