Preface: Update: Small Animal Pediatrics

Autumn P. Davidson

Neonatal Resuscitation: Improving the Outcome

Autumn P. Davidson

Prudent veterinary intervention in the prenatal, parturient, and postpartum periods can increase neonatal survival by controlling or eliminating factors contributing to puppy morbidity and mortality. Postresuscitation or within the first 24 hours of a natural delivery, a complete physical examination should be performed by a veterinarian, technician, or knowledgeable breeder. Adequate ingestion of colostrum must occur promptly (within 24 hours) postpartum for puppies and kittens to acquire passive immunity.

Pediatric Clinical Pathology

Benita von Dehn

This article provides clinically relevant and applicable information about normal biochemical values in puppies and kittens younger than 6 months, and is intended to provide practical guidelines for the interpretation of serum biochemical results in these young animals. At present there are no published sets of normal hematologic reference ranges for mixed-breed puppies and kittens younger than 6 months. Reference-value sets for closed research colonies composed of a few selected breeds are available, which help to provide insight into trends in normal hematologic and biochemical values for puppies and kittens.

Pros, Cons, and Techniques of Pediatric Neutering

Margaret V. Root Kustritz

Pediatric gonadectomy is most commonly performed by humane organizations as a means of population control. Benefits and detriments of gonadectomy are reviewed, with special attention to literature describing effects specific to age at gonadectomy. Techniques for pediatric anesthesia and surgery are reviewed.

2013 Update on Current Vaccination Strategies in Puppies and Kittens

Gina M. Davis-Wurzler

Vaccines remain one of the practitioner’s greatest tools in preventing disease and maintaining individual and population health. This article is an update to “Current Vaccination Strategies in Puppies and Kittens” published in Veterinary Clinics of North America, Small Animal Practitioner, in May 2006. There are now comprehensive guidelines readily available for small animal practitioners regarding canine and feline pediatric (and adult) vaccination recommendations. Perhaps more importantly, there is an increased dialogue regarding all aspects of preventive medicine,
of which vaccination is only a small, yet significant portion; and an increased drive to provide scientific evidence for developing vaccination recommendations.

**Pediatric Nutrition**  
Deborah S. Greco

This article discusses pediatric nutrition in puppies and kittens. Supplementation of basic nutrients such as fat, protein, minerals, vitamins, and essential fatty acids of the bitch is essential for the proper growth and development of puppies during the lactation period. Milk replacers are compared for use in puppies and kittens. Supplements such as colostrum and probiotics for promotion of a healthy immune system and prevention or treatment of stress-induced and weaning diarrhea are also discussed.

**Pediatric Seizure Disorders in Dogs and Cats**  
James A. Lavely

Seizure disorders in young animals pose different considerations as to cause and therapeutic decisions compared with adult animals. Infectious diseases of the nervous system are more likely in puppies and kittens compared with adults. The diagnosis of canine distemper is often based on clinical signs. Idiopathic epilepsy typically occurs in dogs between 1 and 5 years of age; however, inflammatory brain diseases such as necrotizing encephalitis and granulomatous meningoencephalomyelitis also commonly occur in young to middle-aged small-breed dogs. The choice of which anticonvulsant to administer for maintenance therapy is tailored to each individual patient.

**Canine Pediatric Dentistry**  
Amy J. Fulton, Nadine Fiani, and Frank J.M. Verstraete

The oral examination is an important part of the physical examination of every patient. In neonate and adolescent dogs, it is important to inspect the oral cavity for congenital and acquired dental and oral pathology. This article reviews the more common pediatric and juvenile dental anomalies that affect dogs in order to provide a resource for the basic understanding of the oral cavity in these patients.

**Successful Management Permitting Delayed Operative Revision of Cleft Palate in a Labrador Retriever**  
Autumn P. Davidson, Clare Gregory, and Patricia Dedrick

Congenital palate defects (CP) occur in dogs. Secondary cleft palate (SCP) is a congenital oronasal fistula resulting in incomplete closure of the hard and soft palate. SCP occurs alone or in combination with primary cleft palate involving the lip and premaxilla. CP results from incomplete fusion of the palatine shelves, most critical at 25 to 28 days gestation. Methods to improve survival of puppies with CP are sought by clients. This case report illustrates a successful method to manage nutrition in affected dogs until adult size is attained, facilitating surgical correction.
Pediatric Feline Upper Respiratory Disease

Jane E. Sykes

Infectious feline upper respiratory tract disease (URTD) continues to be a widespread and important cause of morbidity and mortality in kittens. Multiple pathogens can contribute to URTD in kittens, and coinfections are common in overcrowded environments and contribute to increased disease severity. Worldwide, the most prevalent pathogens are feline herpesvirus-1 and feline calicivirus. Primary bacterial causes of URTD in cats include Bordetella bronchiseptica, Chlamydia felis, and Mycoplasma species. Streptococcus canis and Streptococcus equi subspecies zooepidemicus occasionally play a role as primary pathogens in shelter situations and catteries. This article reviews the major causes of disease in kittens, and provides an update on treatment and prevention strategies.

Diagnosis and Management of Urinary Ectopia

Autumn P. Davidson and Jodi L. Westropp

A video of laser revision of ectopic ureter accompanies this article

Ectopic ureters are the most common cause of urinary incontinence in young dogs but should be considered as a differential in any incontinent dog for which the history is not known. Ectopic ureters can be diagnosed with excretory urography, fluoroscopic urethrography or ureterography, abdominal ultrasonography, cystoscopy, helical computed tomography, or a combination of these diagnostic procedures. Other congenital abnormalities can also occur in dogs with ectopic ureters, including renal agenesis or dysplasia, hydronephrosis, and/or hydroureter and vestibulovaginal anomalies; therefore, the entire urinary system must be evaluated with ultrasonography if cystoscopy is the only other diagnostic tool used before surgery. Novel surgical techniques and adjunctive medical management have improved the prognosis for dogs with urinary ectopia.

Holistic Pediatric Veterinary Medicine

Lisa Pesch

Holistic veterinary medicine treats the whole patient including all physical and behavioral signs. The root cause of disease is treated at the same time as accompanying clinical signs. Herbal and nutritional supplements can help support tissue healing and proper organ functioning, thereby reducing the tendency of disease progression over time. Proper selection of homeopathic remedies is based on detailed evaluation of clinical signs. Herbal medicines are selected based on organ(s) affected and the physiologic nature of the imbalance. Many herbal and nutraceutical companies provide support for veterinarians, assisting with proper formula selection, dosing, drug interactions, and contraindications.