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Managing the Reproductive Cycle in the Bitch 423
Margaret V. Root Kustritz

The canine estrous cycle is discussed with special emphasis on endocrinology. Breeding management and chemical and management strategies for estrus induction and suppression are described.

Clinical Techniques of Artificial Insemination in Dogs 439
Chelsea L. Makloski

This article provides an overview of the current breeding techniques used in small animal reproduction today with an emphasis on artificial insemination techniques such as transvaginal and transcervical insemination as well as surgical deposition of semen in the uterus and oviduct. Breeding management and ovulation timing will be mentioned but are discussed in further detail in another article in this issue.

Current Advances in Gestation and Parturition in Cats and Dogs 445
Catherine G. Lamm and Chelsea L. Makloski

This article provides an overview of pregnancy in the bitch and queen. Emphasis will be placed on pregnancy diagnosis, monitoring pregnancy, and prevention of fetal loss and maternal morbidity.

Clinical Approaches to Infertility in the Bitch 457
Robyn R. Wilborn and Herris S. Maxwell

When presented with the apparently infertile bitch, the practitioner must sort through a myriad of facts, historical events, and diagnostic tests to uncover the etiology of the problem. Many bitches that present for infertility are reproducively normal and are able to conceive with appropriate intervention and breeding management. An algorithmic approach is helpful in cases of infertility, where simple questions lead to the next appropriate step. Most bitches can be categorized as either cyclic or acyclic, and then further classified based on historical data and diagnostic testing. Each female has a unique set of circumstances that can affect her reproductive potential. By utilizing all available information and a logical approach, the clinician can narrow the list of differentials and reach a diagnosis more quickly.
The Problem Stud Dog
Cheryl Lopate

When presented with a dog for infertility examination, a complete history, physical examination, and semen evaluation should be completed. Abnormalities of the spermiogram should be documented and differential diagnoses determined. Potential causes of infertility include prostatic, testicular, epididymal, scrotal, vascular, neoplastic, traumatic, infectious, endocrine and autoimmune diseases. Failure to breed and ejaculatory disorders may also play a role. This article reviews the diagnostic work-up, differentials, and treatments for infertility in stud dogs.

Guide to Emergency Interception During Parturition in the Dog and Cat
Frances O. Smith

Clinicians in private practice, specialty practice, and emergency clinic settings are likely to be presented with bitches and queens with parturition emergencies. Parameters for the identification of dystocia include prolonged parturition, collapse of the dam, abnormal vaginal discharge, prolonged labor, prolonged interval between delivery of neonates, uterine inertia, malpresentation of the fetus, and large litter sizes. Methods for the diagnosis of dystocia are discussed. Resolution of parturition emergencies may be achieved through manipulative, medical, or surgical methods, although the great percentage of dystocia will require surgical intervention. Techniques for medical and surgical interception are discussed.

Clinical Approach to Abortion, Stillbirth, and Neonatal Death in Dogs and Cats
Catherine G. Lamm and Bradley L. Njaa

This article reviews post-mortem examination, sample collection, and diagnostic procedures used to determine the cause of abortion, stillbirth, and neonatal death in dogs and cats.

Disorders of Sexual Development in Dogs and Cats
Bruce W. Christensen

Determination of a mammal’s sex begins at conception with the establishment of genotype and continues from there as the expression of specific genes directs the bipotential gonad to develop. The gonad further directs the sexual differentiation of the individual. Deviations from either of these pathways at any stage results in disorders of sexual development. Definitive diagnosis minimally requires a karyotype, histopathologic evaluation of the gonads, and gross description of the genital anatomy, with more complete diagnostic answers achieved through other diagnostic tests. This article covers normal and abnormal development of the reproductive organs with emphasis on diagnosis and treatment.
Common Lesions in the Male Reproductive Tract of Cats and Dogs  527

Robert A. Foster

This article provides an overview of the lesions of the male genital tract of the dog and cat and covers those common diseases that affect the scrotal contents including testis and epididymis, the accessory genital glands especially the prostate, and the penis and prepuce. The majority of lesions of the male reproductive tract of cats and dogs are reported in dogs, and this is reflected in the number and types of diseases listed here. The author will attempt to balance simple with dramatic lesions and will start with the penis and prepuce, where lesions are seen more commonly.

Common Lesions in the Female Reproductive Tract of Dogs and Cats  547

Antonio Ortega-Pacheco, Eduardo Gutiérrez-Blanco, and Matilde Jiménez-Coello

Reproductive lesions are commonly seen in small animal practice. Lesions in the ovaries, uterus, and vagina may seriously influence normal reproductive capacity of dogs and cats and may put at risk the general health of the patients. The objective of this article is to give the veterinary practitioner a current and concise guide to the clinical signs, intraoperative changes, diagnosis, and treatment/management of lesions in the reproductive tract of the bitch and queen commonly seen in practice.

Bacterial Reproductive Pathogens of Cats and Dogs  561

Elizabeth M. Graham and David J. Taylor

With the notable exception of Brucella canis, exogenous bacterial pathogens are uncommon causes of reproductive disease in cats and dogs. Most bacterial reproductive infections are endogenous, and predisposing factors for infection are important. This article reviews the etiology, pathogenesis, clinical presentation, diagnosis, treatment, and public health significance of bacterial reproductive pathogens in cats and dogs.

Viral Reproductive Pathogens of Dogs and Cats  583

Nicola Decaro, Leland E. Carmichael, and Canio Buonavoglia

This article reviews the current literature on the viral agents that cause reproductive failures in domestic carnivores (dogs and cats). A meaningful update is provided on the etiologic, clinical, pathologic, diagnostic, and prophylactic aspects of the viral infections impacting canine and feline reproduction as a consequence of either direct virus replication or severe debilitation of pregnant animals.

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