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Preface **xi**

David E. Anderson and Matt. D. Miesner

Ruminant Field Anesthesia **429**

Eric. J. Abrahamsen

Ruminants can be safely anesthetized in a field setting. The higher level of analgesia provided by anesthesia eliminates the need for local anesthetic blockade, which can prove useful when a procedure is expected to produce a substantial level of pain or local anesthetic blockade is not feasible. Certain aspects of anesthesia place the patient at greater risk than chemical restraint techniques. Knowledge and vigilance reduce the additional risks associated with anesthesia.

Development of Teaser Bulls Under Field Conditions **443**

Gregor L. Morgan and Lionel J. Dawson

A teaser bull is a term describing a bull whose reproductive system has been surgically altered to render him sterile. The purpose of such bulls is to aid in detection of cows in estrus to facilitate when to artificially inseminate. The bull is sterilized by either vasectomy or caudal epididymectomy. In addition to sterilization, other surgical options are described that prevent intromission and the spread of venereal disease. This article describes briefly some of those options. The procedures described are those preferred by the authors and can be performed in the field. Some of the pros and cons of these procedures are discussed.

Surgery of Obstructive Urolithiasis in Ruminants **455**

Jennifer M. Ewoldt, Meredyth L. Jones, and Matt D. Miesner

Most cases of obstructive urolithiasis will require surgical intervention at some point during the treatment process. Fluid, anti-inflammatory, antibiotic, and acidifying therapies should be used in support of surgical intervention. Surgical technique may be chosen based on the characteristics of the individual case, including site of obstruction, location of the rupture, and value of the animal. Prevention remains the mainstay of urolithiasis management. Identification of a case of obstructive urolithiasis should trigger action for the affected individual and the entire herd or flock of origin.

Umbilical Surgery in Calves 467

Aubrey N. Baird

Calves benefiting from umbilical surgery can be affected by several different conditions. However, the practitioner should be able to correct any of these conditions surgically, especially in young calves, as a field procedure. Like other aspects of veterinary practice, the individual must decide what services he/she wishes to offer clients in the field or clinic setting and which ones will be referred. The objective of this article is to equip practitioners who wish to treat umbilical masses surgically with the information they need.

Surgery of the Bovine Large Intestine 479

Mireille Meylan

Cecal dilatation in cows and large intestinal atresia in neonatal calves are the most important diseases of the bovine large intestine amenable to surgical correction under field conditions. Clinical symptoms, diagnostic steps, surgical and medical treatment, etiopathogenesis, and prognosis are discussed. Surgery for correction of cecal dilatation, with and without retroflexion or torsion, can be performed under field conditions. In contrast, only anal reconstruction after atresia ani or colostomy in the case of atresia coli are amenable to field surgery; more complicated bypass procedures with anastomosis for atresia coli are best performed in hospital settings. Correcting intestinal atresia is not recommended because of animal welfare and breeding hygiene issues; it should be undertaken for salvage purposes only.

Unilateral Nephrectomy of Cattle 497

Matt D. Miesner and David E. Anderson

Renal disease is occasionally diagnosed in cattle. Most often, renal disease is bilateral and medical therapy is the treatment of choice. Nephrectomy may be performed in selected cases where a single kidney is primarily involved and medical therapy is unsuccessful. This surgery can be performed under field settings, and these cattle can remain productive members of the herd.

Surgical Procedures of the Thorax 501

David E. Anderson and Guy St. Jean

Thoracic disease is common in cattle and is a significant cause for economic losses in the stocker and feedlot industries. In most cases, economic constraints limit diagnostic investigation and affect treatment options. Although medical management is, by far, the most appropriate therapeutic intervention in such cases, surgical management of some respiratory diseases can allow for profitable return to productivity. Surgical procedures of the thorax most often involve thoracotomy or pericardiotomy. Tracheal reconstruction and invasion of the mediastinum are rarely indicated in cattle.

Physiologic Mastectomy via Flank Laparotomy 511

Andrew J. Allen, George M. Barrington, and Steve M. Parish

Physiologic mastectomy can be used as a salvage procedure in cases of chronic suppurative mastitis, gangrenous mastitis, or chronic, severe mastitis associated with organisms liberating endotoxin or exotoxin. The surgical technique involves ligation of the major arterial blood supply (external pudendal artery) to the corresponding half of the mammary gland, which results in decreased systemic absorption of toxins and gland atrophy. The technique is performed with the cow standing, and it is relatively atraumatic. This procedure is a simple, yet effective alternative to radical mastectomy for unresponsive mastitis cases in genetically or otherwise valuable cattle.

Bovine Surgery of the Skin 517

Matt D. Miesner

Occasionally, the bovine practitioner is presented situations requiring application of techniques regarding wound repair and healing. Less commonly encountered in bovine practice than equine practice for example, principles and management of traumatic wound healing should be regarded as similar. Frequently, bovine practitioners need to apply knowledge of healing principles when wounds are surgically induced during horn and mass removal. Consideration of surgical approach, tension-relieving techniques, and dermal transposition flaps (see the ocular surgery article by Schulz in this issue) can be applied effectively in bovine practice.

Field Surgery of the Eye and Para-Orbital Tissues 527

Kara Schulz

Ocular disease and injury remain a common occurrence in cattle. In many instances medical management is sufficient for resolution and amelioration of clinical signs. In selected cases, surgical intervention is required. Fortunately, field surgery remains a viable option for most cases of bovine ocular disease. While the surgical techniques are not new, thorough physical examination, proper preparation of the patient, appropriate perioperative management, and good surgical technique will assure the best results possible.

Surgical Diseases and Techniques of the Digit 535

André Desrochers, David E. Anderson, and Guy St. Jean

Claw diseases in cattle are common under field conditions. Sole ulcer, sole abscess, foot-rot, digital dermatitis, and interdigital dermatitis are frequently diagnosed and treated by owners, foot trimmers, and veterinarians. Most digital surgical conditions are manageable in field conditions; however, some postoperative care is more demanding and, therefore, prevents some veterinarians from performing such techniques in field conditions. Even if most techniques are easy to perform, nevertheless surgical decision making, perioperative treatment, and pain management can be more challenging than the technique itself.

Management of Tendon Disorders in Cattle **551**

David E. Anderson, André Desrochers, and Guy St. Jean

This article describes tendon disorders in cattle and treatments for such disorders. Tendon injuries causing loss of a production animal or a decreased level of production result in significant economic loss to the cattle producer. Tendon disorders may be congenital or acquired. Congenital abnormalities may include tendon laxity, contracted tendons, or tendon displacement. Acquired tendon disorders may include tendon laxity, contracture, luxation, tendinitis, laceration, avulsion, rupture, and tenosynovitis.

Management of Fractures in Field Settings **567**

David E. Anderson and Guy St. Jean

Limb fractures are common in farm animals, are most commonly found in young stock, and often occur subsequent to trauma during dystocia or handling. Cattle are excellent patients for treatment of orthopedic injuries because they spend a majority of time lying down, have a tremendous potential for bone healing, are more resistant than other animals to contralateral limb breakdown and stress laminitis, and usually do not resist having orthopedic devices on their limbs. This article describes management of fractures, especially for cattle, in field settings; explains how the principles of external skeletal fixation are adapted for cattle; discusses the application of external skeletal fixation to individual bones, and reviews potential complications in the use of external skeletal fixation.

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