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Prepping for Surgery

Few people relish the idea of going under the knife. Even the most minor of surgical procedures, such as getting a wisdom tooth extracted, may elicit a certain amount of trepidation. After all, surgery is risky. Insufficient anesthesia and the patient may experience intraoperative pain—but too much may be life threatening. Even after a successful surgery, there remains the risk of infection, and in the case of transplantation surgery, the possibility of organ rejection.

But, whether the patient is a human or animal, a surgical team that works in a properly designed surgical suite with the appropriate equipment, while following optimized procedures, certainly helps to mitigate those risks. In this issue, we take a broad look at laboratory animal surgery with a series of articles that outline the key considerations for designing, equipping, and maintaining a surgical suite, as well as two features that take a closer look at improving the quality of care provided in the preparation for and execution of specific surgical procedures.

The first step in developing an efficient laboratory animal surgery program is the design and construction of a suitable surgical suite, which includes all of the necessary functional areas. Authors Talcott and Corey (p. 28) present a synopsis of the critical things to consider when planning and assembling a new facility.

The next step in the process is equipping the surgical facility with all of the equipment and supplies needed for the procedures that the investigators will be conducting. Authors Bergdall and Greene provide an overview of the basic types of equipment that will be needed, along with a list of suppliers (p. 35).

In the end, even the best layout and equipment will be wasted without efficient day-to-day management of the facility. Authors Lewis and Talcott (p. 39) discuss the importance of developing effective standard operating procedures and scheduling routine facility maintenance and sanitization processes, while also highlighting the pivotal role of the surgical technician in managing the daily workings of the facility.

Authors Rousseau *et al.* (p. 43) present an example of a refinement of a surgical procedure in rats. By taking advantage of particular characteristics of the rat's anatomy, they developed a technique for exposing the rat's lumbar intervertebral discs, eliminating peri- and postoperative complications that had previously plagued the use of this model for lumbar disc disease research.

Finally, the case study presented in this month's 'What's Your Diagnosis?' involves the investigation of the puzzling deaths of rats during or shortly after an eye surgery procedure. But for more on that, you'll have to turn to p. 22.