

Principles of Intestinal Surgery

Caroline Prymak BVSc(Hons), CertVR, MBA, MRCVS, DSAS, DipACVS, DipECVS

Diplomat, American and European Colleges of Veterinary Surgeons

RCVS Specialist in Small Animal Surgery

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Surgery of the large and small intestine is commonly performed in small animal practice for a variety of lesions. A thorough history, physical examination, and radiographic study are important diagnostic steps. Peritoneal lavage is indicated with suspected peritonitis secondary to intestinal perforation or anastomotic leakage. Animals with surgical intestinal disorders often present with fluid deficits and electrolyte abnormalities due to vomiting, diarrhoea and loss of fluid into distended bowel (third space compartment). Pre, peri and post-operative fluid support is often essential in the successful management of these cases.

Antibiotic therapy is indicated when there is suspected vascular damage to the intestines from vascular occlusion. This may occur with foreign bodies, intussusception, and strangulated bowel. Tumours of the bowel can also result in ischaemia of the affected bowel together with ulceration of the mucosal surface. Loss of the normal mucosal lining predisposes to bacterial translocation and potential septicaemia. Antibiotic therapy is also indicated when there is extensive bacterial contamination during surgery.

Assessment of the viability of a segment of intestine may be difficult. Important clinical criteria include colour, arterial pulsations, peristalsis and bowel wall thickness. Sophisticated techniques with fluorescein dye and Doppler ultrasonic flow probes may provide additional information but do not substitute for good clinical judgement.

A wide variety of suture materials have been used successfully in intestinal surgery. The choice is often the surgeon's preference as the ideal suture does not exist. Surgeons must therefore choose a suture material which most closely approximates the ideal for a given procedure and tissue to be sutured. Absorbable sutures are generally recommended in intestinal surgery to prevent tissue retention of foreign material after healing which may predispose towards persistent infection and fistulation. Characteristics of a suture material which should be assessed prior to use in intestinal surgery include: tensile strength, rate of absorption, knot security, tissue drag, reactivity, flexibility and capillarity.

The surgical literature is replete with studies evaluating and comparing various techniques for intestinal anastomosis. An end to end approximating pattern is recommended for small intestinal surgery as it has been shown to most accurately realign cut layers of the intestinal wall and to minimize the possibility of luminal reduction. Everting techniques significantly delay the healing process. Due to the increased width of colon, increased bacterial load, and delayed healing of colonic incisions a two layer closure pattern may be used. A full thickness appositional pattern followed by a second reinforcing row of inverted sutures is commonly recommended.

The most significant post-operative complication after intestinal surgery is infection due to contamination from the surgical procedure or from leakage at the surgical site. Biological factors that affect this include vascular supply to the anastomotic site, nutritional and metabolic status of the patient and surgical technique. Omental wrapping and serosal patching are surgical techniques that can be used to reduce the incidence of anastomotic leaks. These techniques will be discussed.

Questions regarding this or on any other veterinary related matter must be discussed with your veterinary surgeon. The information contained herein is of a general nature only and may not relate to the specific conditions exhibited by your pet. Specifics of each case must be discussed with your veterinary surgeon. For further information, fact-sheets for clients and articles for veterinary surgeons, contact <http://members.aol.com/opvet>