DIMENSIONS IN SURGERY

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Dimensions in Surgery is now in its 17th year!

Surgical Case Report:

Partial Gastrectomy

EMPHASIS:

In the dog, there are several indications for a partial gastrectomy. Devitalization of the region of the greater curvature in GDV cases is common; gastric neoplasia or gastric ulcers are also indications for this procedure.

In a previous Dimensions in Surgery article, we addressed partial gastrectomy in GDV cases. This article will review the technique for partial gastrectomy to treat gastric neoplasia.

PREOPERATIVE DIAGNOSTICS:

1. Complete physical examination.
3. Radiography:
   a. Two-view radiographs of the abdomen.
   b. Positive contrast (or double contrast) gastrography may be indicated in some cases.
AXIOM: If a perforating lesion is suspected, the use of barium is contraindicated. A water-soluble contrast agent should be used in such cases.
4. Two-view thoracic radiographs:
   a. To check for pulmonary metastases.
   b. Abdominal ultrasonography:
      To evaluate the lesion and to check the adjacent lymph nodes and the liver for metastasis.
5. Endoscopy and biopsy.

DANGER:

Be aware that sometimes the tumor is entirely submucosal. In these cases the mucosa is intact, although usually inflamed, and false-negative biopsy results may be seen.

6. Abdominocentesis: if effusion is present.
AXIOM: If the results reveal peritonitis (secondary to perforation of the stomach by the tumor) the prognosis is significantly more guarded.
7. Advanced imaging: CT or MRI can be useful to evaluate the extent of the tumor, and to check for metastases.

PREOPERATIVE CARE:

1. Indwelling cephalic catheter.
2. Intravenous anesthetic induction protocol.
3. Endotracheal intubation and inflate cuff.
4. Isoflurane inhalant anesthesia to effect
5. Lead II ECG and pulse oximetry monitoring during prep and surgery.
6. Clip and prepare the abdomen for aseptic surgery.
7. Cefazolin 20 mg/kg IV immediately preoperatively.

SURGICAL TECHNIQUE:

1. Midline laparotomy, from the xiphoid to the umbilicus.
2. Resect the falciform ligament, to maximize visualization.
3. Place an abdominal retractor.
4. Explore the abdomen, evaluating all organs and the entire gastrointestinal tract from the stomach to the colon.
5. Evaluate the stomach, the adjacent lymph nodes, liver, and biliary system to assess the extent of the tumor.
AXIOM: The majority of adenocarcinomas tend to occur on the lesser curvature (See Figure 1).
6. Determine the extent of resection required.
AXIOM: The most common gastric tumors are adenocarcinoma, leiomyoma/leiomyosarcoma, and lymphosarcoma. Obviously, resection with the widest possible margins is desired. However, if the tumor is so extensive that a partial gastrectomy, cholecystojunostomy, and gastrojejunostomy may be required, then the prognosis is poor. Attempting resection in such cases may not be appropriate.

continued on page 14
7. Ligate the vascular supply to the region (See Figure 2).

8. Through a stab incision in the stomach, aspirate all of the stomach contents.

9. Place an atraumatic forceps across the proximal duodenum, avoiding the pancreas, to prevent reflux of bile into the surgical field.

10. Place stay sutures at the greater and lesser curvature of each end of the stomach which will be preserved, to help manipulate these areas during closure (See Figure 2).

11. Resect the involved tissue.

12. Appose the dorsal margins of the gastric incision, using a Cushing pattern with 3-0 monofilament absorbable material incorporating the serosa, muscularis and submucosa, followed by a similar closure of the mucosal layer (See Figure 3).

AXIOM: Obviously, if the mucosa is closed first it will be difficult to gain access to the other layers for the closure.

13. Similarly, close the ventral margin of the incision, first closing the mucosa and then the serosa/muscular layer/submucosa (See Figure 4).

AXIOM: Depending on the configuration of the incision, GIA, TA or EEA autosuture instrumentation can be used instead of suture for the closure (See Figure 5).


AXIOM: Placement of a jejunostomy tube is indicated in these patients.

POSTOPERATIVE CARE:

1. Pain management as needed using injectable, oral or transdermal analgesics.

2. Offer food 24 hours postop.

3. Feed via jejunostomy tube until voluntary appetite has returned.

4. Antiemetics as needed.
DIMENSIONS IN SURGERY
continued from page 14

5. Suture removal 14 days postoperatively.

PROGNOSIS:
Although the prognosis with malignancy is guarded, many of these patients can be palliated for more than six months even with resection of more than half of the stomach. Leiomyoma and leiomyosarcoma have a more optimistic prognosis: long-term survival is possible with leiomyosarcoma and expected with leiomyoma, after removal.
AUTHOR’S NOTE
If you have any questions concerning this paper, additional references, surgical supplies or sources of products mentioned or used in this protocol, please FAX us at 1-310-479-8976. We will answer your questions promptly.

Coming Attractions
There are numerous indications for lung lobectomy in dogs and cats. Neoplasia, lung lobe torsion, trauma, pneumonia, or foreign bodies may all necessitate removal of a lung lobe.

Next month we shall outline our surgical protocol for lung lobectomy. See you then!

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Figure 5: This schematic drawing depicts the use of the GIA autosuture machine. Once fired the machine sutures both sides of an incision that it cuts simultaneously. 5C) Left side application of GIA autosuture machine. 5D) Right side application of a GIA autosuture machine. 5E) Resection of the gastric neoplasm leaving secure autosutures in situ.