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Belt-Loop Gastropexy for Gastric Dilatation Volvulus

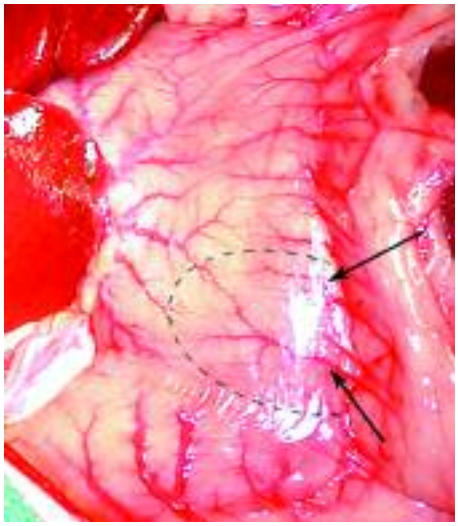
Gastropexy is part of the surgical treatment of gastric dilatation volvulus (GDV) in dogs. If not performed, the rate of recurrence of GDV is as high as 80%.[1]

The procedure creates a permanent adhesion between the pyloric antrum and the right abdominal wall. Several techniques of gastropexy have been described in the literature: incisional,[2] circumcostal,[3] and belt-loop.[4] There are other gastropexy techniques, but each of the techniques mentioned have been shown to be clinically effective and provide sufficient adhesions between the stomach and abdominal walls. The circumcostal is the strongest of the techniques that have been measured, but it is the most technically difficult to perform and the minimal strength required to prevent recurrence of GDV is unknown. The technique I prefer to use for the treatment of GDV is the belt-loop, a straightforward procedure that creates a strong gastropexy.

Prophylactic Gastropexy

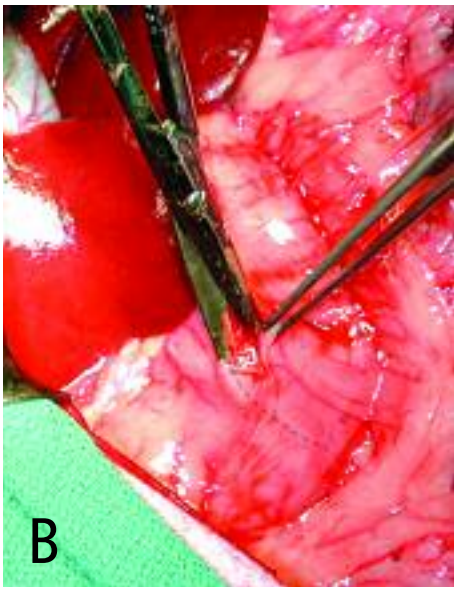
Gastropexy is also recommended as a prophylactic procedure in young animals at risk for the development of GDV. It is becoming increasingly popular due the advancement of minimally invasive surgery in small animal practice. Laparoscopic-assisted gastropexy seems to be the easiest and safest technique for preventive gastropexy in dogs.[5, 6] Several minimally invasive preventive gastropexy techniques have been described.[5-8] Open procedures (such as the one described in this article) can be performed prophylactically if minimally invasive surgery is not an option or when a celiotomy has been made for other reasons.

STEP BY STEP BELT-LOOP GASTROPEXY

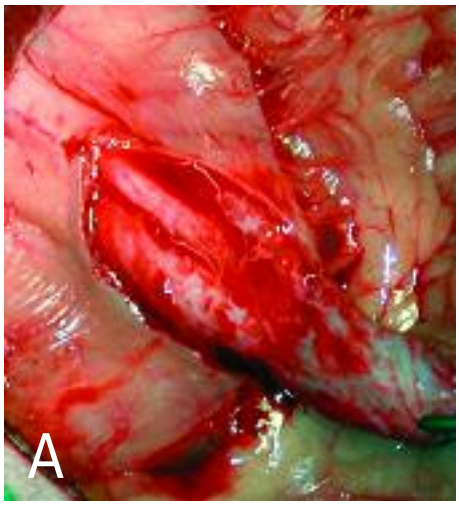


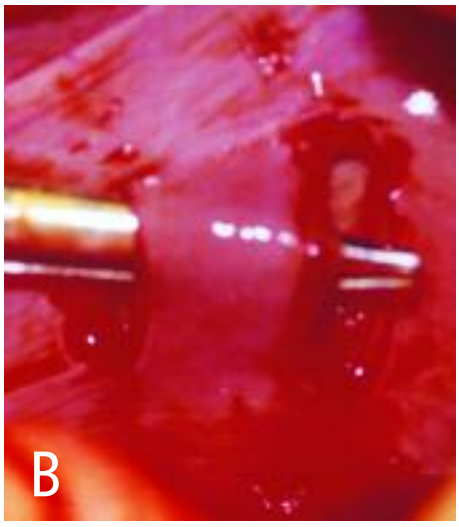
1 Create a seromuscular flap based along the greater curvature of the stomach to secure the pyloric antrum to the right abdominal wall. The flap should extend past the midline, between the greater and lesser curvature of the stomach. It is recommended to have at least 2 to 3 branches of the gastroepiploic artery (*arrows*) incorporated in the base of the flap in order to improve the flap's survival.

2 The flap should incorporate the serosa and muscularis layers. You can identify the plane of dissection (between the muscularis and the submucosa) by pinching the stomach wall—the mucosa and submucosa will slip away while only the serosa and the muscularis layers stay between the fingers.



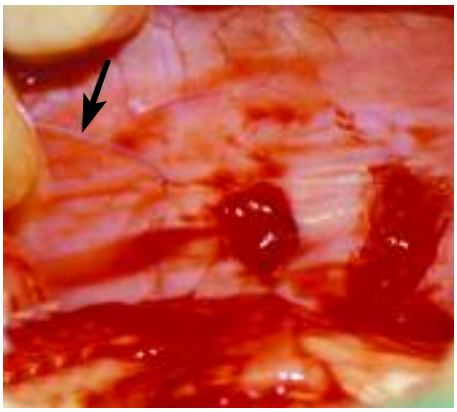
3 With Metzembaum scissors, make an incision in the serosa and the muscularis layers at the apex of the flap (**A**). The incision should go beyond the midline between the greater and lesser curvatures to elevate a 4- to 5-centimeter flap (**B**). The flap needs to be long enough to fit comfortably through the belt-loop without too much tension in the suture line.



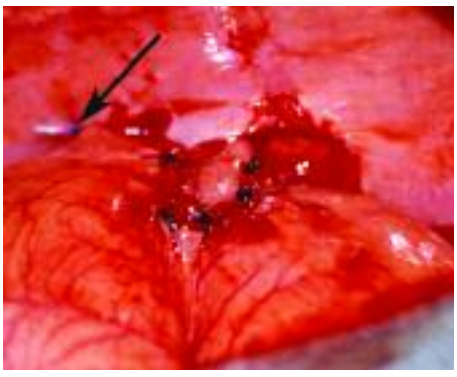


4 After complete dissection, the flap, the submucosa, and the mucosa will bulge through the incision (**A**). Place a stay suture at the tip of the flap for further manipulation of the flap and then make two parallel 5-centimeter incisions through the peritoneum and the right transverse abdominalis muscle 2 to 3 centimeters caudal to the last rib (**B**) to create the belt-loop. The two incisions should be 3 centimeters apart.

PROCEDURE PEARL
The flap needs to be long enough to fit comfortably through the belt-loop without too much tension in the suture line.



5 Completely dissect the segment of transverse abdominalis muscle from the internal oblique muscle. Then bring the stomach close to the right abdominal wall. To decrease tension between the stomach and abdominal walls, I place a nonabsorbable suture (arrow) between them at the base of the seromuscular flap.



6 Pass the seromuscular flap in a caudal to cranial direction underneath the transverse abdominalis muscle using the stay suture at the tip. Suture the seromuscular flap back in its original position using a 2-0 to 3-0 monofilament suture in a cruciate suture pattern.

The belt-loop gastropexy is now complete. The flap has been sutured back in its original position after passing between the transverse abdominalis muscle and the internal oblique muscle. The *arrow* indicates the suture placed between the abdominal and stomach walls.

See Aids & Resources, back page, for references, contacts, and appendices.