

Endoscopic Biopsy Forceps Comparison

Sara A. Colopy, DVM, PhD, DACVS
University of Wisconsin–Madison

In the Literature

Dahan J, Semin MO, Monton C, et al. Comparison of routinely used intestinal biopsy forceps in dogs: an ex vivo histopathological approach. *J Small Anim Pract.* 2017;58(3):162-167.

FROM THE PAGE ...

With endoscopy, which allows for minimally invasive biopsy of the small intestines, histologic findings between duodenal and ileal samples vary considerably. Sampling of both sites is recommended for dogs with chronic upper GI signs.¹ Various types of endoscopic biopsy forceps are available (**Figures 1-3**) and result in different sample sizes and quality. The ideal forceps type for endoscopic intestinal biopsy in dogs has not been established.



▲ FIGURE 1



▲ FIGURE 2

This study examined the effect of forceps cup type on the morphology of ileal and duodenal samples from canine cadavers. A total of 720 ex vivo segments of duodenum and ileum were obtained immediately postmortem from 15 dogs and were pinned, mucosal side up, to a flat corkboard. Samples were obtained using 4 biopsy forceps cup types (all with 4 mm × 2 mm cup dimensions), differing only in type of edges (alligator [ie, serrated] or smooth) and presence of a needle (ie, spike) inside. A pathologist evaluated stained slides for depth, size, artifact, fixation, and overall tissue score.

Consistent with previously published studies, the authors found that ileal biopsy samples were better quality as compared with duodenal biopsy samples.² When forceps cups with a smooth edge and needle were used, samples had fewer artifacts than biopsy forceps cups with no needle. Use of cups with alligator jaws resulted in deeper duodenal biopsy samples than those with smooth edges without a needle.

Correlation between biopsy forceps cup type, sample morphology, and diagnostic accuracy could not be established because of the cadaveric nature of the study. Procedural risk and/or patient morbidity could not be analyzed.



▲ FIGURE 3

... TO YOUR PATIENTS

Key pearls to put into practice:

- 1** Disease distribution and sample quality of duodenal and ileal endoscopic biopsies vary. **—** highest diagnostic yield, biopsy of both sites is recommended for dogs with chronic enteropathies.
- 2** Various biopsy forceps types are available with varying cup size, shape, and edge type. Some have **—** internal needles, which are thought to stabilize tissue and reduce sampling artifact.
- 3** Although different biopsy forceps types may result in varying sample morphology, a correlation **—** between biopsy forceps cup type and diagnostic accuracy has not been established in veterinary medicine. **—**

References

1. Procoli F, Muscular PF, Keyte SV, Priestnall S, Allenspach K. Comparison of histopathologic findings in duodenal and ileal endoscopic biopsies in dogs with chronic small intestinal enteropathies. *J Vet Intern Med.* 2013;27(2):268-274.
2. Casamian-Sorrosal D, Willard MD, Murray JK, Hall EJ, Taylor SS, Day MJ. Comparison of histopathologic findings in biopsies from the duodenum and ileum of dogs with enteropathy. *J Vet Intern Med.* 2010;24(1):80-83.

When forceps cups with a smooth edge and needle were used, samples had fewer artifacts than biopsy forceps cups with no needle.