GI from top to bottom

large dogs. Conversely the outside tip diameter (5–11.5 mm) determines both the maximum patient size for passage into the duodenum and the diameter for the biopsy channel (minimum 2.8 mm preferred for adequately sized biopsy samples).

ESSENTIAL EQUIPMENT

A light source with an integral air/water pump allows inflation of the gastrointestinal tract and removal of debris from the endoscope tip. A suction pump is required to remove liquid and excess air.

Biopsy forceps with opposing 2–3 mm cups are available in multiple configurations, including fenestrated and non-fenestrated variants with smooth or serrated edges, with or without a central spike. Ultimately clinician preference determines forceps selection. It is recommended to collect at least six to eight adequate endoscopic biopsy specimens to enable evaluation of the gastric and duodenal mucosa.

PATIENT PREPARATION

To ensure that the stomach is empty, preanaesthetic fasting for 12 hours is recommended (longer if gastric motility is impaired). Proper preparation for colonoscopy involves an extended fast (48 hours) and administration of laxative agents orally or via enema. Positioning in left lateral recumbency for endoscopy facilitates entry to the duodenum.

FOREIGN BODY RETRIEVAL

Various shapes and sizes of foreign objects can be retrieved endoscopically using single wire snares, baskets, multiwire grasping forceps or biopsy forceps. Performing

oesophagoscopy inside a wide-bore tube protects the oesophagus from damage when removing fish hooks or needles.

KEY LEARNING OBJECTIVES

- Recognize the key components of an endoscopy system
- How to achieve diagnostic samples
- Tips to overcome some frequently encountered problems

MULTIPLE CHOICE QUESTIONS

1. Which feature of endoscopic biopsy forceps helps optimize sample quality?
(A) Presence of a central spike
(B) Serrated or smooth edged
(C) Fenestrated or non-fenestrated
(D) None of the above
2. Which of the following steps is NOT necessary when preparing a patient for colonoscopy?
(A) Placement in left lateral recumbency
(B) A prolonged (>36 hours) fast
(C) Down-regulation of the air insufflation to avoid overinflation of the colon
(D) Administration of an enema
3. What first step should be taken if the patient develops sinus bradycardia during endoscopy?
(A) Deflation of the stomach
(B) Administration of atropine
(C) Lightening of the plane of anaesthesia
(D) Increase intravenous fluid rate

Interpreting GI histopathology results from top to bottom

Alix McBrearty

In this case-based interactive lecture we will look at cases in which gastric, small intestinal and/or colonic histopathology was performed and how the results affected the subsequent clinical decision making. We will explore some of the challenges facing the pathologist in the interpretation of GI biopsy specimens and how this might affect their conclusions, and reflect on how to maximize the usefulness of GI biopsies. We will also discuss some of the questions that GI histopathology cannot currently answer.

The interpretation of GI biopsy specimens is one step in a much longer process that includes collecting pertinent historical information from the client, clinical examination of the patient, clinicopathological testing

and imaging examinations. To maximize their potential, gastrointestinal biopsy specimens should be collected at the correct time in the investigations, from the optimal location, in an appropriate manner and should be analysed in a reproducible way by the histopathologist, in order to ensure that the results can be usefully interpreted and used to alter clinical decision making.

At the outset, it is important to be realistic about the goals of the procedure in the specific case and be aware of the possibility that the biopsy specimens may not yield the information we need or expect. In some cases, interpretation of the histopathology results is straightforward, the final diagnosis is identified, and a clear course of action can be pursued. In other cases, the histopathology may not fit particularly well with the rest of the clinical picture or, as is often the case in inflammatory diseases, routine histopathology may only be one step in the process of making a diagnosis and developing a treatment/management plan and questions often remain following biopsy. In these cases, it is often only through the integration of the routine histopathology results with the rest of the clinical and diagnostic testing that we are able to arrive at a diagnosis for the patient.

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KEY LEARNING OBJECTIVES

- To develop an understanding of some of the challenges facing the pathologist when examining gastrointestinal (GI) biopsy specimens
- To understand the indications for and limitations of histopathology in the diagnosis of GI disease
- To reflect on what we can do to maximize the potential of GI biopsies

MULTIPLE CHOICE QUESTIONS

1. Which of the following histopathological diagnoses may require further investigation to determine the underlying aetiology?
 - (A) Alimentary lymphoma
 - (B) Gastric adenocarcinoma
 - (C) Lymphocytic plasmacytic enteritis
 - (D) Gastrointestinal stromal cell tumour
2. Which of the following is true about small intestinal endoscopy?
 - (A) If the mucosa appears grossly normal endoscopically, there is rarely any benefit to collecting biopsy specimens
 - (B) If gastric ulceration is identified, endoscopic biopsy specimens should be collected from the periphery of the lesion rather than the centre
 - (C) Collection of four to five endoscopic biopsy specimens from the duodenum is usually enough to obtain a diagnosis in diffuse small intestinal disease
 - (D) In small intestinal disease the histopathological changes in the ileum are often very similar to those in the duodenum
3. Which of the following histopathological stains would be useful in the diagnosis of intestinal mycobacteriosis?
 - (A) Ziehl-Neelsen
 - (B) Giemsa
 - (C) Toluidine blue
 - (D) Silver stain

Colorectal disease

Alix McBrearty

In this interactive lecture we will discuss the approach to and management of large intestinal diseases using a series of cases with non-infectious inflammatory diseases of the colon and rectum and some important infectious causes of large intestinal inflammation, including granulomatous colitis and *Tritrichomonas foetus* infection. We will also discuss rectal strictures which are a potential sequela of inflammatory disease.

Attempting to differentiate between signs of upper and lower intestinal inflammation is important as it may alter the investigations performed and the potential underlying causes. Chronic colitis is more common in dogs than in cats, and in cats, when colitis occurs, the small intestine is often also affected. A wide variety of infectious organisms have been reported to cause colitis in dogs and cats, however several of these are challenging to diagnose. In cases where an underlying cause is identified, this should be treated and in those in which no underlying cause is found, a combination of dietary modification and anti-inflammatory and immunosuppressive drugs is used.

The rectal mucosa is histologically similar to that of the colon and proctitis may occur alongside colitis in

some cases. In other patients, proctitis may occur in conjunction with anal or perianal inflammation or in isolation. Investigation and treatment of proctitis will depend on whether an underlying cause can be identified and whether other areas of the gastrointestinal tract are affected.

Rectal strictures are uncommon in both dogs and cats. They may be congenital or occur due to rectal neoplasia or following inflammatory rectal disease, rectal surgery or radiation therapy. Investigations are required to identify the extent of the lesion and the underlying cause as these will change the preferred treatment option for the individual patient.

KEY LEARNING OBJECTIVES

- To appreciate the difference in clinical presentation between cases with small and large intestinal inflammatory disease
- To develop a logical diagnostic approach to a patient with signs of chronic colonic or rectal inflammation
- To understand the treatment and management options available for the treatment of a selection of colorectal diseases and understand when each might be indicated