Patologia para Gastroenterologistas e Endoscopistas
Parte 1: *Guidelines* Internacionais para o trato gastrointestinal

fgrandi83

fgrandivet@gmail.com

Fabrizio Grandi

M.V. Patologista
Ex-Diretor Científico Associação Brasileira de Patologia Veterinária, 2020-2021 (ABPV)
Residência, Mestrado e Doutorado em Patologia
Professor e coordenador VetSchool São Paulo
www.patologiadrgrandi.com.br

Guidelines

Gastrointestinal Guidelines

Standardized GI Endoscopy Reporting Forms

The upper and lower GI endoscopy report forms linked below, represent the work of the WSAVA Working Group on GI Histopathology. The group recognized the need to also standardize endoscopic examination and sampling of the GI tract to ensure the highest procedural diagnostic yield. These endoscopy report forms help address this, namely that endoscopic examination is complete and thorough. Ongoing work is looking at the number of mucosal biopsies needed to ensure diagnosis of different lesions as well as the effect of quality of endoscopic biopsy on the likelihood of diagnosis. The GI Standardization Group hope that we will soon have standards of histological interpretation based upon an analysis of naturally occurring case clinical features.

- **Upper GI Endoscopy Report Form (PDF).**
- **Lower GI Endoscopy Report Form (PDF).**
- **Endoscopic, Biopsy, and Histopathologic Guidelines for the Evaluation of Gastrointestinal Inflammation in Companion Animals (Web).**

Endorsement

- These forms have been officially endorsed by the Comparative Gastroenterology Society (CGS) and the European Society of Comparative Gastroenterology (ESCG).

ACVIM Consensus Statement
J Vet Intern Med 2010;24:10–26

Consensus Statements of the American College of Veterinary Internal Medicine (ACVIM) provide the veterinary community with up-to-date information on the pathophysiology, diagnosis, and treatment of clinically important animal diseases. The ACVIM Board of Regents oversees selection of relevant topics, identification of panel members with the expertise to draft the statements, and other aspects of assuring the integrity of the process. The statements are derived from evidence-based medicine whenever possible and the panel offers interpretive comments when such evidence is inadequate or contradictory. A draft is prepared by the panel, followed by solicitation of input by the ACVIM membership, which may be incorporated into the statement. It is then submitted to the Journal of Veterinary Internal Medicine, where it is edited prior publication. The authors are solely responsible for the content of the statements.

Endoscopic, Biopsy, and Histopathologic Guidelines for the Evaluation of Gastrointestinal Inflammation in Companion Animals

The WSAVA International Gastrointestinal Standardization Group: R.J. Washabau, M.J. Day, M.D. Willard, E.J. Hall, A.E. Jergens, J. Mansell, T. Minami, and T.W. Bilzer

Key words: Cat; Colon; Dog; Duodenum; Endoscopy; Histopathology; Intestine; Stomach.

Considerações prévias à biópsia

- Testes laboratoriais (bioquímico, hemograma)
- Ultrassonografia abdominal
  - Localização da lesão (além do endoscópio)
  - Padrão de lesão
  - Indicação de PAF prévia
  - Contraindicação do exame endoscópico

ELSEVIER

The Veterinary Journal
Volume 214, August 2016, Pages 50-60

Review

Maximizing the diagnostic utility of endoscopic biopsy in dogs and cats with gastrointestinal disease

Albert E. Jergens [a], Michael D. Willard [b], Karin Allenspach [c]

Show more

https://doi.org/10.1016/j.tvjl.2016.04.008

Get rights and content

Considerações técnicas (Jergens, 2016)

O que a análise histopatológica não é capaz ou, pouco capaz de diagnosticar?

Table 2. Gastrointestinal diseases that may not have significant histopathologic abnormalities (modified from Jergens et al., 2011)

GI diseases unaccompanied by significant histopathologic abnormalities
Motility disturbances
Brush border defects
Antimicrobial-responsive enteropathy
Secretory diarrheas
Adverse food reactions
Mucosal permeability defects

GI, gastrointestinal

Fabrizio Grandi

Considerações técnicas (Jergens, 2016)

Biópsia *full-thickness* x endoscópica

- *Full-thickness*
  - Transmural
  - Procedimento invasivo
  - Maior tempo de anestesia
  - Hospitalização prolongada
  - Custos
  - Inabilidade de observar lesões mucosas
  - Em gatos: indicada nas doenças do trato gastrointestinal e pancreato-biliar

Fabrizio Grandi

Considerações técnicas (Jergens, 2016)

Biópsia *full-thickness* x endoscópica

- Endoscópica
  - Menor tempo de procedimento
  - Uso em pacientes críticos
  - Demanda *expertise*
  - Maior chance de sub-amostragem
  - Dificuldade em obter amostras do íleo e jejuno inferior

Fabrizio Grandi

Considerações técnicas (Jergens, 2016)

Biópsia *full-thickness* x endoscópica

- Linfoma de mucosa e transmural
- Linfoma ileal
- Linfoma e IBD concomitantes em diferentes segmentos intestinais

Fabrizio Grandi

Fabrizio Grandi

Indicações e biópsia

- Esofagoscopia
  - Esofagites não granulomatosas
  - Esofagites granulomatosa (*S. lupi*)
  - Tumores esofágicos

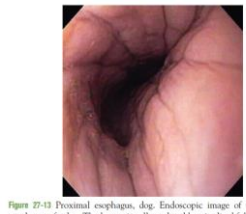
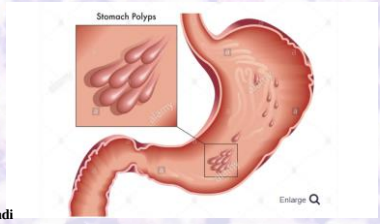


Figure 27-13 Proximal esophagus, dog. Endoscopic image of the proximal esophagus of a dog. The lumen is collapsed and longitudinal folds are visible. Air insufflation will expand the visible lumen and allow the endoscope to be safely advanced while the mucosa is examined.

Fabrizio Grandi

Indicações e biópsia

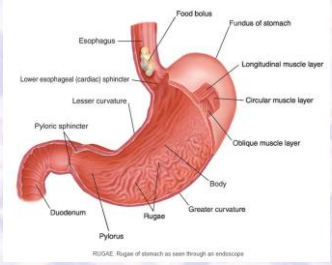
- Gastroscopia
  - Gastrites *latu sensu* (ulcerativas, erosivas, não ulcerativas e não erosivas)
  - Tumores gástricos
    - Carcinomas (focal tumor *like* ou difusos), pólipos



Fabrizio Grandi

Indicações e biópsia

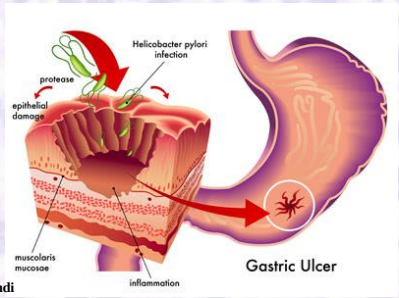
- Gastroscopia
  - Lesão x normalidade
    - Biópsia das rugas/dobras gástricas do corpo (normalidade)



Fabrizio Grandi

Indicações e biópsia

- Gastroscopia
  - Gastrites erosivas, erodo-ulcerativas ou ulcerativas



Fabrizio Grandi

Indicações e biópsia

- Duodenoscopia, jejunoscopia e ileoscopia
  - Diarréia crônica ou recorrente
  - Vômitos
  - Dor abdominal recorrente
  - Perda de peso
  - Hematoquezia ou melena
  - Anemias

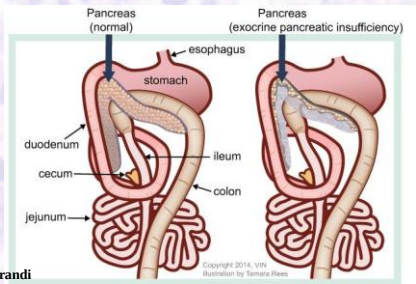
Figure 27-28 Endoscopic picture of normal small intestinal mucosa in the duodenum of a healthy Beagle, showing also the major, minor, and accessory papillae.[36]

- Ausência de resposta ao tratamento clinico

Fabrizio Grandi

Indicações e biópsia

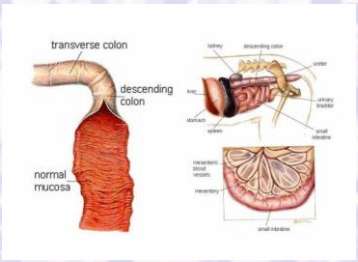
- Duodenoscopia, jejunoscopia e ileoscopia
  - Porções passiveis de avaliação: duodeno e jejuno proximal; íleo terminal (colonoscopia)>decisão por laparoscopia



Fabrizio Grandi

Indicações e biópsia

- Colonoscopia
  - Análise do esfíncter íleo-cólico, ceco, cólon ascendente, transverso, descendente e canal ano-retal.
  - Íleo distal



Fabrizio Grandi

Indicações e biópsia

- Colonoscopia
  - Tenesmo
  - Disquezia
  - Muco fecal
  - Hematoquezia
  - Hipoalbuminemia
  - Perda de peso
  - Anemia
  - Vômitos (30% dos casos originários nas colonopatias, principalmente em gatos)

Fabrizio Grandi

Manipulação pós-coleta

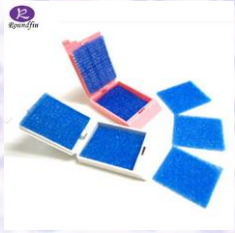
- Técnica *free floating*

Luis Apesteguía, Luis Javier Pina
Ultrasound-guided core-needle biopsy of breast lesions.

Fabrizio Grandi

Manipulação pós-coleta

- Técnica da esponja sintética



Fabrizio Grandi

Manipulação pós-coleta

- Técnica das fatias de pepino

Fabrizio Grandi

Manipulação pós-coleta

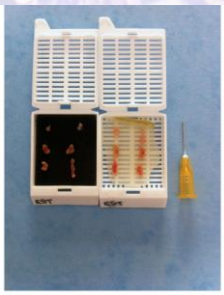


Fig 1. Gastric endoscopic biopsies following mounting and orientation on the synthetic foam sponge (left cassette) and on the thin cucumber slice (right cassette). Each line of 2 biopsy specimens corresponds to 1 site of the stomach (antrum, body, and fundus from the top to the bottom, respectively).

Fabrizio Grandi

Manipulação pós-coleta

Journal of Veterinary Internal Medicine
ACVIM
Open Access
J Vet Intern Med 2016;30:1014–1021

Comparison of 3 Handling Techniques for Endoscopically Obtained Gastric and Duodenal Biopsy Specimens: A Prospective Study in Dogs and Cats

G.C. Ruiz, E. Reyes-Gomez, E.J. Hall, and V. Freiche

Fabrizio Grandi

Manipulação pós-coleta

Background: Limited evidence exists in the literature regarding whether a specific mount is preferable to use for processing endoscopically obtained gastrointestinal biopsy specimens.

Hypothesis/Objectives: To compare 3 methods of handling endoscopically obtained gastrointestinal biopsy specimens from collection to laboratory processing and to determine if any technique produced superior results.

Animals: Twenty-three dogs and cats presented for gastrointestinal signs.

Methods: Prospective study of dogs and cats presented with gastrointestinal signs to a veterinary teaching referral hospital which underwent upper gastrointestinal endoscopy. Biopsy specimens were taken from the stomach and duodenum and submitted to the laboratory using 3 techniques: mounted on a cucumber slice, mounted on a moisturized synthetic foam sponge, and floating free in formalin. The techniques were compared with regard to the specimens' width, orientation, presence of artifacts, and pathologist's confidence in diagnosis.

Results: Twenty-three patients were included, with a total of 528 biopsies collected. Specimens on cucumber slice and on sponge were significantly wider ($P < .001$ and $P = .001$, respectively) compared to those floating free in formalin (mean width of 3.81 versus 3.31 and 2.52 mm, respectively). However, specimens on synthetic sponge had significantly fewer artifacts compared to those on cucumber slice ($P = .05$) and those floating free in formalin ($P = .02$). Confidence in the diagnosis also was superior with the sponge technique over floating free specimens ($P = .002$).

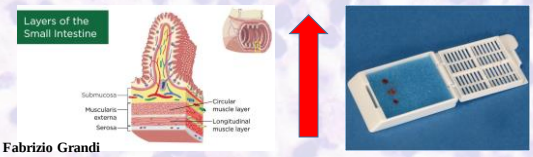
Conclusions and Clinical Importance: The use of mounted gastrointestinal biopsy specimens was superior over the use of specimens floating free in formalin. This technique improved the quality of the specimens and the pathologist's confidence in their histopathologic interpretation.

Key words: Duodenoscopy; Gastroenterology; Histopathology; Mount.

Fabrizio Grandi

Fixação e manuseio das amostras

- Pós-coleta
  - Orientação dos fragmentos sobre fatia de pepino ou esponja sintética em colunas com as vilosidades deitadas para cima
  - Fixação imediata em formol à 10%
  - **Manuseio das amostras: somente** após a fixação em formol à 10%



Fabrizio Grandi

Fixação e manuseio das amostras

Fabrizio Grandi

Fabrizio Grandi

Requisição de exame ao patologista

ENDOSCOPIC EXAMINATION REPORT: UPPER GI ENDOSCOPY

Date of procedure: ..... **Case Number:** .....

Patient and client information:
(card or stamp)

PROCEDURE(S):
Indication(s) for procedure:
Endoscope(s) used:
Forceps/retrieval device(s) used:

PROBLEMS/COMPLICATIONS: None ☐
Perforation ☐ Excessive bleeding ☐ Anesthetic complications ☐ Excessive time ☐ Other ☐
Comments:
☐ Unable to complete full examination: why?
☐ Unable to obtain adequate biopsies: why?
☐ Unable to retrieve foreign object: why?
☐ Visualization obscured why?

Requisição de exame ao patologista

SAMPLING: Biopsy ☐ Brush cytology ☐ Washing ☐ Aspiration ☐ Foreign body retrieved ☐

DOCUMENTATION: Video ☐ Photographs ☐

ESOPHAGUS Normal ☐ Foreign body ☐ Mass ☐ Stricture ☐ Hiatal hernia ☐

Lesion	Code	Comments (include location)
Hyperemia/vascularity		
Discoloration		
Friability		
Hemorrhage		
Erosion/ulcer		
Contents (mucus/bile/food)		
Dilation		
Gastroesophageal sphincter		
Other		

Code: Normal = 0 Mild = 1 Moderate = 2 Severe = 3

Fabrizio Grandi

Requisição de exame ao patologista

STOMACH Normal ☐ Foreign body ☐ Mass ☐ Polyp(s) ☐ Parasite(s) ☐
Site(s) of lesions: Fundus ☐ Body ☐ Incisura ☐ Antrum ☐ Pylorus ☐
Site(s) of biopsies: Fundus ☐ Body ☐ Incisura ☐ Antrum ☐ Pylorus ☐

Lesion	Code	Comments (include location)
Can't inflate lumen		
Hyperemia/vascularity		
Edema		
Discoloration		
Friability		
Hemorrhage		
Erosion/ulcer		
Contents (mucus/bile/food)		
Gastroesophageal sphincter		
Passing scope through pylorus		
Other		

Fabrizio Grandi

Requisição de exame ao patologista

DUODENUM/JEJUNUM Normal ☐ Foreign body ☐ Mass ☐ Polyp ☐ Parasite(s) ☐
How far was the tip of the scope advanced? _____
Was/were the papilla(e) seen? Yes ☐ (which? _____) No ☐

Lesion	Code	Comments (include location)
Can't inflate lumen		
Hyperemia/vascularity		
Edema		
Discoloration		
Friability		
Texture		
Hemorrhage		
Erosion/ulcer		
Lacteal dilatation		
Contents (mucus/bile/food)		
Other		

Code: Normal = 0 Mild = 1 Moderate = 2 Severe = 3

Comments and Recommendations: _____

Endoscopist signature _____

This standard form was developed by the WSAVA Gastrointestinal Standardization Group (Drs Washabau, Willard, Hall, Jergens, Day, Mansell, Wilcox, Minami, Guilford, and Biltzer) with sponsorship from Hill's Pet Nutrition

Fabrizio Grandi

Critérios de coleta e qualidade das amostras

Estômago e duodeno

J Vet Intern Med 2008;22:1084–1089

Effect of Sample Quality on the Sensitivity of Endoscopic Biopsy for Detecting Gastric and Duodenal Lesions in Dogs and Cats

M.D. Willard, J. Mansell, G.T. Fosgate, M. Gualtieri, D. Olivero, P. Lecoindre, D.C. Twedt, M.G. Collett, M.J. Day, E.J. Hall, A.E. Jergens, J.W. Simpson, R.W. Else, and R.J. Washabau

Fabrizio Grandi

Critérios de coleta e qualidade das amostras

Duodeno

- Amostra adequada

"Adequate" was defined as tissue that had at least 3 villi and had subvillus lamina propria that extended to the mucosa-muscularis mucosa border, whether or not it included muscularis mucosa.

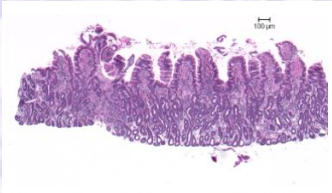


Fig 3. Photomicrograph of a biopsy sample of canine duodenum. This is an example of an "adequate" tissue sample that has at least 3 villi and encompasses the entire depth of the intestinal mucosa as seen by subvillus lamina propria, which extends to the mucosa-muscularis mucosa border. Even though muscularis mucosa is not present, the smooth, uniform lower border of the tissue sample shows that it extends to the muscularis mucosa. Hematoxylin-eosin staining.

Fabrizio Grandi

Critérios de coleta e qualidade das amostras

Estômago e duodeno

- Amostra inadequada

"Inadequate" was defined as tissue that had only villi or subvillus lamina propria, but not both

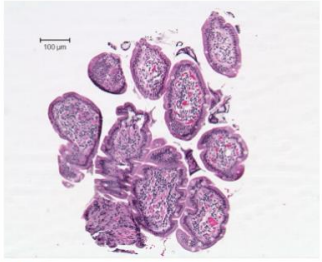


Fig 1. Photomicrograph of a biopsy sample of canine duodenum. Only villus tips are present. This is considered an "inadequate" tissue sample. Hematoxylin-eosin staining.

Fabrizio Grandi

Critérios de coleta e qualidade das amostras

Estômago e duodeno

- Amostra marginal

"Marginal" was defined as samples that had at least 1 villus plus subvillus lamina propria, but did not clearly have the full thickness of the subvillus lamina propria extending to the muscularis mucosa

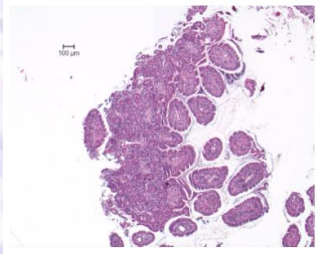


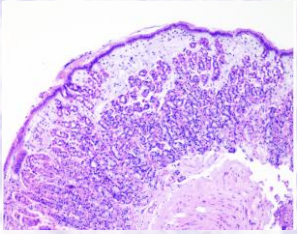
Fig 2. Photomicrograph of a biopsy sample of canine duodenum. This is an example of a "marginal" tissue sample. Hematoxylin-eosin staining.

Fabrizio Grandi

Critérios de coleta e qualidade das amostras

Estômago

"Adequate" was defined as samples that had full-thickness mucosa, whether or not it included muscularis mucosa
"Inadequate" was defined as samples that had only superficial mucosa and epithelium, or deep mucosa, but not both.
"Marginal" was defined as samples that had epithelium and mucosa, but did not clearly have full-thickness mucosa.



Fabrizio Grandi

Critérios de coleta e qualidade das amostras

Estômago

Table 3. Sensitivity and number of pieces of tissue required for 80–99% confidence in diagnosis of select canine and feline gastric lesions, based on the quality of the tissue samples on the histopathology slide.

Lesion	Tissue Quality	Number of Tissue Samples[a]	Sensitivity (%)	Number of Samples Required for Detection of Lesion: 80% Confidence	90% Confidence	99% Confidence	Rows Significantly Different
Mild infiltrates (dogs)	Inadequate	21/7	33.3	4	6	12	a, b
	Marginal	97/73	75.3	2	2	4	a
	Adequate	403/333	82.6	1	2	3	b
Moderate infiltrates (dogs)	Inadequate	8/1	12.5	13	18	35	c
	Marginal	42/13	31.0	5	7	13	d
	Adequate	212/106	50.0	3	4	7	c, d
Mild infiltrates (cats)	Inadequate	22/5	22.7	7	9	18	e, f
	Marginal	70/52	74.3	2	2	4	e
	Adequate	177/137	77.4	2	2	4	f
Moderate infiltrates (cats)	Inadequate	8/0	0	ND	ND	ND	
	Marginal	54/35	64.8	2	3	5	
	Adequate	103/60	58.3	2	3	6	

ND, could not be diagnosed with tissue samples of this quality.
[a]This column represents the total number of tissue samples (positive or negative) from animals with the lesion/total number of tissue samples from animals that were positive for the lesion.
Rows with the same letter are different at a, $P < .001$; b, $P < .001$; c, $P = .0037$; d, $P = .034$; e, $P < .001$; f, $P < .001$.

Fabrizio Grandi

Critérios de coleta e qualidade das amostras

Duodeno

Table 1. Sensitivity and number of pieces of tissue required for 80–99% confidence in diagnosis of select duodenal lesions in dogs, based on the quality of the tissue samples on the histopathology slide.

Lesion	Tissue Quality	Number of Tissue Samples[a]	Sensitivity (%)	Number of Samples Required for Detection of Lesion: 80% Confidence	90% Confidence	99% Confidence	Rows Significantly Different
Blunt villi	Inadequate	22/0	0	ND	ND	ND	
	Marginal	60/16	26.7	6	8	15	a
	Adequate	108/67	62.0	2	3	5	a
Lymphangiectasia	Inadequate	29/3	10.3	15	22	43	b,c
	Marginal	117/50	42.7	3	5	9	b
	Adequate	151/85	56.3	2	3	6	c
Crypt lesions	Inadequate	21/1	4.8	33	48	95	d
	Marginal	79/12	15.2	10	14	28	
	Adequate	139/42	30.2	5	7	13	d
Mild cellular infiltrates	Inadequate	67/15	22.4	7	10	19	e, f
	Marginal	235/116	49.4	3	4	7	e, g
	Adequate	318/228	71.7	2	2	4	f, g
Moderate cellular infiltrates	Inadequate	39/1	2.6	62	89	178	h, i
	Marginal	164/69	42.1	3	5	9	h, j
	Adequate	240/152	63.3	2	3	5	i, j

ND, could not be diagnosed with tissue samples of this quality.
[a]This column represents the total number of tissue samples (positive or negative) from animals with the lesion/total number of tissue samples from animals that were positive for the lesion.
Rows with the same letter are different at a, $P < .001$; b, $P < .001$; c, $P < .001$; d, $P < .001$; e, $P < .001$; f, $P < .001$; g, $P = .0037$; h, $P < .001$; i, $P = .010$; j, $P < .001$.

Fabrizio Grandi

Critérios de coleta e qualidade das amostras

Duodeno

Biopsy Quality Affects Diagnosis 1087

Table 2. Sensitivity and number of pieces of tissue required for 80–99% confidence in diagnosis of select duodenal lesions in cats, based on the quality of the tissue samples on the histopathology slide.

Lesion	Tissue Quality	Number of Tissue Samples[a]	Sensitivity (%)	Number of Samples Required for Detection of Lesion: 80% Confidence	90% Confidence	99% Confidence	Rows Significantly Different
Blunt villi	Inadequate	24/4	16.7	9	13	26	a, b
	Marginal	30/17	56.7	2	3	6	a
	Adequate	89/60	67.4	2	3	5	b
Mild cellular infiltrates	Inadequate	44/24	54.5	3	3	6	c
	Marginal	81/64	79.0	2	2	3	d
	Adequate	141/136	96.5	1	1	2	c, d
Moderate cellular infiltrates	Inadequate	27/20	74.1	2	2	4	
	Marginal	56/44	78.6	2	2	3	
	Adequate	109/98	89.9	1	2	3	

[a]This column represents the total number of tissue samples (positive or negative) from animals with the lesion/total number of tissue samples from animals that were positive for the lesion.
Rows with the same letter are different at a, $P = .002$; b, $P < .001$; c, $P < .001$; d $P = .008$.

Fabrizio Grandi

Critérios de coleta e qualidade das amostras

Número mínimo de amostras EDA (Willard, 2008)

- Gato
  - Estômago e duodeno
    - 6 adequados ou marginais (99% de confiança de encontrar qualquer lesão)
- Cão
  - Duodeno
    - 6 adequados, exceto para lesões criptais ou;
    - 10-15 marginais, exceto para lesões criptais.
    - **Lesões criptais**
      - 13 adequados ou >20 marginais
  - Estômago
    - 7 adequados ou 13 marginais

Fabrizio Grandi

Critérios de coleta e qualidade das amostras

Exemplos de amostragem

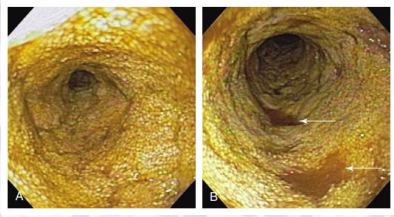


Figure 27-48 A, Endoscopic view of the duodenal mucosa of a Pug with a severe protein-losing enteropathy (serum albumin 1.4 g/dL). The mucosa appears uniformly normal throughout this image. **B**, Endoscopic view of the same duodenum. This image was taken several centimeters further aborad. Now focal areas that appear to have loss of villi (i.e., the surface is depressed relative to the rest of the mucosa and is smooth, *arrows*) can be seen. However, there is still more normal-appearing mucosa than abnormal-appearing mucosa. **C**, Photomicrograph of a tissue sample from the depressed, smooth areas seen in **(B)**. Note that there is an intact epithelial surface but a complete loss of villi plus a marked inflammatory cell infiltrate. **D**, Endoscopic view of the duodenum of a Bedlington Terrier with severe diarrhea and protein-losing enteropathy. Note that there are areas of the mucosa that are relatively light colored (*small arrows*) and other areas that are darker red in color (*larger arrows*). Also note that the darker red areas comprise a much smaller portion of the surface area of the duodenal mucosa. **E**, Photomicrograph of the light-colored duodenal mucosa seen in **(D)**. Note that this is relatively normal except for some villus blunting. **F**, Photomicrograph of the darker-colored duodenal mucosa seen in **(D)**. Note that there is fusion of villi (despite an intact but damaged and attenuated epithelial surface) and severe distortion of mucosal crypts. This is severe mucosal disease.

Fabrizio Grandi

Critérios de coleta e qualidade das amostras

Exemplos de amostragem

Fabrizio Grandi

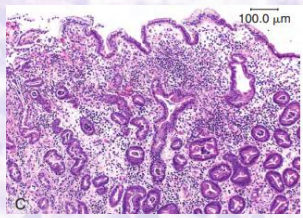


Figure 27-48 A, Endoscopic view of the duodenal mucosa of a Pug with a severe protein-losing enteropathy (serum albumin 1.4 g/dL). The mucosa appears uniformly normal throughout this image. **B**, Endoscopic view of the same duodenum. This image was taken several centimeters further aborad. Now focal areas that appear to have loss of villi (i.e., the surface is depressed relative to the rest of the mucosa and is smooth, *arrows*) can be seen. However, there is still more normal-appearing mucosa than abnormal-appearing mucosa. **C**, Photomicrograph of a tissue sample from the depressed, smooth areas seen in **(B)**. Note that there is an intact epithelial surface but a complete loss of villi plus a marked inflammatory cell infiltrate. **D**, Endoscopic view of the duodenum of a Bedlington Terrier with severe diarrhea and protein-losing enteropathy. Note that there are areas of the mucosa that are relatively light colored (*small arrows*) and other areas that are darker red in color (*larger arrows*). Also note that the darker red areas comprise a much smaller portion of the surface area of the duodenal mucosa. **E**, Photomicrograph of the light-colored duodenal mucosa seen in **(D)**. Note that this is relatively normal except for some villus blunting. **F**, Photomicrograph of the darker-colored duodenal mucosa seen in **(D)**. Note that there is fusion of villi (despite an intact but damaged and attenuated epithelial surface) and severe distortion of mucosal crypts. This is severe mucosal disease.

Técnicas de coloração

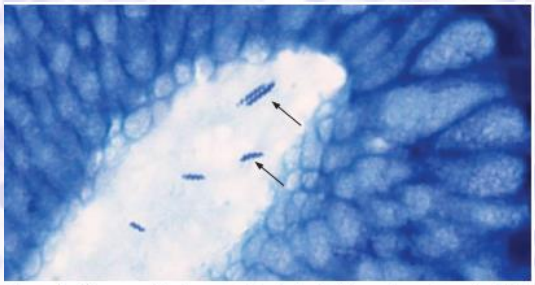
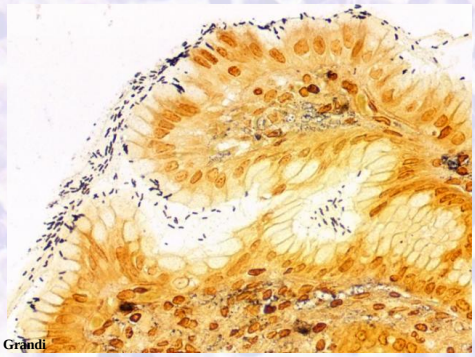


Figure 1 Giemsa stain shows *Helicobacter heilmannii* organisms (×100).

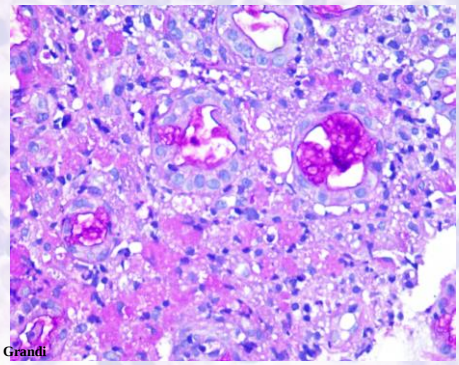
Fabrizio Grandi

Técnicas de coloração



Fabrizio Grandi

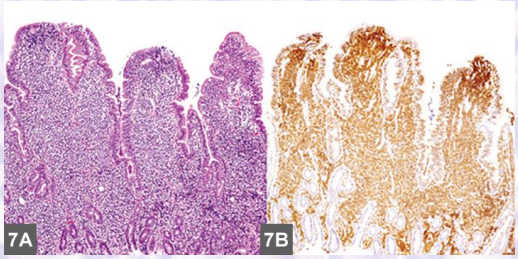
Técnicas de coloração



Fabrizio Grandi

Imuno-histoquímica

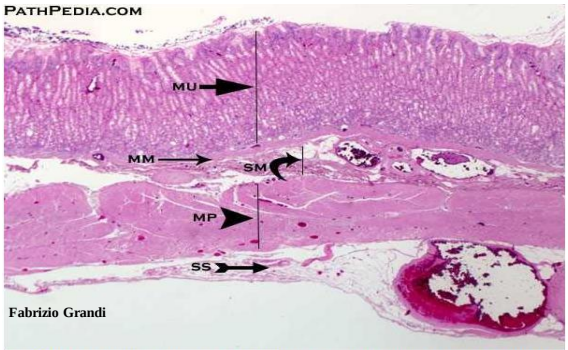
Fonte: clinician´s brief



Fabrizio Grandi

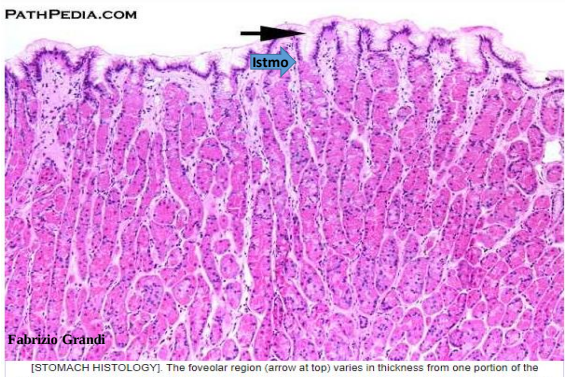
Histologia e histopatologia gástrica: padrões de resposta inflamatória

Fabrizio Grandi

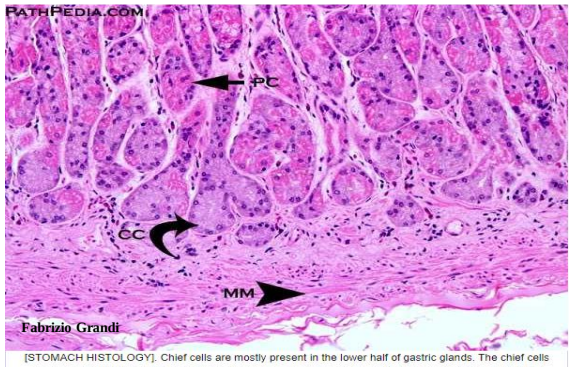


Fabrizio Grandi

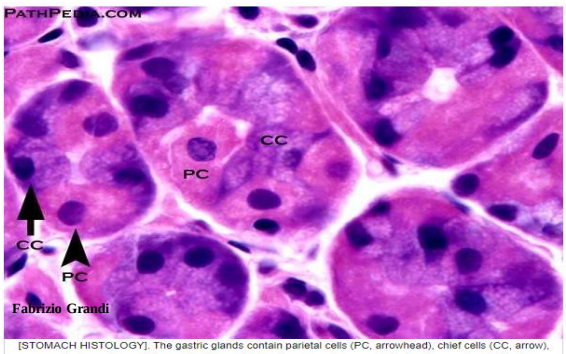
[STOMACH HISTOLOGY]. Stomach, like other segments of the gastrointestinal tract, consists of mucosa (MU, top arrow), submucosa (SM, curved arrow), muscularis propria (MP, arrowhead), and serosa (SS, arrow with tail). The mucosa consists of superficial foveolar epithelium and deeper glands. The cardiac and antral regions consist of mucus-secreting glands whereas the fundic / body region consists of parietal and chief cells. The mucosa is separated from submucosa by a thin muscularis mucosa (MM, thin middle arrow).



[STOMACH HISTOLOGY]. The foveolar region (arrow at top) varies in thickness from one portion of the stomach to the other and is relatively shorter in the fundic / body region. The foveolar epithelium, however, is the same in all parts consisting of tall mucus-secreting columnar cells. The long tubular gastric (oxyntic) glands in the fundic / body region extend as far down as the muscularis mucosa.



[STOMACH HISTOLOGY]. Chief cells are mostly present in the lower half of gastric glands. The chief cells (CC, curved arrow) are characterized by basophilic / purple appearance due to the presence of abundant ribosomal RNA involved in pepsinogen synthesis. The parietal cells (PC, top arrow) appear eosinophilic because of numerous mitochondria and synthesize hydrochloric acid and lipase. The mucosa is separated from submucosa by muscularis mucosa (MM, bottom arrowhead).



[STOMACH HISTOLOGY]. The gastric glands contain parietal cells (PC, arrowhead), chief cells (CC, arrow), neuroendocrine cells, and stem cells. The parietal cells are usually present singly whereas the chief cells are grouped together only to be interrupted in their continuity by parietal cells and neuroendocrine cells. In autoimmune gastritis auto-antibodies are present against various cell components of gastric glands, such as H^+/K^+ ATPase, intrinsic factor and gastrin. The neuroendocrine cells are small and may not be identified definitely without immunohistochemical or special histochemical stains.

[STOMACH HISTOLOGY]. The gastric pit (shown with the arrow) lined by mucous cells is connected at its base by several deeper glands. The lamina propria contains stromal cells, small resident lymphocytes, plasma cells, mast cells, eosinophils, blood vessels, and lymphatics.

Classificação das gastrites

Fabrizio Grandi

- Classificação morfológica
  - Gastrite superficial de mucosa
  - Gastrite transmucosa
  - Gastrite atrófica
- Classificação etiológica
  - Gastrite parasitária
  - Helicobacteriose
  - Pitiose
  - Outras

Fabrizio Grandi

J. Comp. Path. 2008, Vol. 138, S1–S43

Available online at www.sciencedirect.com

ScienceDirect

ELSEVIER

www.elsevier.com/locate/jcpa

Histopathological Standards for the Diagnosis of Gastrointestinal Inflammation in Endoscopic Biopsy Samples from the Dog and Cat: A Report from the World Small Animal Veterinary Association Gastrointestinal Standardization Group

M. J. Day*, T. Bilzer†, J. Mansell‡, B. Wilcock§, E. J. Hall*, A. Jergens‖, T. Minami¶, M. Willard‡ and R. Washabau#

*University of Bristol, Bristol, UK, †University of Düsseldorf, Düsseldorf, Germany, ‡Texas A&M University, College Station, TX, USA, §Histovet, Guelph, Canada, ‖Iowa State University, Ames, IA, USA, ¶Pet-Vet, Yokohama, Japan and #University of Minnesota, St Paul, MN, USA

Fabrizio Grandi

Gastrointestinal Histopathology Standards

Fabrizio Grandi

WSAVA Global Veterinary Development

STANDARD FORM FOR ASSESSMENT OF THE GASTRIC BODY OR ANTRAL MUCOSA

Pathologist_____ Case number_____

Number of pieces of gastric tissue on slide_____

Tissue present

☐ Inadequate ☐ Too superficial ☐ Adequate depth

Number of tissues abnormal_____

MORPHOLOGICAL FEATURES

	Normal	Mild	Moderate	Marked
Surface epithelial injury	☐	☐	☐	☐
Gastric pit epithelial injury	☐	☐	☐	☐
Fibrosis/glandular nesting/ mucosal atrophy	☐	☐	☐	☐

INFLAMMATION

Intraepithelial lymphocytes	☐	☐	☐	☐
Lamina propria lymphocytes and plasma cells	☐	☐	☐	☐
Lamina propria eosinophils	☐	☐	☐	☐
Lamina propria neutrophils	☐	☐	☐	☐
Other inflammatory cells	☐	☐	☐	☐
Gastric lymphofollicular hyperplasia	☐	☐	☐	☐

FINAL DIAGNOSIS

Normal tissue	☐
Lymphoplasmacytic inflammatory	☐
Eosinophilic inflammatory	☐
Neutrophilic inflammatory	☐
Mucosal atrophy/fibrosis (non-inflammatory)	☐
Other	☐

OTHER COMMENTS

Fabrizio Grandi

Fabrizio Grandi

WSAVA Global Veterinary Development

STANDARD FORM FOR ASSESSMENT OF DUODENAL MUCOSA

Pathologist_____ Case number_____

Number of pieces of duodenal tissue on slide_____

Tissue present

☐ Inadequate ☐ Too superficial ☐ Adequate depth

Number of tissues abnormal_____

MORPHOLOGICAL FEATURES

	Normal	Mild	Moderate	Marked
Villous stunting	☐	☐	☐	☐
Epithelial injury	☐	☐	☐	☐
Crypt distension	☐	☐	☐	☐
Lacteal dilation	☐	☐	☐	☐
Mucosal fibrosis	☐	☐	☐	☐

INFLAMMATION

Intraepithelial lymphocytes	☐	☐	☐	☐
Lamina propria lymphocytes and plasma cells	☐	☐	☐	☐
Lamina propria eosinophils	☐	☐	☐	☐
Lamina propria neutrophils	☐	☐	☐	☐
Other	☐	☐	☐	☐

FINAL DIAGNOSIS

Normal tissue	☐
Lymphoplasmacytic inflammatory	☐
Eosinophilic inflammatory	☐
Neutrophilic inflammatory	☐
Lymphangiectasia	☐
Mucosal atrophy/fibrosis (non-inflammatory)	☐
Other	☐

OTHER COMMENTS

Fabrizio Grandi

Gastrointestinal Histopathology Standards

Fabrizio Grandi

WSAVA Global Veterinary Development

STANDARD FORM FOR ASSESSMENT OF COLONIC MUCOSA

Pathologist_____ Case number_____

Number of pieces of colonic tissue on slide_____

Tissue present

☐ Inadequate ☐ Too superficial ☐ Adequate depth

Number of colonic tissues abnormal_____

MORPHOLOGICAL FEATURES

	Normal	Mild	Moderate	Marked
Surface epithelial injury	☐	☐	☐	☐
Crypt hyperplasia	☐	☐	☐	☐
Crypt dilation/distortion	☐	☐	☐	☐
Fibrosis/atrophy	☐	☐	☐	☐

INFLAMMATION

Lamina propria lymphocytes and plasma cells	☐	☐	☐	☐
Lamina propria eosinophils	☐	☐	☐	☐
Lamina propria neutrophils	☐	☐	☐	☐
Lamina propria macrophages	☐	☐	☐	☐

FINAL DIAGNOSIS

Normal colon	☐
Lymphoplasmacytic inflammatory	☐
Eosinophilic inflammatory	☐
Neutrophilic inflammatory	☐
Histiocytic/granulomatous inflammatory	☐
Mucosal atrophy/fibrosis (non-inflammatory)	☐
Other	☐

OTHER COMMENTS

Fabrizio Grandi

Original Article

Veterinary Pathology
1-9
© The Author(s) 2018
Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/0300985818813090
journals.sagepub.com/home/vet

Correlating Gastrointestinal Histopathologic Changes to Clinical Disease Activity in Dogs With Idiopathic Inflammatory Bowel Disease

Karin A. Allenspach[1], Jonathan P. Mochel[1], Yingzhou Du[1], Simon L. Priestnall[2], Frances Moore[3], Michael Slayter[4], Aline Rodrigues[5], Mark Ackermann[1], Mark Krockenberger[6], Joanne Mansell[5], WSAVA GI Standardization Working Group*, Nicole Luckschander[7], Chong Wang[1], Jan Suchodolski[8], Nora Berghoff[4], and Albert E. Jergens[1]

Fabrizio Grandi

Abstract

Prior studies have failed to detect a convincing association between histologic lesions of inflammation and clinical activity in dogs with inflammatory bowel disease (IBD). We hypothesized that use of a simplified histopathologic scoring system would improve the consistency of interpretation among pathologists when describing histologic lesions of gastrointestinal inflammation. Our aim was to evaluate the correlation of histopathologic changes to clinical activity in dogs with IBD using this new system. Forty-two dogs with IBD and 19 healthy control dogs were enrolled in this retrospective study. Endoscopic biopsies from the stomach, duodenum, ileum, and colon were independently scored by 8 pathologists. Clinical disease activity was scored using the Canine Inflammatory Bowel Disease Activity Index (CIBDAI) or the Canine Chronic Enteropathy Clinical Activity Index (CCECAI), depending on the individual study center. Summative histopathological scores and clinical activity were calculated for each tissue (stomach, duodenum, ileum, and colon) and each tissue histologic score (inflammatory/morphologic feature). The correlation between CCECAI/CIBDAI and summative histopathologic score was significant ($P < .05$) for duodenum ($r = 0.42$) and colon ($r = 0.33$). In evaluating the relationship between histopathologic scores and clinical activity, significant ($P < .05$) correlations were observed for crypt dilation ($r = 0.42$), lamina propria (LP) lymphocytes ($r = 0.40$), LP neutrophils ($r = 0.45$), mucosal fibrosis ($r = 0.47$), lacteal dilation ($r = 0.39$), and villus stunting ($r = 0.43$). Compared to earlier grading schemes, the simplified scoring system shows improved utility in correlating histopathologic features (both summative histology scores and select histologic scores) to IBD clinical activity.

Fabrizio Grandi

Table 5. Quantitative Simplified Scoring System for Defining Gastrointestinal Inflammation.

Location	Histopathologic Parameter	Grade 0 (Normal)	1 (Mild)	2 (Moderate)	3 (Marked)
Stomach (fundus)					
Morphologic parameter	Fibrosis (number of fibrocytes separating glands)	≤2	3–5	6–10	≥11
Inflammatory parameters	Intraepithelial lymphocytes (lymphocytes per stretch of 50 epithelial cells)	≤2	3–10	11–20	≥21
	Lamina propria lymphocytes and plasma cells (cells per 400× field[a])	≤20	21–50	51–100	≥101
	Lamina propria eosinophils (cells per 400× field)	≤2	3–20	21–50	≥51
	Lamina propria neutrophils (cells per 400× field)	0	≤20	21–50	≥51
Stomach (antrum)					
Morphologic parameter	Fibrosis (number of fibrocytes separating gastric pits or mucous glands)	≤10	11–15	16–20	≥21
Inflammatory parameters	Intraepithelial lymphocytes (lymphocytes per stretch of 50 epithelial cells)	≤2	3–5	4–10	≥11
	Lamina propria lymphocytes and plasma cells (cells per 400× field)	As fundus			
	Lamina propria eosinophils (cells per 400× field)	≤2	3–10	11–50	≥51
	Lamina propria neutrophils (cells per 400× field)	As fundus			

Fabrizio Grandi

Gastrite superficial de mucosa

- Critérios diagnósticos
  - Infiltração de 20% da lâmina própria superficial
  - Edema
  - Ativação de fibroblastos e endotélio
  - Linfocítica
  - Plasmocitária
  - Linfoplasmocitária (maioria)
  - Eosinofílica

Fabrizio Grandi

Gastrite superficial de mucosa

- Possibilidades diagnósticas
  - Gastrite superficial de mucosa, linfoplasmocitária, severa.
  - Gastrite superficial de mucosa, linfoplasmocitária
  - Gastrite superficial de mucosa, linfoplasmocitária e eosinofílica, moderada
  - Gastrite superficial de mucosa (itens marcados a parte)
  - Gastrite por *Helicobacter* spp (helicobacteriose)
  - Gastrite superficial de mucosa, linfoplasmocitária, severa por *Helicobacter* spp.
  - **Gastrite superficial de mucosa, linfoplasmocitária, severa. Negativo ou positivo para *Helicobacter* spp.**
  - **Gastrite crônica, superficial de mucosa, linfoplasmocitária, severa. Negativa ou positivo para *Helicobacter* spp**.

Fabrizio Grandi

Gastrite transmucosa

- Critérios diagnósticos
  - Lâmina própria *full-thickness*
  - Fibrose
  - Edema
  - Nidação e atrofia glandular
  - Infiltrado inflamatório
    - Linfocítica
    - Plasmocitária
    - Linfoplasmocitária (maioria)
    - Eosinofílica

Fabrizio Grandi

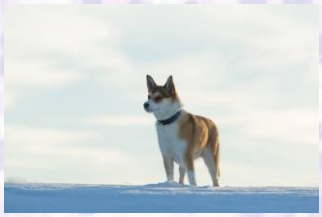
Gastrite atrófica

- Critérios diagnósticos
  - Entidade pouco reconhecida em cães e gatos (lesão residual da gastrite transmucosa)
  - Inflamação crônica
  - Atrofia glandular
  - Fibrose e nidação
  - Regeneração glandular
  - Hiperplasia linfofolicular
  - Redução do número de células parietais
  - Aumento do número de células produtoras de muco

Fabrizio Grandi

Gastrite atrófica

- Critérios diagnósticos
  - Norwegian Lundehund (associação entre carcinoma gástricos e gastrite atrófica)



Fabrizio Grandi

Gastrite ulcerativa

- Critérios diagnósticos
  - Basofilia e *flattening* do epitélio superficial
  - Perda das células produtoras de muco do istmo
  - Expansão de células germinativas no istmo
  - Infiltrado inflamatório mínimo
  - Neutrófilos
  - Causas
    - Abrasão mecânica
    - Estimulo histamínico (*MCT*)
    - Ingestão de produtos químicos
    - Drogas (AINES e AIES)
    - Exercicio (cães de corrida)

Fabrizio Grandi

Gastropatia urêmica

- Critérios diagnósticos
  - Mineralização e necrose das células parietais no terço médio da mucosa gástrica
  - Mineralização da MB glandular e dos vasos
  - Mineralização do musculo liso da MM ou MP

Fabrizio Grandi

Gastropatia por vasculite

- CID em cães
- PIF em gatos

Fabrizio Grandi

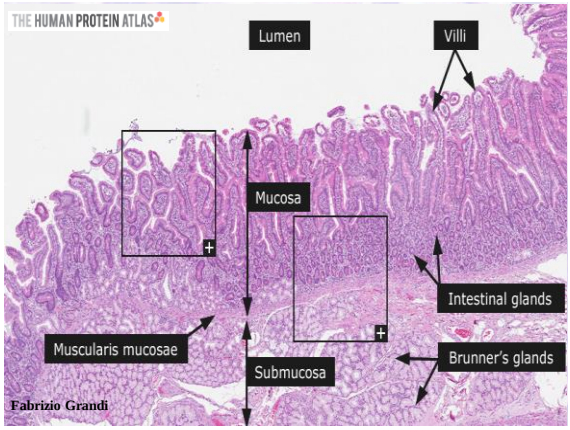
Outros gastrites

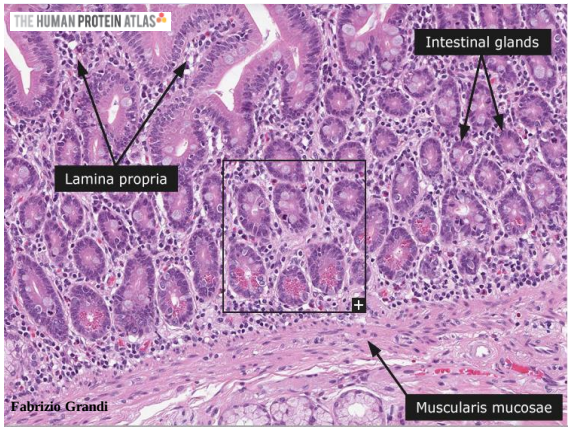
- Parasitárias: *Physaloptera spp* (cães), *Ollulanus spp* (gatos), *Gnathostoma spp, Cylicospirura* spp
- *P. insidiosum*
- *H. pylori*

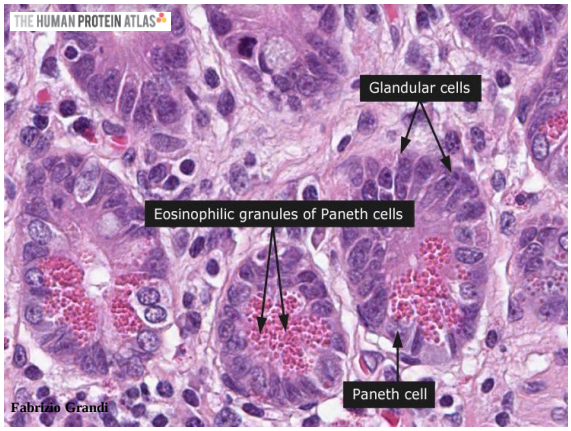
Fabrizio Grandi

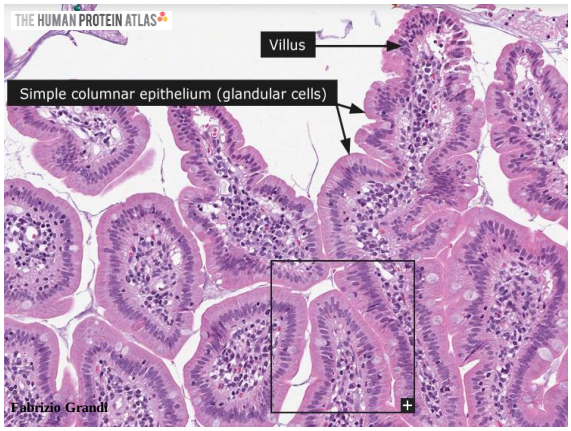
Histologia e histopatologia do intestino delgado: padrões de resposta inflamatória

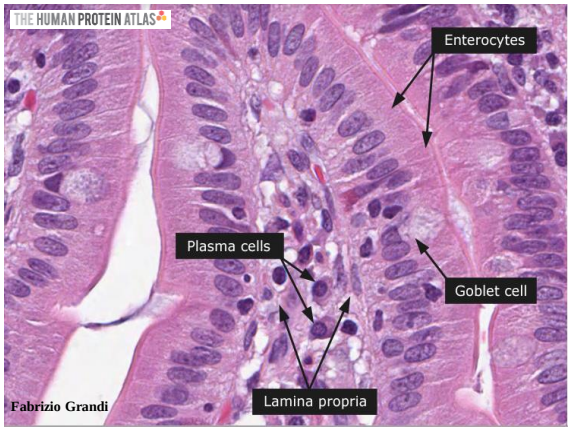
Fabrizio Grandi











Fabrizio Grandi

Classificação das duodenites, jejunites e ileítes

Fabrizio Grandi

Original Article

Correlating Gastrointestinal Histopathologic Changes to Clinical Disease Activity in Dogs With Idiopathic Inflammatory Bowel Disease

Veterinary Pathology
1–9
© The Author(s) 2018
Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/0300985818813090
journals.sagepub.com/home/vet

Karin A. Allenspach[1], Jonathan P. Mochel[1], Yingzhou Du[1], Simon L. Priestnall[2], Frances Moore[3], Michael Slayter[4], Aline Rodrigues[5], Mark Ackermann[1], Mark Krockenberger[6], Joanne Mansell[5], WSAVA GI Standardization Working Group*, Nicole Luckschander[7], Chong Wang[1], Jan Suchodolski[8], Nora Berghoff[9], and Albert E. Jergens[1]

Fabrizio Grandi

Duodenum and ileum					
Morphologic parameters	Villous stunting (as % of normal length)[a]	100	75	50	<25
	Crypt dilation (% of crypts that were dilated, distorted, or containing eosinophilic material/ degenerate neutrophils [crypt abscess])	≤2	3–10	11–25	≥26
	Lacteal dilation (as % of villous width)	≤25	26–50	51–75	≥76
	Surface epithelial injury (% of villi per section)	No erosion or ulceration	≤10 erosion, no ulceration	11–25 erosion and/or ≤10 ulceration	≥26 erosion and/or ≥11 ulceration
Inflammatory parameters	Lamina propria lymphocytes and plasma cells (% area of one 400× villous field or cells between crypts)	≤25, ≤2	26–50, 3–5	51–75, 6–10	≥76, ≥11
	Lamina propria eosinophils (cells per 400× field)	≤3	4–10	11–20	≥21
	Lamina propria neutrophils (cells per 400× field)	0	≤10	11–30	≥31

Fabrizio Grandi

Enterites eosinofílicas

- Critérios diagnósticos
  - Predomínio (?) de eosinófilos na LP
- Causas
  - Parasitárias
  - Hipersensibilidade alimentar (tipo I)/*FRD*

Fabrizio Grandi

Enterites linfoplasmocitárias

- Critérios diagnósticos
  - Predomínio de linfócitos e plasmócitos na LP dos vilos e regiões entre as criptas.
- Causas
  - DIII
  - Diarréia responsiva a antibióticos (*SIBO*)
  - *FDR*
  - "Triadite"

Fabrizio Grandi

Enterites neutrofílicas

- Critérios diagnósticos
  - Predomínio (?) de neutrófilos na LP
- Causas
  - Infecciosas

Fabrizio Grandi

Enterites hemorrágicas ou necro-hemorrágicas

- Critérios diagnósticos
  - Necrose das vilosidades (pontas ou completa)
  - Necrose e regeneração das criptas
  - Encurtamento e fusão de vilosidades
  - Hemorragia em LP
  - Fibrina na superfície dos enterócitos
  - Neutrófilos em LP
  - Bacilos gram + aderidos aos enterócitos e restos necróticos

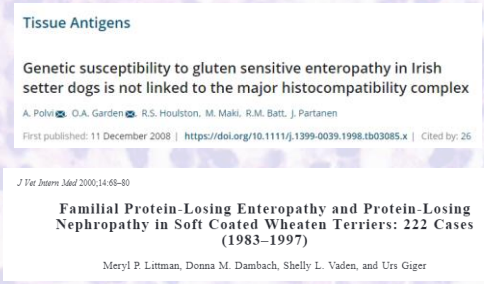

Full Scientific Report

Intestinal lesions in dogs with acute hemorrhagic diarrhea syndrome associated with *netF*-positive *Clostridium perfringens* type A

Miriam Leipig-Rudolph, Kathrin Busch, John F. Prescott, Iman Mehdizadeh Gohari, Christian M. Lepenegger, Walter Hermanns, Georg Wolf, Katrin Hartmann, Jutta Verspohl, Stefan Unterer

Fabrizio Grandi

Enterites associadas a raça


Tissue Antigens

Genetic susceptibility to gluten sensitive enteropathy in Irish setter dogs is not linked to the major histocompatibility complex

A. Polvi, O.A. Garden, R.S. Houlston, M. Maki, R.M. Batt, J. Partanen

First published: 11 December 2008 | https://doi.org/10.1111/j.1399-0039.1998.tb03085.x | Cited by: 26

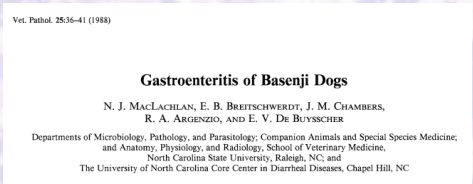
J Vet Intern Med 2000;14:68–80

Familial Protein-Losing Enteropathy and Protein-Losing Nephropathy in Soft Coated Wheaten Terriers: 222 Cases (1983–1997)

Meryl P. Littman, Donna M. Dambach, Shelly L. Vaden, and Urs Giger

Fabrizio Grandi

Enterites associadas a raça


Vet. Pathol. 25:36–41 (1988)

Gastroenteritis of Basenji Dogs

N. J. MacLachlan, E. B. Breitschwerdt, J. M. Chambers, R. A. Argenzio, and E. V. De Buysscher

Departments of Microbiology, Pathology, and Parasitology; Companion Animals and Special Species Medicine; and Anatomy, Physiology, and Radiology, School of Veterinary Medicine, North Carolina State University, Raleigh, NC; and The University of North Carolina Core Center in Diarrheal Diseases, Chapel Hill, NC


JSAP JOURNAL OF SMALL ANIMAL PRACTICE

BSAVA

Protein-losing enteropathy in the Lundehund

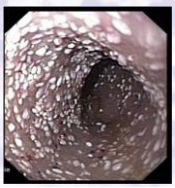
Kjell FlesjÅ, Torstein Yri

First published: January 1977 | https://doi.org/10.1111/j.1748-5827.1977.tb05819.x | Cited by: 28

Fabrizio Grandi

Linfangiectasia

- Critérios diagnósticos
  - Dilatação dos vasos linfáticos da LP das vilosidades ou entre as criptas
  - Edema
  - Encurtamento das vilosidades
  - Vasos linfáticos da submucosa, muscular, serosa e mesentério podem ser acometidos
  - Primária (congênita) ou secundária



Fabrizio Grandi

Fonte: Wikivet

Fabrizio Grandi

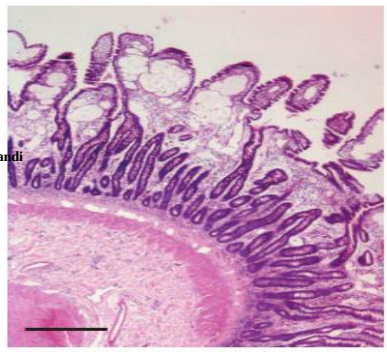


Figure 29-22 Lymphangiectasia. In this full-thickness biopsy there is marked ballooning dilation of the villus lacteals with reduction in the height of the affected villi. There is also lymphatic dilation within the pericryptal mucosa and the submucosa. Hematoxylin and eosin stain; bar = 1 mm.

Linfangite lipogranulomatosa intestinal

- Critérios diagnósticos
  - Dilatação de linfáticos
  - Fibrose
  - Macrófagos epitelióides ou xantomatosos
  - Células gigantes multinucleadas
  - Infiltrado linfoplasmocitário e neutrofílico
  - Cristais de colesterol aciculares

J Vet Intern Med 2014;28:48–51

Focal Intestinal Lipogranulomatous Lymphangitis in 6 Dogs (2008–2011)

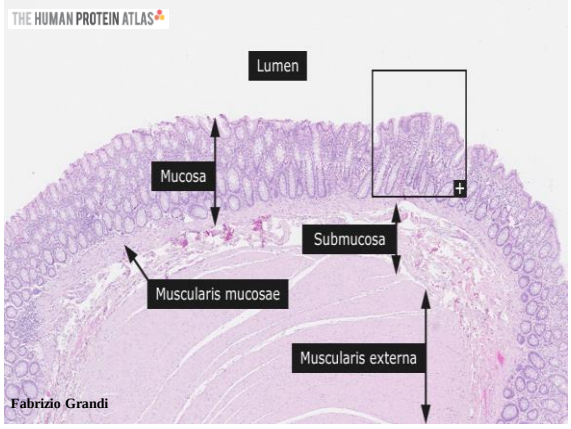
V.E. Watson, M.M. Hobday, and A.C. Durham

Fabrizio Grandi

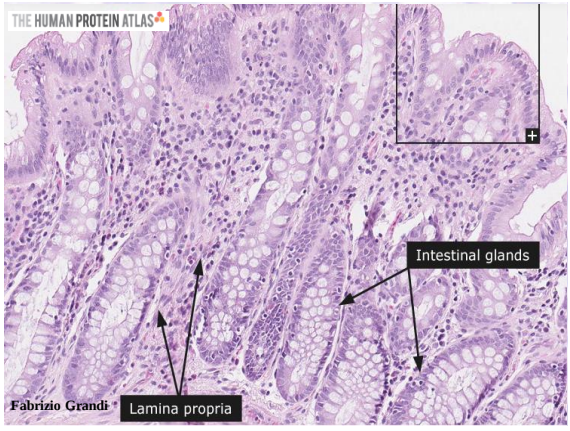
Histologia e histopatologia do cólon:

padrões de resposta inflamatória

Fabrizio Grandi



Fabrizio Grandi



Fabrizio Grandi

Classificação das colites

Fabrizio Grandi

Box 29-1 The Fundamental Rules of Colonic Biopsy Interpretation

- Colonic inflammatory disease is virtually always diffuse and uniform, so numerous biopsies are unnecessary.
- Because even very small decreases in absorptive efficiency can result in profound diarrhea, even very subtle colonic lesions can be clinically significant.
- Because colonic ulceration heals very rapidly and usually without any residual changes, biopsies must be taken during active clinical disease so as to avoid the risk of a misleading false-negative result.
- Leukocytes should not exceed four cell layers between adjacent crypts, and eosinophils should not appear in the superficial half of the mucosa.
- Credible etiologic candidates are rarely seen.

Fabrizio Grandi

Original Article

Veterinary Pathology
1–9
© The Author(s) 2018
Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/0300985818813090
journals.sagepub.com/home/vet

Correlating Gastrointestinal Histopathologic Changes to Clinical Disease Activity in Dogs With Idiopathic Inflammatory Bowel Disease

Karin A. Allenspach[1], Jonathan P. Mochel[1], Yingzhou Du[1], Simon L. Priestnall[2], Frances Moore[3], Michael Slayter[4], Aline Rodrigues[3], Mark Ackermann[1], Mark Krockenberger[6], Joanne Mansell[5], WSAVA GI Standardization Working Group*, Nicole Luckschander[7], Chong Wang[1], Jan Suchodolski[3], Nora Berghoff[8], and Albert E. Jergens[1]

Fabrizio Grandi

Colon					
Morphologic parameters	Crypt dilation and distension (% of crypts per section)	0	≤25	26–50	≥51
	Fibrosis (number of fibrocytes separating crypts)	≤2	3–5	6–10	≥11
	Goblet cell numbers (% reduction from normal)	0	≤25	26–50	≥51
	Surface epithelial injury (% of villi per section)		As duodenum and ileum		
Inflammatory parameters	Lamina propria lymphocytes and plasma cells (cells between crypts)	≤5	6–10	11–20	≥21
	Lamina propria eosinophils (cells per 400× field)	≤2	3–10	11–20	≥21
	Lamina propria neutrophils (cells per 400× field)		As duodenum and ileum		
	Lamina propria macrophages (cells per 400× field)	≤2	3–20	21–50	≥51

Fabrizio Grandi

Colite linfoplasmocitária (e eosinofílica) idiopática de mucosa

- 90% dos casos em cães e gatos
- Critérios diagnósticos
  - Edema
  - Fibrose
  - > 4 colunas de plasmócitos e linfócitos entre as criptas (Brian Wilcock)
  - Ulceração presente ou ausente

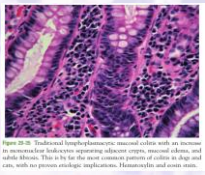


Figure 20-18 Traditional lymphoplasmocytic mucosal colitis with an increase in mononuclear leukocytes separating adjacent crypts, mucosal edema, and subtle fibrosis. This is by far the most common pattern of colitis in dogs and cats, with no proven etiologic implications. Hematoxylin and eosin stain.

Fabrizio Grandi

Colite eosinofílica

- Critérios diagnósticos
  - Predomínio (?) de eosinófilos na LP
  - Presença de eosinófilos na metade superior da lâmina própria

Fabrizio Grandi

Colite granulomatosa de mucosa

- Critérios diagnósticos
  - Predomínio de macrófagos na LP
  - Ex. histoplasmose e colite ulcerativa histiocítica

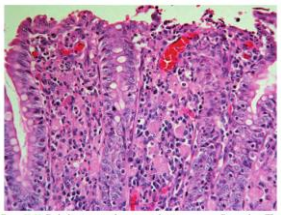


Figure 20-16 Early histiocytic ulcerative colitis in a young Boxer dog. The early lesion is usually found deep in the mucosa, associated with epithelial basophilia and flattening as evidence for ongoing superficial ulceration. Hematoxylin and eosin stain.

Fabrizio Grandi

Colite ulcerativa histiocítica

- Bulldog Frânces e Boxers
- Critérios diagnósticos
  - Predomínio de macrófagos *PAS* positivos na LP
  - Erodo-ulcerações colônicas

Fabrizio Grandi

ELSEVIER
Journal of Comparative Pathology
Volume 122, Issues 2–3, February 2000, Pages 163-175

Regular Article

An Immunohistochemical Study of Histiocytic Ulcerative Colitis in Boxer Dogs

A.J. German [a, b], E.J. Hall [a], D.F. Kelly [c], A.D.J. Watson [d], M.J. Day [b]

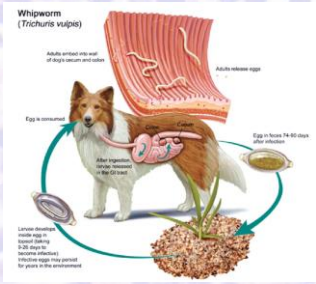
Show more

https://doi.org/10.1053/jcpa.1999.0353

Get rights and content

Colite ulcerativa

- Etiologia
  - *T. foetus* em gatos
  - *T. vulpis* em cães



Fabrizio Grandi

Colite de submucosa e transmural

- Padrão morfológico com alta importância diagnóstica
- Etiologia
  - PIF
    - Critérios diagnósticos
      - Vasculite necrotizante de submucosa
      - Edema e hemorragia
      - Necrose vascular
      - Mucosa normal
      - Neutrofílica, granulomatosa ou piogranulomatosa
  - *P. insidiosum*

Fabrizio Grandi