

# Diseases of the GI-Tract in Dogs and Cats

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## specific gastrointestinal signs I

- dysphagia (difficult or painful swallowing)
  - oral dysphagia
    - dropping of food, leaking of water, interrupted chewing
  - pharyngeal dysphagia
    - repeated swallowing efforts, periprandial regurgitation
  - esophageal dysphagia
    - regurgitation: passive throwing up of undigested bolus
- gagging
  - swallowing attempts without presence of bolus

## specific gastrointestinal signs II

- vomiting (active process, three phases)
  - nausea
    - hypersalivation, yawning, repeated swallowing attempts
  - retching
    - abdominal wall contractions without ejection of vomitus
  - vomiting
    - forceful ejection of gastric contents, repetitive strong abdominal wall contractions
- retching
  - repetitive efforts to vomit without expulsion of vomitus

## specific gastrointestinal signs III

- diarrhea (feces contain more water than normal)
  - small bowel diarrhea
    - fecal volume increased, slightly increased frequency of defecation
  - large bowel diarrhea
    - mucus, hematochezia, increased frequency (many defecations with small volume)
- other stool abnormalities
  - melena: black and tarry stools, digested blood
  - hematochezia: fresh blood, large bowel or recto-anal bleeding
  - ribbon-like stools: narrowing of colonic, rectal or anal passage
  - acholic feces: clay like, bile duct obstruction, destructive cholangitis

## specific gastrointestinal signs IV

- flatulence and borborygmus (rumbling of GI-tract)
  - large amounts of intestinal gas, abdominal discomfort
  - dietary history (legumes, soy-beans, excess fat)
- dyschezia (difficult or painful defecation)
  - tenesmus: straining to defecate
    - clinical manifestation of dyschezia or colonic / recto-anal discomfort
- constipation (dry, hard feces, decreased no. of bowel movements)
- fecal incontinence (uncontrolled loss of feces, stools normal)
- anal pruritus (licking, biting, scratching, scooting)
- abdominal pain
  - prayer position, bruxism (teeth grinding), restlessness



## know your differentials I

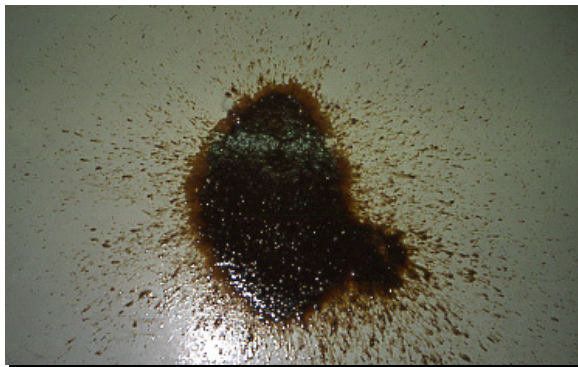
### □ vomiting I

- gastric disease
  - gastritis, parasites, foreign body, obstruction, ulceration, neoplasia, GDV, hiatal hernia, motility disorders, pyloric stenosis, gastric antral mucosal hypertrophy, helicobacter
- small intestinal disease
  - parasites, IBD, foreign body, enteritis, bacterial overgrowth, HGE, neoplasia, viruses, intussusception, nonneoplastic infiltrative disease
- large intestinal disease
  - colitis, obstipation, parasites
- dietary
  - indiscretion, intolerance, allergy, pancreatitis

## know your differentials II

### □ vomiting II

- drugs
  - chemotherapeutics, antibiotics, NSAIDs, cardiac glycosids, apomorphine, xylazine, penicillamine, alcohol
- extraalimentary tract disease
  - peritonitis, hepatobiliary disease, neoplasia, uremia, DM/ketoacidosis, hyperthyroidism, hypoadrenocorticism, hepatic disease, septicemia, endotoxemia, pyometra, acid-base disorders, electrolyte disorders, hypertriglyceridemia, gastrinoma, mastocytosis
- intoxicants
  - inorganic, organic, plant toxins
- neurologic disease
  - epilepsy, neoplasia, meningitis, increased intracranial pressure, dysautonomia, excitement, vestibular syndrome



## know your differentials III

### □ acute diarrhea

- diet
  - intolerance / allergy, rapid dietary change, bacterial food poisoning, indiscretion
- parasites
  - helminths, protozoa (giardia, tritrichomonas, coccidia)
- infections
  - viral (parvo, corona, FeLV, FIV, distemper, rota), bacterial (salmonella, clostridium perfringens, E. coli, campylobacter, yersinia etc.), rickettsial (salmon poisoning)
- other causes
  - HGE, intussusception, IBS, toxins, drugs, pancreatitis, hypoadrenocorticism

## know your differentials IV

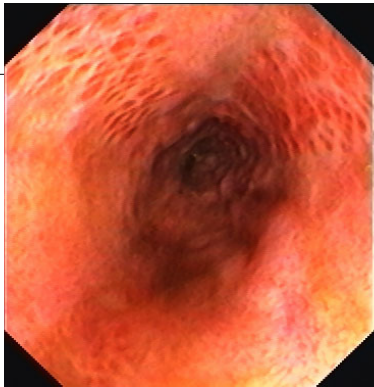
### □ chronic diarrhea

- small bowel diarrhea
  - food intolerance / allergy, IBD, lymphoma, EPI, chronic parasitism (hookworm, giardia), histoplasmosis, lymphangiectasia, partial obstruction, chronic intussusception, SIBO / ARD
- large bowel diarrhea
  - food intolerance / allergy, parasitism (whipworm, giardia, tritrichomonas), clostridial colitis, IBS, histoplasmosis, IBD (lymphocytic-plasmocytic / eosinophilic / chronic ulcerative / histiocytic ulcerative colitis), neoplasia, secondary infections due to FeLV / FIV

## diseases of the esophagus I

### □ cricopharyngeal achalasia / dysphagia

- failure of the UES to relax
- multiple swallowing attempts, food falling from mouth
- congenital or aquired (+/- myasthenia gravis, laryngeal paralysis, esophageal stricture)
- Dx: contrast videofluoroscopy
- Tx: cricopharyngeal myectomy
- complications: aspiration pneumonia
- prognosis: relatively good, immediate relief after surgery



## diseases of the esophagus II

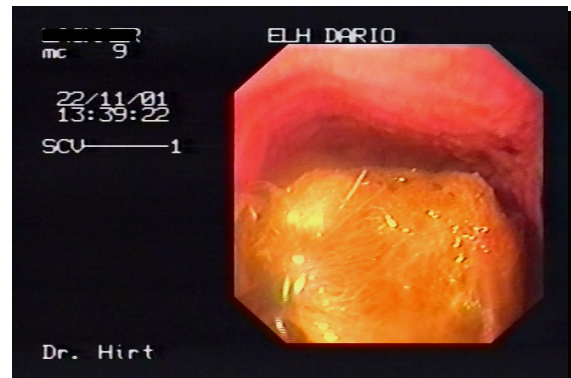
### □ esophagitis

- acute or chronic inflammatory disorder
- dysphagia, ptyalism, regurgitation, gagging, inappetence, repeated swallowing, odynophagia, lethargy, weight loss
- corrosive substances, foreign bodies, thermal burns, infections, persistent vomiting, gastroesophageal reflux
- Dx: endoscopy, histopathology, (leukocytosis, fluoroscopy)
- Tx: withhold food (?), (gastrostomy tube), sucralfate, gastric acid suppression, prokinetic agents, analgetics
- complications: aspiration pneumonia, loss of esophageal distensibility
- prognosis: usually good

## diseases of the esophagus III

### □ gastroesophageal reflux

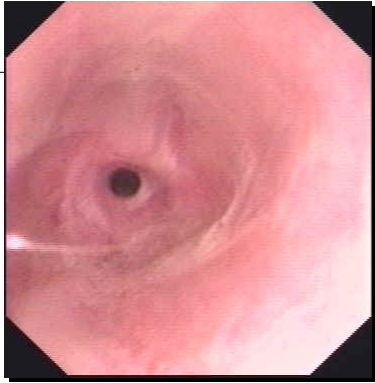
- relaxation of LES – reflux into esophagus
- regurgitation, eructation followed by swallowing, esophagitis-signs
- general anesthesia, chronic vomiting, hiatal hernia, esophageal foreign body, idiopathic
- Dx: contrast videofluoroscopy, endoscopy
- Tx: sucralfate, gastric acid suppression, prokinetic agents, analgetics as needed, fat-restricted diet (?) (dietary fat may delay gastric emptying and decrease LES-tone)
- complications: esophagitis
- prognosis: usually good



## diseases of the esophagus IV

### □ esophageal foreign bodies

- least distensible parts of esophagus: thoracic inlet, heart base, cardia
- regurgitation, odynophagia, ptyalism, inappetence, dysphagia, halitosis, retching, gagging
- dogs: bones, fishhooks, food, chew treats; cats: fishhooks, needles, trichobezoars
- Dx: history, radiographs, (contrast study)
- Tx: removal of FB (endoscopy, surgery), esophagitis-tx, antibiotics (loss of mucosal barrier function), analgetics, corticosteroids (?), (gastrostomy tube)
- complications: esophagitis, perforation, strictures
- prognosis: generally good



## diseases of the esophagus V

- esophageal strictures
  - fibrous connective tissue production after damage of submucosal and muscular layers
  - regurgitation, ptyalism, dysphagia, odynophagia, inappetence, weight loss
  - foreign bodies, caustic substances, gastroesophageal reflux, (cats: oral doxycycline)
  - Dx: radiographs, contrast videofluoroscopy, esophagoscopy
  - Tx: balloon dilation (endoscopic or fluoroscopic guidance), (surgery in refractory cases), esophagitis-tx, corticosteroids
  - complications: esophagitis, perforation during dilation, aspiration pneumonia
  - prognosis: 80 % good to excellent outcome with balloon dilation

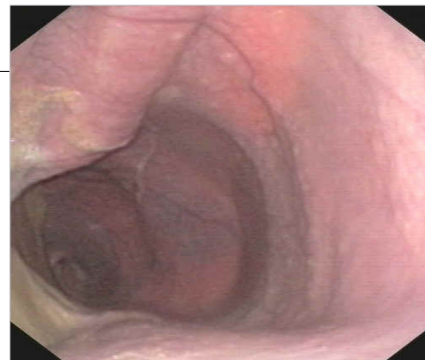


## diseases of the esophagus VI

- esophageal diverticula
  - pouch-like dilation of esophageal wall
  - food trapping – postprandial dyspnea, regurgitation, odynophagia, anorexia
  - congenital vs. acquired, pulsion diverticula (outpouching of mucosa through defect in outer layers) vs. traction diverticula (fibrous tissue after inflammation in thoracic cavity)
  - Dx: radiographs, contrast radiography, esophagoscopy
  - Tx: bland, soft diet fed in upright position; large diverticula: surgical excision
  - prognosis: small, conservative management: good; large, surgery necessary: less favorable

## diseases of the esophagus VII

- airway-esophageal fistula
  - communication between esophagus and trachea or a main-stem bronchus
  - coughing or dyspnea after eating or drinking, regurgitation, anorexia, fever, lethargy
  - congenital (Cairn terrier), acquired (perforating foreign bodies)
  - Dx: radiographs (FB, pneumonia), contrast esophagram (barium), leukocytosis, endoscopy
  - Tx: surgical correction (lung lobectomy)
  - complications: aspiration pneumonia
  - prognosis: good if animal survives surgery



## diseases of the esophagus VIII

- megaesophagus
  - dilation of esophageal body, poor to no peristalsis
  - regurgitation, ptyalism, weight loss
  - congenital vs. acquired (myasthenia gravis, polyneuro- and myopathies, thymoma, hypoadrenocorticism, dysautonomia, hypothyroidism (?), idiopathic – possibly defect in vagal afferent innervation)
  - Dx: radiographs, (contrast videofluoroscopy)
  - Tx: treat underlying disease, supportive care (high calorie diet, frequent small upright feedings, gastrostomy tube, gruel consistency or „meatballs“); smooth muscle prokinetics: only in cats (efficacy?)
  - complications: aspiration pneumonia
  - prognosis: guarded

## diseases of the esophagus IX

- hiatal hernia
  - abnormal / stretched phrenicoesophageal ligament allows herniation of esophagus, stomach, (other organs) into thorax; sliding hernia: esophagus & part of stomach slide up as a unit; paraesophageal hiatal hernia: next to esophagus
  - signs of gastroesophageal reflux
  - congenital vs. acquired (trauma)
  - Dx: radiographs (cave often dynamic condition), contrast videofluoroscopy
  - Tx: congenital: surgical correction; acquired: small frequent meals, gastric acid suppression, prokinetics, sucralfate
  - prognosis: usually good

## diseases of the esophagus X

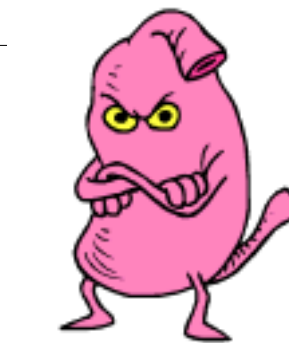
- gastroesophageal intussusception
  - invagination of stomach into thoracic esophagus
  - acute and severe signs of esophageal obstruction with regurgitation, pain, dysphagia, dyspnea, hematemesis, death possible (decreased venous return)
  - mostly in puppies, predisposing factors: megaesophagus, incompetency of LES
  - Dx: radiographs, endoscopy
  - Tx: surgery, (endoscopy)

## diseases of the esophagus XI

- vascular ring anomalies
  - malformation, „vascular ring“ constricts esophagus, most commonly persistent right aortic arch
  - regurgitation at the time of weaning, coughing, lethargy
  - congenital
  - Dx: palpation, radiographs
  - Tx: surgical correction (thoracoscopy)
  - complications: persistently dilated esophagus
  - prognosis: good

## diseases of the esophagus XII

- neoplasia
  - less than 0.5% of all canine tumors; typically malignant
  - signs of esophageal obstruction, pain, chronic upper respiratory signs
  - primary: carcinomas, plasma cell tumor, osteosarcoma; secondary: locally invasive or distant metastasis
  - Dx: contrast esophagram, esophagoscopy (biopsies)
  - Tx: surgical (rarely possible), (chemotherapy, radiation), supportive care (gastrostomy tube)
  - complications: paraneoplastic syndromes (hypertrophic osteopathy), tracheal invasion, aspiration pneumonia, caudal vena cava compression
  - prognosis: poor (most cases: survival < 1 month)

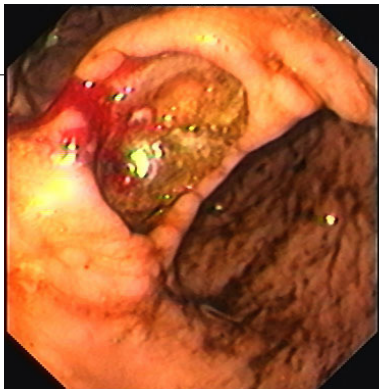


## diseases of the stomach I

- acute gastritis
  - acute inflammatory disease
  - vomiting, other upper GI - signs
  - dietary hypersensitivity, dietary indiscretion, inappropriate food, foreign bodies, drugs, chemicals, heavy metals, infections (viral, parasitic, helicobacter?)
  - Dx: signalment, history, clinical signs, physical examination, (endoscopy)
  - Tx: withhold food, iv-fluids, potassium supplementation, bland commercial or home-cooked diet (e.g. chicken and rice), antiemetics, gastric acid inhibitors
  - prognosis: good

## diseases of the stomach II

- chronic gastritis
  - chronic inflammatory disease (lympho-plasmocytic, eosinophilic, hypertrophic, atrophic gastritis)
  - chronic persistent or intermittent vomiting
  - in most cases idiopathic / immune-mediated, (parasitism, metabolic disorders, helicobacter in cats?)
  - Dx: mucosal biopsies (endoscopy)
  - Tx: correct underlying cause, dietary management (single novel protein and carbohydrate sources, 2-week strict trial), immunosuppression, gastric acid inhibitors



## diseases of the stomach III

- gastric ulceration
  - area of deep mucosal damage (muscularis or deeper)
  - chronic vomiting, hematemesis, melena, inappetence
  - drugs (NSAIDs, corticosteroids), infiltrative disease (neoplasia, IBD), metabolic disease (hepatopathy, uremia), gastric hyperacidity (gastrinoma, MCT), toxins, DIC, foreign bodies, hypovolemia, pancreatitis, septic shock, stress
  - Dx: gastroscopy, contrast radiographs, (surgery)
  - Tx: gastric acid inhibitors, sucralfate, iv-fluids (sufficient mucosal blood flow)



## diseases of the stomach IV

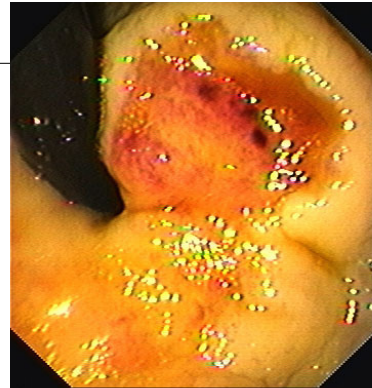
- gastric dilation-volvulus
  - gastric distension, rotation (mostly to the left)
  - acute signs, abdominal distension, restlessness, unproductive retching, salivation, dyspnea, pain, shock
  - large, deep-chested, older dogs
  - Dx: history, signalment, physical examination, radiographs (right-lateral recumbency, „double bubble is trouble“)
  - Tx: iv-fluids, decompression, surgery with gastropexy, follow-up: meat-based, canned, highly digestible diet at least 3 x daily
  - complications: gastric necrosis, occluded venous return – shock, reperfusion injury, splenic torsion, cardiac arrhythmias
  - prognosis: mortality of 15 – 20%



## diseases of the stomach V

### □ motility disorders

- accelerated / delayed gastric emptying, retrograde transit
- intermittent postprandial vomiting of undigested food (complete emptying of a normal meal from stomach 7-8 hours in healthy dogs)
- mechanical disorders (pyloric stenosis, foreign body, hypertrophic gastritis, intra-abdominal masses) vs. functional disorders (inflammatory / infiltrative lesions, ulceration, altered electrolytes, acid-base disturbances, recent abdominal surgery, DM, drugs)
- Dx: contrast radiographs (barium-impregnated polyethylene spheres BIPS), ultrasonography, C13-based tests, scintigraphy
- Tx: prokinetics, low-fat, highly digestible blended or liquid diet (multiple feedings per day), pyloroplasty for pyloric hypertrophy



## diseases of the stomach VI

### □ neoplasia

- rare in dogs and cats
- vomiting, malignant ulceration, hematemesis, melena, anemia, nausea
- dogs: carcinomas, sarcomas, round cell tumors; cats: most commonly lymphoma
- Dx: contrast radiographs, ultrasonography (mural thickening, loss of wall layering, decreased motility), biopsies (gastroscopy, surgery)
- Tx: surgery, (chemotherapy)
- complications: tumor invasion, metastasis, hypochloremic metabolic alkalosis, iron deficiency anemia
- prognosis: very poor

## small intestinal disease I

### □ viral infections

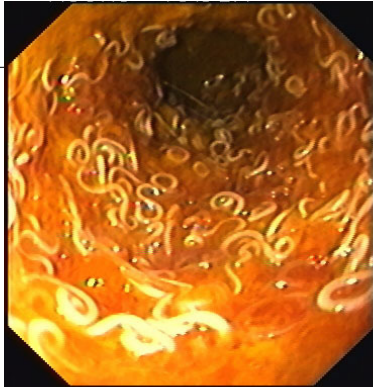
- canine parvovirus enteritis (CPV-2)
- canine distemper virus infection (CDV)
- feline coronavirus infection (FeCoV)
- feline panleukopenia (FPV)
- feline leukemia virus (FeLV)
- feline immunodeficiency virus (FIV)



## small intestinal disease II

### □ bacterial infections

- resident bacterial flora: preserves anatomical structures, enhances digestion and absorption, prevents colonization by pathogenic bacteria, positively influences enteric immune system, can be modulated by diet / pre- and probiotic agents
- pathogenic bacteria – often opportunistic in patients with other intestinal diseases
- cave when using antibiotics – may lead to resistant strains
- campylobacter, clostridia, salmonella, yersinia, E. coli



### small intestinal disease III

- parasitic diseases
  - common in dogs and cats – fecal flotation in all patients with acute vomiting and/or diarrhea
  - helminths:
    - roundworms
    - hookworms
    - cestodes
  - protozoal infections:
    - giardia
    - cryptosporidium
    - coccidia
    - tritrichomonas foetus



### small intestinal disease IV

- intestinal obstruction
  - foreign bodies, intussusception, intestinal torsion, neoplasia
  - complete: severe acute vomiting, dehydration, shock; partial: chronic vomiting / diarrhea
  - Dx: palpation, radiographs, ultrasonography
  - Tx: surgery, antibiotics (intestinal perforation, bacterial translocation)
  - complications: bowel necrosis, perforation, endotoxemia, shock
  - prognosis: dependant on cause, grave for intestinal volvulus

### small intestinal disease V

- hemorrhagic gastroenteritis (HGE)
  - etiology unknown, anaphylactic reactions to enteric toxins?
  - peracute onset of bloody vomiting and diarrhea, often small breed dogs
  - Dx: clinical signs, extreme hemoconcentration (PCV up to 70 – 80%)
  - Tx: aggressive fluid therapy, supportive care
  - complications: leukopenia, sepsis, coagulation abnormalities
  - prognosis: good with intensive therapy

### small intestinal disease VI

- short bowel syndrome
  - removal of more than 2/3 of small intestine
  - small intestinal diarrhea due to severe malabsorption (reduced mucosal surface)
  - ileum resection: malabsorption of bile salts and cobalamin
  - ileocolic valve resection: antibiotics because of bacterial overgrowth in small intestine
  - post-operative period: i.v. fluid and electrolyte replacement, oral feeding to prevent starvation of mucosal epithelium, fat-restricted oligomeric liquid diet – gradual transition to solid food, (cobalamin supplementation)
  - prognosis: variable; life-long diarrhea possible



## small intestinal disease VII

- motility disorders
  - after abdominal surgery, during ischemic / inflammatory conditions (peritonitis, pancreatitis, parvovirus), in malabsorptive disorders (decreased transit time), hypothyroidism (dogs), hyperthyroidism (cats)
  - Tx: dietary management (small amounts of low-fat, low-protein diet frequently), prokinetics
  - feline dysautonomia
    - degeneration of autonomic ganglia
    - constipation, decreased anal tone, dysuria, mydriasis, vomiting, regurgitation, diarrhea
    - Tx: supportive
    - prognosis: poor

## small intestinal disease VIIa

- microflora alterations I
  - SIBO, ARD
  - alterations of normal microflora, no abnormal increase in bacterial numbers
  - bacterial colonization regulated by secretion of gastric acid and antibacterial factors (pancreatic and biliary secretions) and by intestinal motility
  - primary (idiopathic) vs. secondary SIBO (small intestinal stasis, decreased gastric output, EPI, decreased mucosal immunity)

## small intestinal disease VIIb

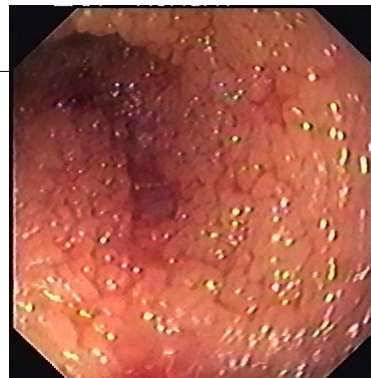
- microflora alterations II
  - bacteria: deconjugate bile acids (fat malabsorption), produce toxins and metabolites (enterocytic damage), compete with host cells for nutrients (cobalamin)
  - chronic intermittent diarrhea, weight loss, borborygmus / flatulence, steatorrhea
  - Dx: clinical signs, cobalamin ↓, folate ↑, response to antibiotics
  - Tx: broad-spectrum antibiotics, treat underlying cause, cobalamin supplementation, dietary management: highly digestible, fat restricted diet containing a prebiotic (fructo-oligosaccharides), probiotics

## small intestinal disease IXa

- protein-losing enteropathies (PLE) I
  - non-selective and excessive loss of proteins into the intestinal lumen (increased mucosal permeability, mucosal ulceration, altered lymphatic drainage)
  - diarrhea, anorexia, weight loss
  - intestinal lymphangiectasia, IBD, adverse food reactions, SLE, viral / bacterial GE, neoplasia, mechanical enteropathy, ulcers (NSAIDs), venous hypertension

## small intestinal disease IXb

- protein-losing enteropathies (PLE) II
  - Dx: hypoproteinemia, (lymphopenia, hypocholesterolemia), hypalbuminemia (exclude other causes: hepatic failure, renal disease, blood loss, severe skin disease),  $\alpha$ 1-proteinase inhibitor (↑ in fecal samples of PLE-patients), gastrointestinal biopsies
  - Tx: treat underlying disease, plasma / haes transfusions as needed, diet: highly digestible, low fat, hydrolyzed protein if severe hypalbuminemia, (medium chain triglyceride oil), (sodium cromoglycate – reduces gut permeability), diuretics if needed
  - complications: ascites, pleural effusion, thromboembolism, edema



## small intestinal disease X

- neoplasia
  - malignant (lymphoma, carcinoma, leiomyosarcoma), benign (polyp, leiomyoma)
  - generally older animals, miniature breeds at increased risk for MCT
  - weight loss, vomiting, anorexia, melena, abdominal distension, lethargy
  - paraneoplastic syndromes: hypoglycemia, nephrogenic diabetes insipidus (leiomyosarcoma)
  - Dx: palpation, ultrasonography, contrast radiography, FNA, biopsy, (anemia, leukocytosis, hypoproteinemia)
  - Tx: surgery (after staging, metastasis common), chemotherapy (lymphoma)
  - complications: rupture, peritonitis, ileus

## large intestinal disease I

- parasites
  - whipworms (trichuris)
    - acute or chronic large bowel diarrhea in dogs, anemia
    - puppies and dogs in contaminated environments
    - Dx: fecal flotation, diagnostic anthelmintic therapy, (eosinophilia, anemia, hypoproteinemia)
  - prototheca
    - chronic colitis, ocular changes in dogs
    - colorless unicellular alga
    - Dx: biopsies, PAS-stain!
  - tritrichomonas foetus
    - young, densely housed cats
    - flagellated protozoal parasite
    - Dx: fecal smear, culture, PCR

## large intestinal disease II

- irritable bowel syndrome (IBS)
  - 10 - 15% of dogs with chronic large bowel diarrhea (+/- bloating, nausea, vomiting, abdominal pain; hematochezia uncommon)
  - no structural, biochemical or microbiological abnormalities
  - often hyperexcitable, unmanageable dogs with abnormal personality traits
  - Dx: exclusion of other causes (fecal examinations, dietary trials, colonoscopy, biopsies)
  - Tx: behavioral modification, highly digestible diets with a source of soluble fiber, motility modifying agents, spasmolytics, sedatives
  - prognosis: guarded

## large intestinal disease III

- fiber-responsive large bowel diarrhea (FRLBD)
  - chronic intermittent large bowel diarrhea with hematochezia, mucus, tenesmus, (vomiting, inappetence), middle aged dogs, dogs suffering from IBS
  - pathophysiology unknown (clostridium perfringens enterotoxigenesis?)
  - Dx: exclusion of other causes, response to fiber supplementation
  - Tx: highly digestible low-fiber diet supplemented with soluble fiber (psyllium), (treatment for IBS)
  - prognosis: very good

## large intestinal disease IVa

- feline megacolon I
  - obstipation in cats idiopathic (62 %), orthopedic or neurological
  - dilated megacolon: end stage of idiopathic cases, permanent loss of colonic structure and function; hypertrophic megacolon: consequence of obstructive lesions
  - constipation: infrequent or difficult defecation; obstipation: permanent loss of function
  - pathogenesis: functional disturbance of colonic smooth muscle
  - middle aged, male cats

## large intestinal disease IVb

- feline megacolon II
  - Dx: digital rectal examination, radiographs, (colonoscopy, contrast radiographs)
  - Tx: treat underlying cause, dietary modification, water enemas, laxatives, colonic prokinetic agents, subtotal colectomy unresponsive cases
  - prognosis: often only one or two constipation-episodes; mild – moderate: good with medical management; severe: favorable with surgery



## large intestinal disease V

- neoplasia
  - dogs: middle aged to old, male, purebred dogs, adenomatous polyps, carcinoma; cats: lymphoma, adenocarcinoma
  - signs: dogs hematochezia, tenesmus, dyschezia, rectal bleeding; cats less obvious (masses often in proximal segments) – weight loss, anorexia, vomiting, diarrhea
  - Dx: digital rectal examination, radiographs, ultrasonography, CT, colonoscopy, biopsy
  - Tx: surgery after staging, (chemotherapy, piroxicam)
  - complications: paraneoplastic syndromes (hypoglycemia, erythrocytosis, leukocytosis)
  - dogs: Best prognosis for rectal polyps or smooth muscle tumors, worst for patients with MCT; cats: poor prognosis



## adverse reactions to food

- GI- and dermatological signs
- immunological reactions
  - food allergy
  - probably type I (IgE-mediated)
  - response minutes to hours after ingestion, systemic reactions: antigen-escape from gut – sensitized basophils or mast cells in skin
- non-immunological reactions
  - dietary indiscretion or food intolerance (metabolic, pharmacological, food poisoning)
- Dx: dietary elimination trial most important tool

## inflammatory bowel disease (IBD)

- persistent or recurrent GI-signs, inflammatory infiltration of mucosa, known causes (chronic infection, food allergy...) ruled out
- etiology? Probably breakdown of immunological tolerance to luminal antigens, genetic factors
- lympho-plasmocytic, eosinophilic, granulomatous
- German Shepherd, Basenjis, Shar Peis, Soft-coated Wheaten Terriers, Siamese cats
- Dx: endoscopy, biopsies
- Tx: immunosuppressive, antibacterial, dietary modification

