Question

A 10-year old male Labrador retriever presents to you with complaints of tenesmus and a swelling near his anus (see image). On examination, there is a fluctuant swelling lateral to the anus, and on rectal exam, there is a lateral dilatation of the rectum. What is the most likely diagnosis?

- Perineal hernia
- Apocrine gland anal sac adenocarcinoma
- Perianal adenoma
- Megacolon

Explanation - The correct answer is perineal hernia. **Adult intact male** dogs (and cats) are at increased risk of perineal hernias. The deviation of the rectum on rectal palpation is how the diagnosis is usually made. The cause is often not identified, but it frequently occurs as a sequela to chronic tenesmus.

Question

A 9-year old male, neutered German Shepherd dog is presented to your clinic for evaluation of tenesmus, tail chasing, and hematochezia. Malodorous mucopurulent discharge is noted near his anus. On examination, you find multiple ulcerations around his perineum. Rectal examination reveals reduced anal tone and mucosal thickening. What are your treatment recommendations for this dog?

- Initiate broad-spectrum antibiotics to treat for an infected anal gland abscess
- Initiate therapy with cyclosporine
- Initiate therapy with metronidazole
- Initiate chemotherapy with the alkylating agent, melphalan, as this is the treatment of choice for anal sac adenocarcinoma
- Surgically correct with a 360-degree anoplasty

Explanation - The signalment, history and clinical signs are most consistent with a **perianal fistula**. Although the pathogenesis is not fully understood, this disease is thought to be primarily **immune-mediated**. The treatment of choice for perianal fistula is medical management with **cyclosporine**, as resolution is achieved in greater than 65% of dogs. Surgical correction may lead to fecal incontinence or stricture formation; however surgery for removal of the anal sacs in combination with cyclosporine has recently shown promise.

If this was an anal gland abscess, lancing the abscess and drain placement with systemic antimicrobial therapy would be indicated. If you suspected this to be a cancerous process, a minimum database including CBC, chemistry, thoracic radiographs and abdominal ultrasound are recommended for disease staging. The treatment of choice for anal sac adenocarcinoma is surgical resection, followed by adjunct therapy.

Question

Which of these is a correct description of how lactulose works in the treatment of hepatic encephalopathy?

- It kills ammonia producing bacteria in the colon.
- It acts centrally to decrease the neuromodulatory effects of ammonia.
- It causes decreased colonic pH, preventing ammonia absorption.
- It slows down the passage of food, leading to more gradual uptake of ammonia

Explanation - The correct answer is that it decreases colonic pH preventing absorption of ammonia. Lactulose is an easily fermented carbohydrate that is metabolized to an acid in the gut. This lowers colonic pH, which keeps ammonia in its ionized form, NH4+, rather than as NH3. The ionized form is not absorbed and is excreted. Lactulose also acts through a number of other mechanisms. It is a cathartic and causes decreased intestinal transit time, leading to decreased absorption of ammonia. It also prevents ammonia formation through a process known as catabolite repression. Finally, it is a carbohydrate source which can be used by colonic flora as an alternative to protein, preventing ammonia formation.

Question

A 6-year old Labrador Retriever presents to your clinic with a sudden onset of anorexia, depression, vomiting and diarrhea. This dog has a history of going on a fishing trip with the owner approximately one week ago. CBC results include a leukocytosis and thrombocytopenia. A low albumin is noted on the chemistry panel. On fecal sedimentation, trematode eggs are visualized. What is the most likely diagnosis?

- Parvovirus
- Cryptosporidium
- Salmon-poisoning disease
- Salmonella

Explanation - The correct answer is salmon-poisoning disease. In order to determine the correct diagnosis you need to put together several key pieces of information. The signalment gives you a heads up in that this dog is a sporting breed. The history practically gives away the answer when you put it together with the physical exam findings. The CBC and Chemistry results are not all that rewarding. The fecal sedimentation results should reinforce your suspicion that this is salmon poisoning. Remember, the dog eats the fish which had a fluke (Nanophyetus salmincola) which had Neorickettsia helminthoeca.

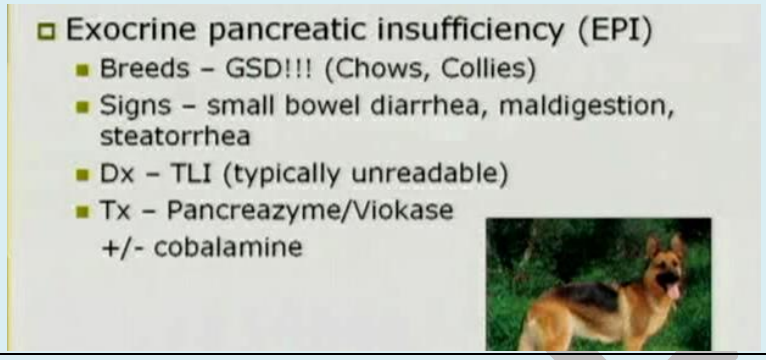
Question

What is the diagnostic test of choice for diagnosing exocrine pancreatic insufficiency?

- Serum cobalamin/folate levels
- TLI (trypsin-like immunoreactivity)
- Fecal float and smear
- PLI (pancreatic lipase immunoreactivity)

Explanation - The correct answer is TLI. This is a sensitive test for pancreatic exocrine function. PLI is a test used more for diagnosing pancreatitis. Vitamin B12/folate levels would be a useful test to do in cases of EPI because of possible malabsorption of folate or concurrent bacterial overgrowth

in the small intestine affecting these factors, but it is not a very sensitive test for diagnosing EPI. Fecal examination is also an unreliable way to try to diagnose pancreatic disease but may be useful for ruling out other causes of diarrhea.



Question

What is the typical ultrasonographic appearance of the abdomen in a dog with pancreatitis?

- There is a hyperechoic pancreas with hypoechoic surrounding mesentery
- There is a hypoechoic pancreas with hypoechoic surrounding mesentery
- There is a hyperechoic pancreas with hyperechoic surrounding mesentery
- There is a hypoechoic pancreas with hyperechoic surrounding mesentery

Explanation - The correct answer is there is a hypoechoic pancreas with hyperechoic surrounding mesentery. Sometimes, the pancreas will also be enlarged and may appear mottled. The pancreas appears hypoechoic due to edema, and the mesentery appears hyperechoic due to focal peritonitis.

Question

Which of these is a reliable way to differentiate between regurgitating and vomiting?

- Occurring > 1 hr after eating indicates vomiting
- Acidic pH of the material brought up indicates vomiting
- Active abdominal contractions indicates vomiting
- Salivating for several minutes prior to the event indicates regurgitation

Explanation - The correct answer is **active abdominal contractions** indicates vomiting. Regurgitation is a passive event that does not have abdominal contractions. pH can be variable with either regurgitation or vomiting, depending on the food eaten and whether the vomiting is gastric or duodenal in origin. **Salivation** is a sign of nausea that generally indicates vomiting rather than regurgitation. Regurgitation can occur hours after a meal, especially in cases of megaesophagus, where the food sits in the esophagus until the animal positions itself in such a way that the expulsion of food occurs.

Question

A dog with severe periodontal disease presents for a dental cleaning and extractions. You want to start the dog on antibiotics a week before the procedure due to the severity of infection. Which of the following antibiotics would be the best choice for oral infection such as this?

- Cephalexin
- Clindamycin
- Metronidazole
- Enrofloxacin

Explanation - The most commonly used and best antibiotics for severe periodontal disease are Clindamycin and Clavamox (amoxicillin-clauvanic acid). This is because these antibiotics are effective against anaerobic bacteria. While the other antibiotics may have some effect, Clindamycin is the best choice in this list for dental abscessation.

Question

When measuring Vitamin B12 (Cobalamin) and Folate (Vitamin B9) levels in a dog with suspected small intestinal bacterial overgrowth, which finding is most supportive of this diagnosis?

- Increased folate, decreased cobalamin
- Decreased folate, decreased cobalamin
- Increased folate, increased cobalamin
- Decreased folate, increased cobalamin

Explanation - The correct answer is increased folate, decreased cobalamin. The reason for this is that bacteria synthesize folate leading to decreased absorption of cobalamin.

Question

What virus was the dog in the photograph previously infected with?

- Adenovirus-2
- Coronavirus
- Distemper virus
- Herpesvirus
- Parvovirus

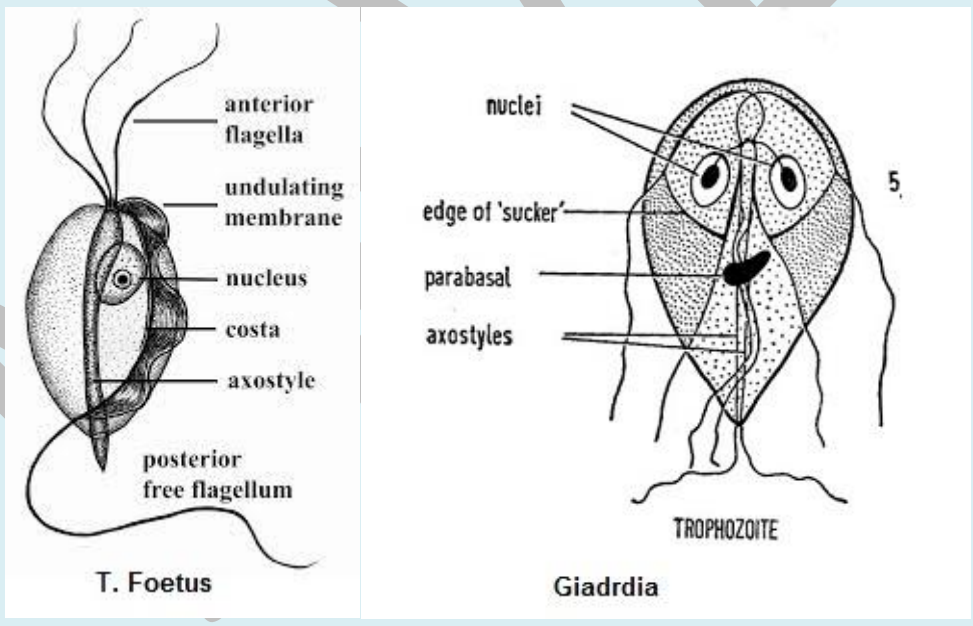
Explanation - The correct answer is distemper virus. This dog has enamel hypoplasia of the canines, which can be seen most prominently on the lower canine. This is considered a pathognomonic finding in dogs previously infected with distemper virus as a puppy. Usually, the enamel hypoplasia is visualized in the middle of the tooth; however, this dog must have been infected at a very young age and thus has enamel hypoplasia at the tips of the teeth.

Question

You arrive to a canine breeding kennel to help them with an outbreak of diarrhea that appears to be of the malabsorptive and maldigestive kind. You perform several fecal smears to help find a diagnosis. On several of the smears you notice a protozoal organism swimming around in a "falling leaf" motion when you are at 40x. These organisms also have a ventral concave disc, are pear shaped, binucleate, and are approximately 15 x 8 micrometers. What is the organism?

- Tritrichomonas foetus
- Isospora
- Cryptosporidium
- Giardia

Explanation - The correct answer is Giardia. Young, immunodeficient, and grouped animals tend to show signs. This question provides a classic description of the motile trophozoite. Remember, the cyst is the infective mode, not the trophozoite. T. foetus has an undulating membrane which helps you differentiate from Giardia along with 3-5 anterior flagella. Additionally, T. foetus is not commonly found in dogs. When looking for Isospora, you would expect to see them on a fecal flotation in the form of oocysts. Cryptosporidium would be round and slightly smaller than a red blood cell. Acid-fast or fluorescent antibody stains are performed on direct fecal smears to help find these small organisms.



Question

On physical exam of an old, stray female dog you notice enamel hypoplasia of the teeth. What is the most likely explanation for this finding?

- Previous distemper virus infection
- Congenital enamel hypoplasia

- Previous parvo virus infection
- Mouth rot
- Tetracycline administration

Explanation - The correct answer is previous distemper virus infection. Infection before the eruption of permanent dentition occurred to this dog. Many consider this finding pathognomonic for previous infection. Tetracycline administration to young dogs may lead to yellow discoloration of the teeth. Congenital enamel hypoplasia is extremely rare in dogs. All other choices are not accurate.

Question

Oral surgery in conjunction with another elective surgery in an otherwise healthy dog is usually not recommended for which of the following reasons?

- There is no increased risk in doing both surgeries, as long as the oral procedure is performed after the elective procedure.
- Combining two surgeries increases anesthetic time, making the one longer procedure riskier than having two shorter, individual anesthetic procedures.
- Oral surgeries cause significant bacteremia, which may be an endogenous source of wound infection.
- There is no increased risk in performing both procedures, as long as a different set of sterile gloves and instruments are used for each procedure.

Explanation - The correct answer is oral surgeries cause significant bacteremia, which may be an endogenous source of wound infection. In an otherwise healthy dog, the increased length of anesthesia in combining two procedures should not significantly increase the risk of anesthesia. The order in which the procedures are performed does not eliminate the risk of infection associated with the bacteremia. Changing gloves and instruments between procedures helps maintain sterility exogenously, but does not eliminate risk of infection associated with the endogenous bacteremia.

Question

What is the most common cause of exocrine pancreatic insufficiency in the dog?

- Pancreatic acinar atrophy
- Chronic pancreatitis
- Pancreatic infection
- Pancreatic neoplasia

Explanation - The correct answer is pancreatic acinar atrophy. This is an idiopathic condition where the **exocrine cells of the pancreas atrophy with minimal inflammation**. Chronic pancreatitis is a much more common cause of EPI in cats than dogs. For this reason, dogs with EPI do not usually have concurrent diabetes mellitus because the endocrine cells are spared, whereas cats often do have concurrent DM. Neoplasia and infection are rare causes of EPI.

Question

A 6-month old Cocker Spaniel is presented to you with the owner complaining of a history of regurgitation after eating. She describes that the dog will repeatedly attempt to swallow and bring up food and will sometimes cough or sneeze concurrently. You perform thoracic radiographs which are normal. What is the most likely diagnosis?

- Pancreatitis
- Cricopharyngeal dysphagia
- Megaesophagus
- Ascarid infection

Explanation - The correct answer is cricopharyngeal dysphagia. This is a congenital disorder characterized by **in-coordination of the swallowing reflex** leading to the signs described. Megaesophagus could also cause regurgitation but should not cause the repeated swallowing and would probably be identifiable on radiographs in most cases. Pancreatitis often causes vomiting in dogs but not usually regurgitation unless there is secondary esophagitis. Ascarid infection also could cause vomiting if sufficiently severe.

Question

Which of these findings is most supportive of a diagnosis of HGE (hemorrhagic gastroenteritis)?

- Total solids of 6.0
- Chronic hemorrhagic diarrhea
- Packed cell volume of 45%
- Positive fecal test for coccidia

Explanation - HGE is characterized by acute onset of hemorrhagic diarrhea accompanied by marked **hemoconcentration**. HGE can be due to a **hypersensitivity reaction** in the intestines or from Clostridium perfringens enterotoxin. It usually affects **small dogs** such as Miniature Poodles and Miniature Schnauzers. They develop a **raspberry jam-like diarrhea**, vomiting, and **abdominal pain**. The key findings are a **high PCV of 55-60** and **normal total protein** that is not as high as would be expected from the degree of hemoconcentration, probably due to protein loss into the intestine.

Question

A 12-week old female Rottweiler puppy arrives at your clinic with a 4 day history of lethargy, anorexia, vomiting, and diarrhea. On physical exam, the puppy is dehydrated and the temperature is 104.2F. What is your primary differential?

- Dietary indiscretion
- Giardia
- Canine parvovirus
- Canine coronavirus
- Foreign body

Explanation - The correct answer is canine parvovirus. These clinical signs most closely correlate with parvo. One must piece together the signalment, history, and clinical findings. Usually a dog with a foreign body will not have diarrhea and a fever. Dogs infected with Giardia will not necessarily vomit. The duration and severity of clinical signs rule out dietary indiscretion. Canine corona virus may cause similar clinical signs, but it is less likely for a dog to have such severe clinical signs.

Question

What is the treatment of choice for perianal fistulas?

- Antibiotic therapy
- Radiation therapy
- Intestinal prokinetic drugs
- Immunosuppressive drugs

Explanation - The correct answer is Immunosuppressive drugs. Antibiotics may reduce symptoms temporarily but will not cure perianal fistulas. Surgery used to be the treatment of choice, but it carries a guarded prognosis due to the risk of fecal incontinence. Perianal fistulas are an immune mediated disease, and medical management with immunosuppressive therapy, perhaps with **cyclosporine**, is now the initial treatment of choice. However, a combination of surgery and immunosuppressive therapy is not uncommon. German shepherds are predisposed to development of perianal fistulas.

Question

A fat sedentary female Bichon Frise of 5 months of age walks into your clinic as a result of having mucous-laden diarrhea of one week duration. You perform a gram stain of the feces and visualize "gull shaped" gram negative rods. What is the most likely diagnosis?

- Campylobacteriosis
- Clostridium difficile
- Salmonellosis
- Cryptosporidium

Explanation - The correct answer is Campylobacteriosis. This is a gram negative motile, thin, S shaped or gull shaped rod. It can occur singly, in pairs or in chains. **C. jejuni** is most commonly isolated. You can also isolate this organism with fresh fecal swabs streaked onto Campylobacter blood agar plate which grows in an oxygen-reduced atmosphere in 3-4 days. Salmonella is a gram negative bacillus. C. difficile is a gram positive rod. Cryptosporidium is a coccidian parasite. Fun Fact: Kids with puppies are 16 times more likely to acquire campylobacteriosis.

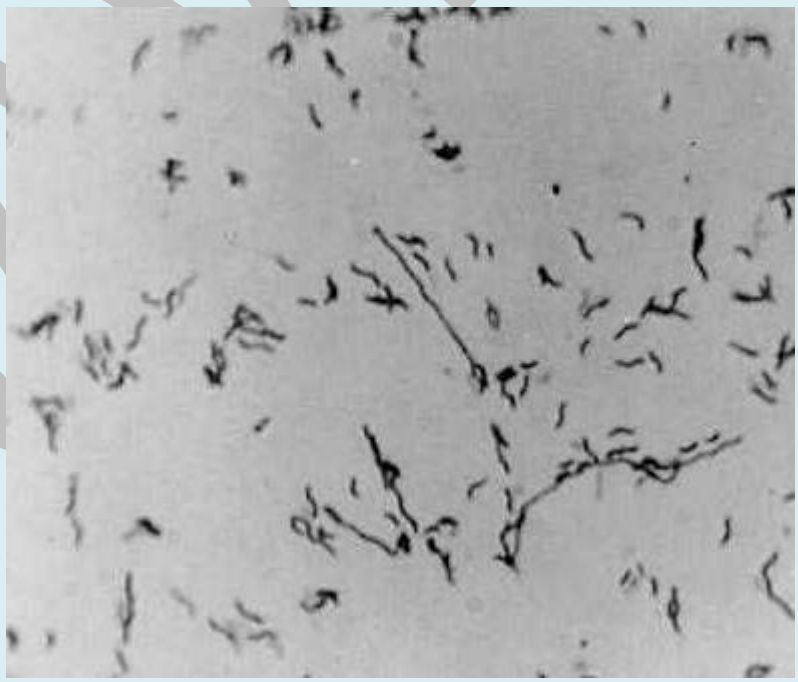
What is campylobacteriosis and what causes it?

Campylobacteriosis (CAMP-EE-lo-back-tier-EE-oo-sis) is caused by a bacteria called ***Campylobacter jejuni*** (je-june-eye), which is found world-wide in the intestinal tracts of animals. The bacteria are spiral shaped and can cause disease in animals and humans. Most cases of campylobacteriosis are associated with handling or eating raw or undercooked poultry meat.

Campylobacteriosis causes gastro-intestinal symptoms, such as diarrhea, cramping, abdominal pain, and fever in domestic animals and humans,. Young animals and humans are the most severely affected.

What animals get campylobacteriosis?

Most species of domestic animals including cattle, sheep, chickens, turkeys, dogs, cats, mink, ferrets, pigs, and non-human primates are susceptible to infection.



Campylobacteria (G –ve Rods)

How can my animal get campylobacteriosis?

Animals can be exposed to the bacteria by **direct contact** with sick animals, by ingestion (**oral**) of fecally contaminated feed or water or by licking or chewing on objects (**fomites**) contaminated with feces from infected animals. Raw or undercooked meat fed to pets can also contain the bacteria.

How does campylobacteriosis affect my animal?

Signs are usually seen 2 to 5 days after exposure to the bacteria and include diarrhea (which may have mucus [clear slime] and sometimes blood), decreased appetite, vomiting and possibly fever. Disease is generally more severe in young animals. Symptoms usually clear up on their own in 3 to 7 days.

Can I get campylobacteriosis?

Yes. People get campylobacteriosis from eating **(oral)** raw or undercooked poultry or meat, raw (unpasteurized) milk, raw clams, food contaminated with feces or unchlorinated water. The bacteria can also be spread through **direct contact** with infected pets or livestock.

How can I protect my animal from campylobacteriosis?

Do not feed raw or undercooked meat or poultry to your pets. Do not allow animals to eat contaminated food or water. If your pet develops diarrhea, isolate the animal to limit exposure to other animals and contact your veterinarian.

Question

What drug used to treat gastroenteritis can cause feces to darken and look like melena when given orally?

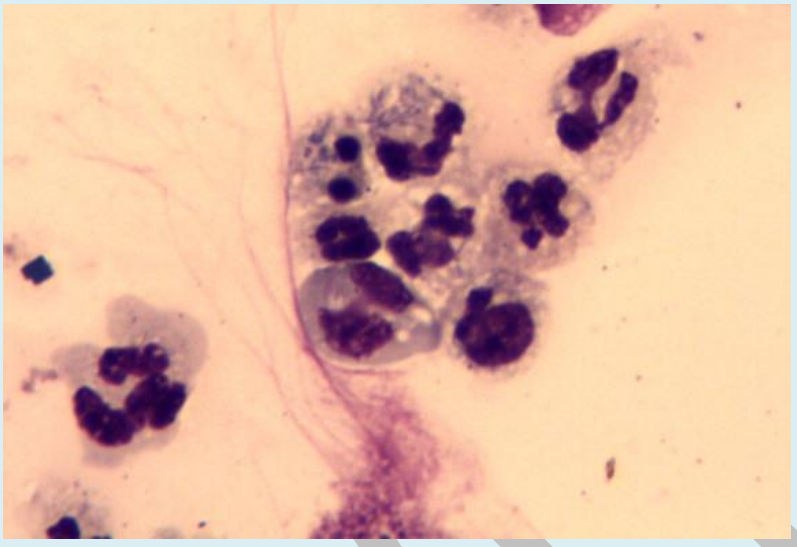
- Loperamide (Immodium* - Opiate GI motility modifier)
- Cimetidine (Tagamet* – H2 blocker)
- Metronidazole (Flagyl* - Antibiotic)
- Chlorpromazine (Thorazine* - Antiemetic)
- Bismuth subsalicylate (Pepto-Bismol* – Adsorbent Antidiarrheal)

Explanation - The correct answer is bismuth subsalicylate. Bismuth subsalicylate (Pepto-Bismol) forms bismuth sulfide in the colon, which is a very dark compound that makes feces black and can lead to the misdiagnosis of melena.

Question

An 8-year old female spayed Newfoundland presents for discomfort. The dog has been a patient of yours for years and has mild subaortic stenosis and osteoarthritis. She receives deracoxib (1 mg/kg/day) for her hip and stifle osteoarthritis which has been well controlled. The owner reports that this morning, the dog seemed lethargic and disinterested in food. She has been unwilling to lie down and had diarrhea. On your examination, she is quiet but alert and responsive. T-103.6 F, HR-128 bpm, RR-44 bpm with intermittent panting. Her mucous membranes are slightly pale. Her abdomen appears slightly distended and she seems uncomfortable on abdominal palpation. You pull blood and briefly ultrasound the abdomen to look for free abdominal fluid. There is moderate abdominal effusion; you perform abdominocentesis which yields opaque, pink-tinged fluid. You examine the fluid cytologically; a representative field is shown in the image below. In-house bloodwork shows:

Hematocrit - 31% (Normal 36%-50%)
White Blood Cell Count - 22,300/ul (Normal 7,000-17,000/ul)
Thrombocytes - 222,000/ul (Normal 200,000-900,000/ul)



Which of the following is the most appropriate action to take?

- Discharge the patient on broad spectrum antibiotics pending fluid culture and sensitivity results
- Hospitalize overnight for antibiotics and supportive care; submit abdominal fluid for fluid analysis and culture and sensitivity
- Take thoracic radiographs and wait for chemistry panel to come back from the lab tomorrow
- Administer fluids and prepare the patient for exploratory laparotomy
- Call in a cardiologist to perform an echocardiogram

Explanation - Based on the presence of neutrophils and bacteria (intracellular) in the abdominal fluid, you should have diagnosed this Newfoundland with septic peritonitis. Although the underlying cause has not yet been determined, peritonitis should be treated on an emergency basis as a "wait and see" approach will likely result in further debilitation of the patient and worsening of the prognosis.

The treatment for septic peritonitis is exploratory laparotomy and correction of the underlying problem (common problems include perforating ulcer/ruptured bowl, ruptured gall bladder, neoplasia, or foreign body/penetrating wound). If no underlying problem is found, the peritoneal cavity should be rinsed repeatedly with sterile saline and the abdomen should be allowed to drain. After surgery, appropriate management with fluids, antibiotics (based on culture and sensitivity), gastrointestinal protectants and analgesics should be continued or implemented.

The other answer choices here are not the preferred action because you should not postpone

surgery longer than is necessary to stabilize the patient for anesthesia and surgery. Septic peritonitis is unlikely to resolve with antibiotic therapy alone and there is concern about selecting for antibiotic-resistant bacteria in such an instance. For routine surgery, it could be appropriate to prioritize an echocardiogram due to the history of mild subaortic stenosis but not in this instance.

Question

Which of these is the most important treatment for salmon poisoning?

- Praziquantel
- Oxytetracycline
- Ivermectin
- Fenbendazole

Explanation - The correct answer is oxytetracycline. Because the signs are caused by a rickettsial organism, Neorickettsia helminthoeca, treatment is with a tetracycline-type of drug. Praziquantel is usually given to eliminate the fluke even though it does not usually cause any clinical signs in order to prevent contamination of other waterways.

Question

Which of these dietary recommendations is most appropriate to give to someone raising a large breed puppy?

- Calcium levels in the diet do not play a factor in skeletal development.
- It is important to supplement calcium to prevent skeletal abnormalities.
- It is important to limit calcium intake to prevent skeletal abnormalities.
- Calcium in the diet of large breed puppies is of less clinical importance than it is in small breeds.

Explanation - The correct answer is that **it is important to limit calcium intake to prevent skeletal abnormalities**. In fast-growing, large-breed puppies, diets high in calcium have been shown to predispose them to osteochondrosis and retained cartilage cores.

Question

A 5-year old male castrated English Springer Spaniel presents for a dental exam. The dog has a history of aggressive chewing on tennis balls and frisbees. The oral exam reveals brown, worn-down incisors, canines, and premolars. The dog is otherwise normal and healthy. What is the cause for the teeth turning brown?

- The dog was probably given tetracycline antibiotics as a puppy, which causes a permanent brown discoloration of teeth.
- Excessive chewing has predisposed the teeth to infection. The brown coloration is a sign of bacterial infection.
- The teeth are brown due to the formation of tertiary dentin, which stains easily.
- The excessive chewing has worn away the enamel of the teeth. The underlying dentin is naturally brown.

Explanation - The correct answer is the teeth are brown due to the formation of tertiary dentin, which stains easily. Aggressive chewing of things like rocks, tennis balls, cage bars, etc. abrasion of dentin. Tertiary dentin, which is produced as a response to the wearing of the teeth, stains easily. Tertiary dentin will usually prevent the exposure of the pulp cavity unless its production cannot keep up with its rapid wear.

Question

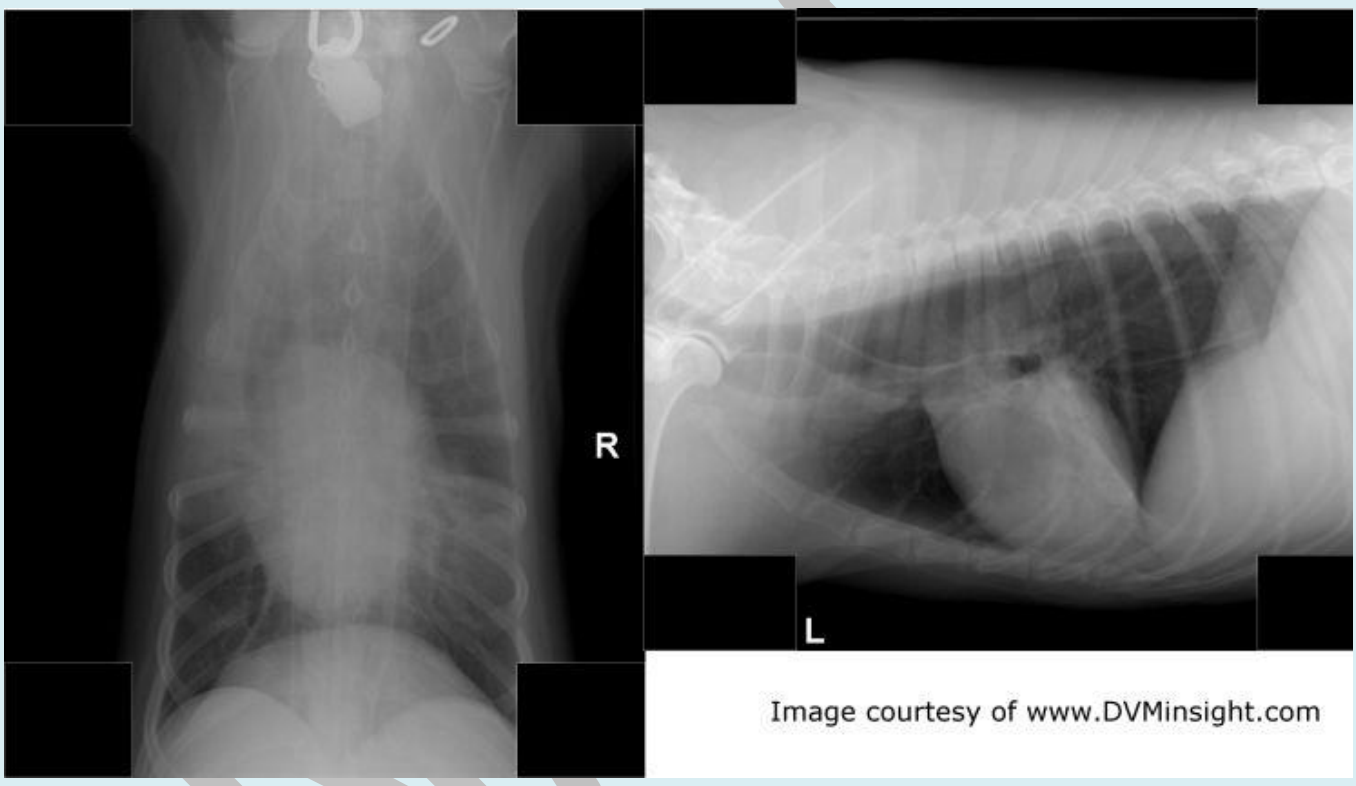
Which of these clinical findings would you expect in a case of lymphangiectasia in a Belgian causes Sheepdog as depicted in the photo?

- Lymphocytosis
- Hypercholesterolemia
- Panhypoproteinemia
- Hypercalcemia

Explanation - The correct answer is panhypoproteinemia. Lymphangiectasia is a classic example of a protein-losing enteropathy. It is characterized by dilation and dysfunction of intestinal lymphatics and leakage of protein-rich lymph into the intestinal lumen. As a result, protein, cholesterol, and lymphocytes are all lost. Calcium is also frequently low due to either low albumin or vitamin D and calcium malabsorption.

Question

A 6-month old Labrador Retriever presents for regurgitation. The dog is otherwise happy and doing well, according to the owner. A chest radiograph is performed and is shown. What therapeutic intervention is most important in the management of this dog's condition?



- Small, frequent elevated feedings
- Administration of Tensilon (edrophonium)
- Administration of terbutaline
- Strict cage rest
- Administration of glucocorticoids

Explanation - The correct answer is small, frequent elevated feedings. This dog has megaesophagus. Given the signalment, this may be congenital. Causes of megaesophagus include congenital, vascular ring anomaly, endocrinopathy, secondary to neuromuscular disease such as myasthenia gravis, or secondary to esophagitis. Affected animals should be fed a high-calorie diet, in small frequent feedings, from an elevated or upright position to utilize gravity in emptying the

flaccid esophagus. Pulmonary infections due to aspiration pneumonia should be identified and treated appropriately. Other therapies that have been advocated for stimulating esophageal peristalsis include **metoclopramide** and **cisapride**. Anti-cholinesterases can be tried, especially in cases where myasthenia gravis is the underlying cause, but edrophonium is too short-acting to be prescribed for chronic use, so you would probably choose **pyridostigmine**. Terbutaline is a bronchodilator and is not indicated in this case. Strict rest would not be particularly helpful in this case.

Question

A 3-month old Rottweiler is presented to you with acute onset of diarrhea, vomiting, and depression. Your workup reveals a temperature of 104.2F, and has a WBC count of 750 cells/uL. What is your top differential?

- Parvoviral enteritis
- Campylobacter infection
- Clostridial enterocolitis
- Inflammatory bowel disease

Explanation - The correct answer is parvoviral enteritis. Canine parvovirus commonly infects dogs **6 weeks-6 months of age**. The key clinical finding in this dog is the **leukopenia**, which is a common feature of parvoviral infections but should not be seen in the other answer choices.

Question

Vascular ring anomalies such as persistent right aortic arch commonly cause what clinical sign in young affected dogs?

- Dyspnea
- Hyperactivity
- Regurgitation
- Hemorrhage

Explanation - The correct answer is regurgitation. Vascular ring anomalies entrap the esophagus and trachea. Circular compression of the esophagus results in physical obstruction and regurgitation. Less commonly, they affect the trachea.

Question

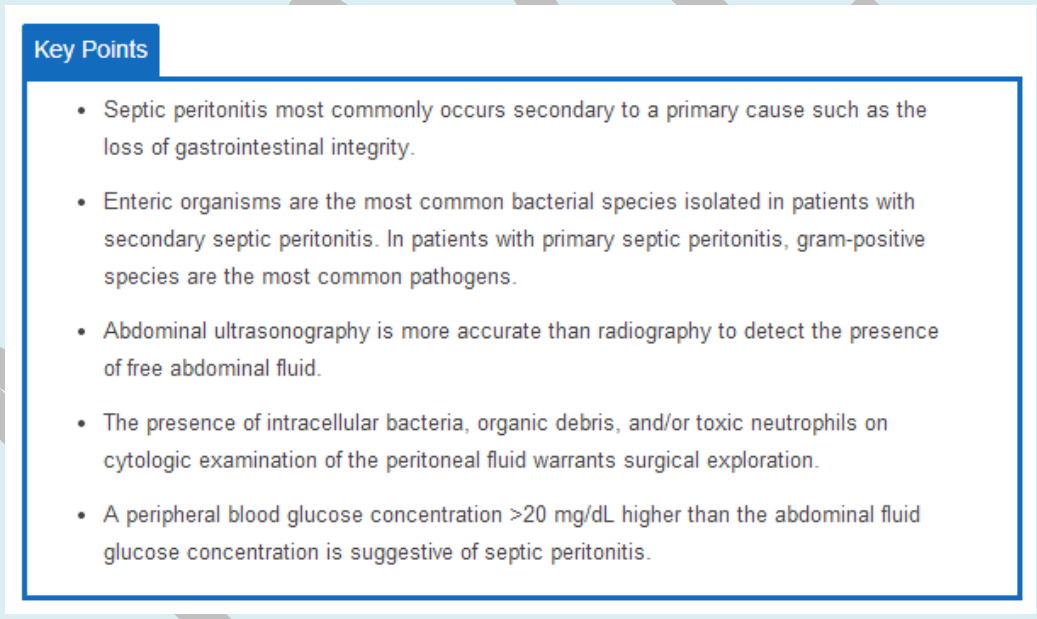
A 4 year old male Akita presents with a foreign body obstruction. You perform an intestinal resection and anastomosis surgery due to the compromised appearance of the intestine at the foreign body site. The dog recovered well after surgery. Five days post-operatively, she presents

again with a history of inappetance and has a 104.8 temperature. What is the best diagnostic test to confirm your clinical suspicion?

- CBC and serum chemistry
- Abdominocentesis
- Thoracic radiographs
- Serum lactate
- Abdominal ultrasound

Explanation - You should be highly suspicious of leakage at the surgery site and resultant septic peritonitis. The most common time for anastomosis failure is 3-5 days postoperative. This is due to the degradation of fibrin at the site prior to deposition of sufficient collagen.

Abdominocentesis would likely reveal a septic inflammatory process, confirming your clinical suspicion with the finding of of **intracellular bacteria**. A CBC and chemistry are helpful adjunct diagnostic tests but are not specific for septic peritonitis. An abdominal ultrasound would not distinguish between post-operative abdominal fluid and/or free gas and a septic effusion. Serum lactate, although helpful, is also not specific for sepsis. Thoracic radiographs could be useful to assess for less likely complications such as aspiration pneumonia.



Question

A 10-year old German Shepherd presents to you with the complaint of licking the anal area and scooting. On examination, you find numerous ulcerated tracts in the perianal area that are draining purulent fluid. What is the diagnosis?

- Clostridial colitis
- Perianal fistula
- Anal sac abscess

- Anal sac impaction

Explanation - The correct answer is perianal fistula. This is seen mainly in older German Shepherds, and licking the anus is a common presenting complaint. The key finding is the presence of multiple draining tracts in the perianal region that can actually be quite deep.

The owner of this German Shepherd was gone for 3 weeks, came home and noticed that she was sore under her tail. This dog is currently undergoing treatment for this problem.

This picture was taken a month after the picture above.

Question

What is the most important and specific medical therapy for exocrine pancreatic insufficiency?

- Low-protein diet
- Enzyme supplementation
- Long-term prednisone supplementation
- High-fiber diet

Explanation - The correct answer is enzyme supplementation. Because enzyme deficiency is behind the pathogenesis of this disorder, pancreatic enzyme supplementation is the cornerstone of therapy. Enzyme supplementation can best be administered with either powdered extract given with each meal or with chopped ox or pig pancreas given with each meal. A high-fiber or low-protein diet would both be contraindicated because these animals already are having difficulty digesting their food and protein. Therefore, a more digestible diet with adequate protein is more appropriate. Long-term corticosteroids are rarely needed in EPI patients.

Question

What would you expect to find on the bloodwork of a dog that is vomiting due to a gastric outflow obstruction?

- Hyperchloremic metabolic acidosis

- Hyperchloremic metabolic alkalosis
- Hypochloremic metabolic alkalosis
- Hypochloremic metabolic acidosis

Explanation - The correct answer is hypochloremic metabolic alkalosis. Gastric outflow obstruction leads to emesis of material with a high concentration of gastric hydrochloric acid. As a result, there is loss of chloride and acid from the body. This leaves the animal with hypochloremia and metabolic alkalosis. Vomiting from other causes can sometimes lead to loss of duodenal fluid, which is usually rich in bicarbonate and can lead to acidosis.

Question

A 4-month old Yorkshire Terrier presents for being underweight and for having occasional episodes of wandering. Physical examination is unremarkable except that the dog is much smaller than its sibling who the owners also brought in. A CBC shows a microcytic anemia. What is your primary differential for this dog?

- Patent ductus arteriosus
- Portosystemic shunt
- Renal dysplasia
- Inadequate iron in diet

Explanation - The correct answer is a portosystemic shunt. Animals with liver shunts are frequently **poor doers** that are small and may have intermittent signs of hepatic encephalopathy. They often have **microcytic anemia**. Iron deficiency could cause the microcytic anemia but is unlikely in this case due to the other signs and the fact that iron deficiency is rare in dogs, except in cases of chronic bleeding. Renal dysplasia and PDA would not cause microcytosis.

Question

A 2-year old male castrated Border Collie presents for a 1-week history of small bowel diarrhea. A fecal flotation shows numerous Giardia cysts. What is the treatment of choice for this dog?

- Ipronidazole
- Albendazole
- Decoquinate
- Metronidazole

Explanation - The correct answer is metronidazole. You should know that fenbendazole is actually the treatment of choice for Giardia, but metronidazole has historically been the most widely accepted option. If fenbendazole is not offered as an answer choice, choose metronidazole. If fenbendazole were offered as an answer choice, it would be the best option.

Question

Which dog breed is genetically predisposed to exocrine pancreatic insufficiency?

- Bernese Mountain Dog
- Golden Retriever
- Irish Setter
- German Shepherd Dog

Explanation - The correct answer is **German Shepherd** Dog. EPI is believed to be an **autosomal recessive** trait in German Shepherd Dogs that results in atrophy of the exocrine pancreas. Dogs lose the ability to digest fat and protein and become **emaciated**. They have voluminous, soft feces, a voracious appetite, and may develop pica. The trypsin-like immunoreactivity (TLI) is diagnostic for EPI. **Treatment** entails adding powdered pancreatic enzyme extract, or raw pancreas to meals. These dogs should not be bred.

Question

What should you suspect in an animal if there is poor serosal detail on an abdominal radiograph?

- Ascites
- Obesity
- Pneumoabdomen
- Foreign body

Explanation - The correct answer is ascites. Abdominal fluid accumulation leads to blurring of serosal detail as the fluid in the abdomen has similar radiodensity to soft tissue in the abdomen. Air and fat usually enhance abdominal serosal detail.

Question

A healthy 1 year old Labradoodle presents for a wellness exam. Your exam is unremarkable but on fecal exam, you find the structures seen in the image below (shown from 40X magnification, each is about 40 um in diameter). How should the dog be treated?

- Ivermectin
- Praziquantel
- Metronidazole
- Pyrantel

Explanation - The correct answer is praziquantel. These are Taenia eggs although it is frequently not possible to distinguish them visually from Spirometra. Adult cestodes in the intestine of dogs and cats rarely cause serious disease but potential signs include malaise, increased appetite, colic or mild diarrhea. Pyrantel, metronidazole, and ivermectin are not known to be effective against Taenia.

Question

A 3-year old castrated male Doberman Pinscher presents for acute onset non-productive vomiting of 3 hours duration. On exam, the patient is extremely lethargic, tachycardic, has weak pulses and a distended abdomen. Following standard initial emergency treatment for suspected gastric dilation and volvulus, you would confirm the diagnosis with what imaging procedure?

- Ventral recumbency abdominal radiograph
- Dorsal recumbency abdominal radiograph
- Right lateral recumbency abdominal radiograph
- Left lateral recumbency abdominal radiograph

Explanation - A typical GDV occurs with repositioning of the pylorus to the left dorsal abdomen. A right lateral radiographic image is the best position for revealing a gas filled left dorsally-displaced pylorus with a gas-filled ventral fundus separated by a soft tissue band (compartmented stomach). Although the features of a malpositioned stomach may be observed on the other radiographic views, they are often more difficult to interpret than that represented by the right lateral recumbency view.

Question

A 6-month old Chocolate Labrador presents for limping and failure to gain weight. He is housed in an outdoor kennel with other hunting dogs. He is fed a large breed dry puppy food. He received his puppy shots at 8, 12, and 16 weeks old. He is quiet, alert, and responsive. His body condition score is 3/9, with rib exposure and poor fat deposition. His mucous membranes are pale pink, with a capillary refill time of 2 seconds. His heart and lungs auscult normally. No abnormalities are felt on abdominal palpation. He is an intact male, and both testicles are descended. The only abnormalities are the pads of his two front feet and left hind foot (see image) that he chews at frequently. What is diagnostic test of choice?

- Biopsy
- Fecal float
- Radiographs
- CBC and chemistry panel
- Skin scraping

Explanation - Hookworms (Ancylostoma and Uncinaria) are intestinal parasites that suck blood and can cause anemia, enteritis, coughing during larval migration, and dermatitis. Any young dog that is failing to thrive and/or has pale mucous membranes should be tested for intestinal parasites. Hookworm dermatitis, also called Ancylostomiasis is typically seen in conditions with poor sanitation and/or in kennels.

Hookworms can be transmitted in utero, during nursing, or via 3rd stage larva penetrating the skin. The most commonly affected skin areas are the pads and interdigital spaces of the feet, but can include any surface that contacts the ground. The larva migrate through the dog's tissues before arriving in the intestines. They cause significant anemia, failure to thrive, or sudden death in young dogs. In mild cases, deworming protocols are often enough; with severe cases blood transfusions and parenteral treatments are often necessary.

Skin scraping and impression smears of the affected skin areas are typically unrewarding for isolating parasites. A PCV/TP would show signs of anemia, but not the underlying etiology. Complete blood cell count and chemistry will often show anemia that is regenerative and an

eosinophilia. Radiographs would be unrewarding in this case. A biopsy may show migrating larva if biopsied soon after trauma, however this is not a diagnostic test routinely used.

Question

Which of these is the best measure of liver function in the dog from a routine chemistry panel?

- Alanine aminotransferase (ALT)
- Alkaline phosphatase (ALP)
- Blood urea nitrogen (BUN)
- Creatinine

Explanation - The correct answer is blood urea nitrogen (BUN). ALT and ALP are liver enzymes and can indicate ongoing damage to the liver or cholestasis but do not tell you anything about liver function. Creatinine is produced by muscle and cleared by the kidney so it tells you nothing about liver function. Urea is produced by the liver and is one measure of liver function; it will be low in cases of liver failure. Other tests of liver function on a routine chemistry panel are cholesterol, glucose, bilirubin, and albumin. Bile acids also test liver function but are not on a routine chemistry panel. It is important to realize that in cases of end-stage liver failure, the liver function parameters will be affected, while frequently, liver enzymes will be normal.

Question

A 5-month old Yorkshire Terrier presents for failure to thrive and ataxia of 2 days duration. A chemistry panel shows a bilirubin of 0.9 mg/dL, BUN of 5.2 mg/dL. Which of the following is most likely in this dog?

- Multiple intra-hepatic portosystemic shunts
- A single extra-hepatic portosystemic shunt
- A single intra-hepatic portosystemic shunt
- Multiple extra-hepatic portosystemic shunts

Explanation - The correct answer is a **single extra-hepatic portosystemic shunt**. Toy breed dogs, particularly Yorkshire Terriers, are predisposed to congenital, single, extra-hepatic portosystemic shunts. Older dogs that acquire liver shunts tend to develop multiple intrahepatic shunts.

Question

A 5-month old Scottish terrier presents to you with signs of head pressing and seizures. It was previously diagnosed with a portosystemic shunt, and its abdominal radiographs show a small liver (see radiographs). Which of these should NOT be used to manage hepatic encephalopathy in dogs with a liver shunt?

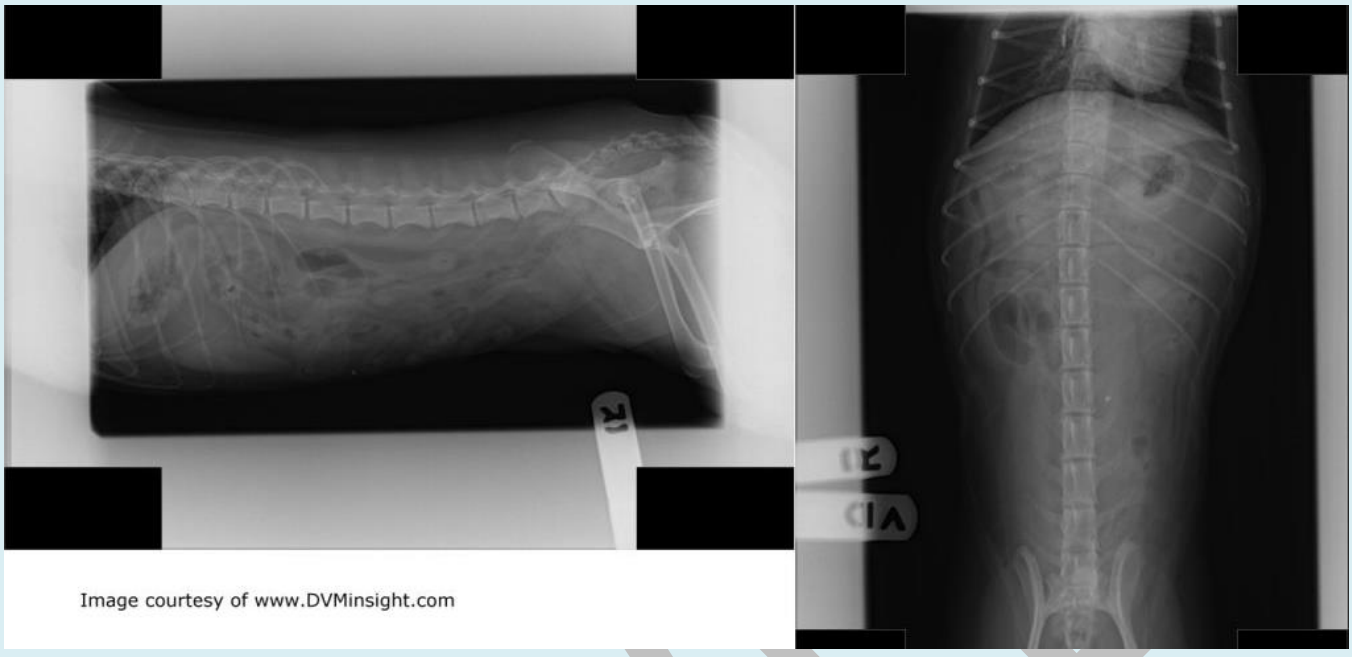


Image courtesy of www.DVMinsight.com

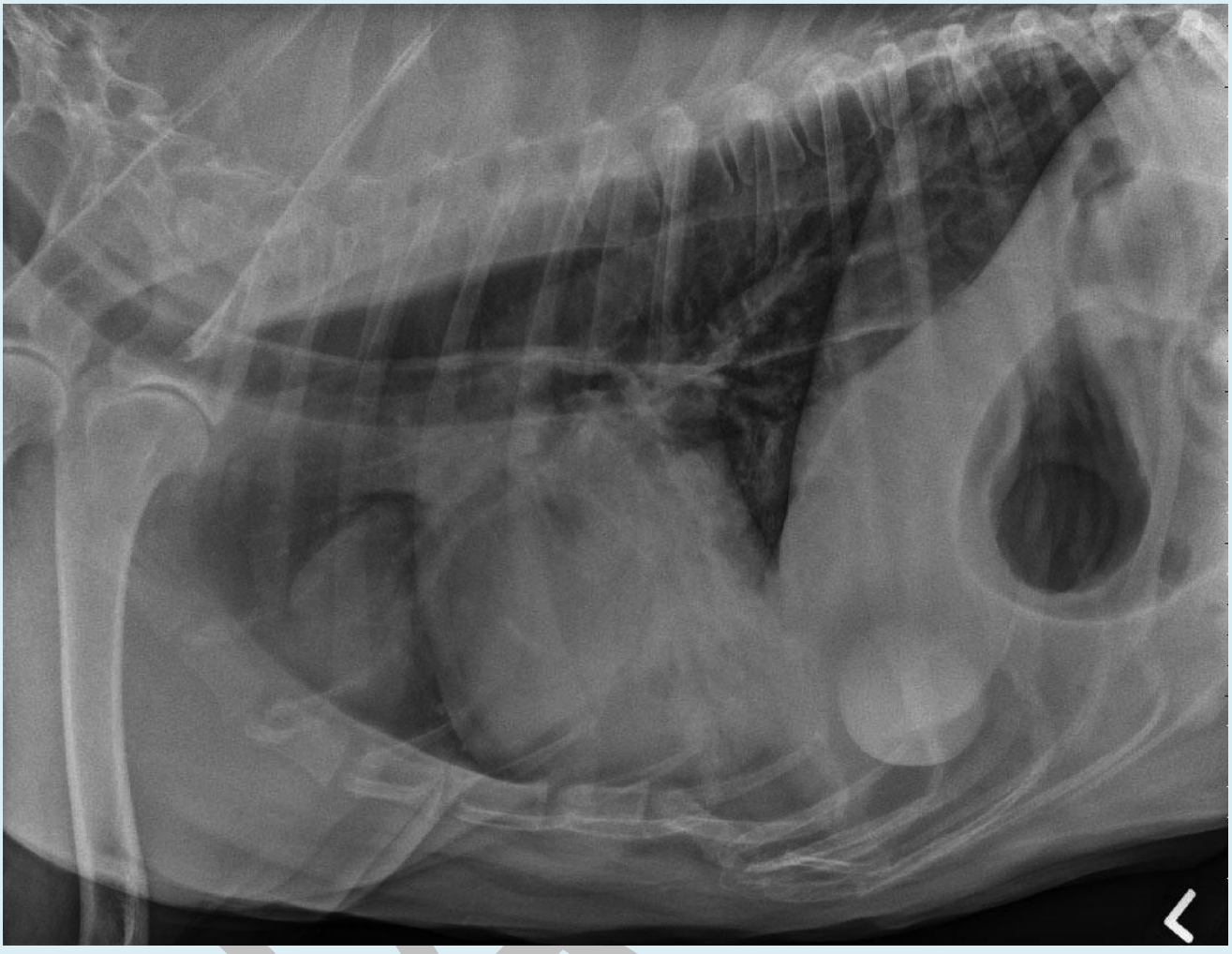
- Oral neomycin
- Substituting dairy and vegetable protein instead of feeding meat proteins
- Lactulose
- Low carbohydrate and fat, high protein diet

Explanation - The answer is low carbohydrate and fat, high protein diet. Animals with hepatic encephalopathy require protein reduction in their diets. Lactulose is given because it decreases colonic pH, trapping ammonia, and decreases transit time through the gut, leading to decreased ammonia uptake because ammonia contributes to hepatic encephalopathy. Oral neomycin is used to dampen urease-producing microflora of the gut and consequently, decrease ammonia production in the gut. It has also been shown that vegetable and dairy proteins are better tolerated than meat proteins.

On the radiograph, note the liver tucked well under the rib cage and the corresponding cranial shift of the gastric axis consistent with microhepatica.

Question

An 11-year old male neutered Rhodesian Ridgeback presents to your clinic with a history of two episodes of choking on saliva and bringing up white foam. You have submitted a CBC and biochemistry, and taken thoracic radiographs. Based on the radiograph, which test(s) is(are) most appropriate?



- Echocardiogram and troponin I levels
- Fine needle aspirate, test for acetylcholine receptor antibodies, tracheal wash
- Barium study (esophagram and upper G.I. series) and abdominal ultrasound
- Bronchoscopy and bronchoalveolar lavage

Explanation - An ultrasound-guided fine needle aspirate of the cranial mediastinal mass should be attempted to determine whether this is a thymoma. Thymomas have been associated with megaesophagus, and anti-acetylcholine receptor antibodies should be checked. There is an alveolar pattern with air bronchograms visible in the right middle lung lobe. This aspiration pneumonia secondary to megaesophagus will need appropriate antibiotic therapy. Mineralized sediment in the gall bladder is an incidental finding.

Question

What should you suspect in an animal if there is poor serosal detail on an abdominal radiograph?

- Ascites

- Obesity
- Pneumoabdomen
- Foreign body

Explanation - The correct answer is ascites. Abdominal fluid accumulation leads to blurring of serosal detail as the fluid in the abdomen has similar radiodensity to soft tissue in the abdomen. Air and fat usually enhance abdominal serosal detail.

Question

A 2.5-year old miniature Schnauzer presents for further evaluation as a result of stranguria. Abdominal ultrasound identified uroliths and the dog was taken to surgery for a cystotomy. Stone analysis revealed urate stones. You call the owners to inform them of the results and recommend which diagnostic test?

- Creatine kinase levels
- Pre- and post-prandial bile acids test
- Low dose dexamethasone suppression test
- ACTH stimulation test

Explanation - Urate stones in a small breed dog are usually secondary to a portosystemic shunt until proven otherwise. A portosystemic shunt results in blood from the abdomen being shunted away from the liver and into the main circulation. If shunted, the liver does not have an opportunity to detoxify the blood, which among other toxins, is very high in ammonia. The excess ammonia is excreted via the kidneys. High levels of ammonia can result in formation of ammonium biurate crystals and ultimately stones.

An ACTH stimulation test is used to help diagnose hypoadrenocorticism and hyperadrenocorticism. A low dose dexamethasone test is used to help diagnose hyperadrenocorticism. Creatine kinase levels are evaluated when there is a suspected myopathy.

Question

A 5-week old male German Shepherd Dog presents for regurgitation that started when it was weaned off its mother's milk. What is a congenital defect that would explain this occurrence?

- Diaphragmatic hernia of the small intestine
- Pulmonic stenosis
- Persistent right aortic arch
- Patent ductus arteriosus

Explanation - The correct answer is persistent right aortic arch. This vascular ring anomaly is an inherited defect that causes a constricting obstruction of the esophagus at the level of the heart

base. There is a breed predilection for **German Shepherd Dogs and Irish Setters**. Clinical signs of regurgitation usually manifest as the puppy is weaned off of milk and onto solid foods. PDAs, pulmonic stenosis, and diaphragmatic hernias of the small intestines should not cause regurgitation; however, vomiting may be a clinical sign if there is an obstruction associated with the diaphragmatic hernia of the small intestine.

Question

You perform an abdominal ultrasound to evaluate a Yorkshire Terrier with a suspected liver shunt. After finding the shunt vessel, you complete the ultrasound and find several calculi in the bladder. What is the most likely type of stone?

- Urate
- Calcium oxalate
- Xanthine
- Struvite
- Cysteine

Explanation - The correct answer is urate. Animals with portosystemic shunts are very predisposed to developing urate uroliths due to their inability to metabolize purines appropriately.

Question

A 10-year old male castrated schnauzer presents laterally recumbent and minimally responsive. The owners just returned from vacation and his pet sitter noted he seemed normal yesterday. His temperature is 97F (normal 100.0-102.6F), heart rate is 50 beats per minute (normal 60-160 beats per minute), and respiratory rate is 50 breaths per minute (normal 10-30 breaths per minute). You determine he is approximately 8% dehydrated based on skin turgor. Systolic blood pressure is 80 mmHg (normal 100-140 mmHg). He groans when his abdomen is palpated. You find a small pocket of ascites on a brief ultrasound exam. Cytology of the fluid shows a moderate amount of neutrophils with no obvious bacteria. An in-house chemistry panel is within normal limits (glucose 145, sodium 145, potassium 4.10, lactate 0.8). The ascites glucose is 100 and lactate is 2.8. What is your recommendation to the owners?

- Start active warming and give a dose of atropine
- Colloid fluid therapy and antibiotics
- Surgical exploratory laparotomy
- Crystalloid fluid therapy and antibiotics

Explanation - This dog has a septic abdomen and requires surgical intervention. Sepsis is suspected if the glucose in the ascites is at least 20mg/dL less than the peripheral blood. A blood lactate level of 2.0mmol/L lower than the ascites lactate level is also highly suggestive of a septic abdomen. The presence of intracellular bacteria would also be diagnostic for a septic abdomen. The hypotension, bradycardia, and hypothermia can be attributed to the sepsis as well. An abdominal ultrasound may help to determine the source. Rehydration and antibiotics are necessary components of treatment but ultimately surgical exploration is necessary.

Question

You perform a routine fecal flotation on a 1-year old Fox Terrier at a wellness examination and find the eggs shown in the image below. Select the answer which appropriately shows the clinical signs that would be expected in dogs infested with the organism and in humans that acquire zoonotic infection from dogs.

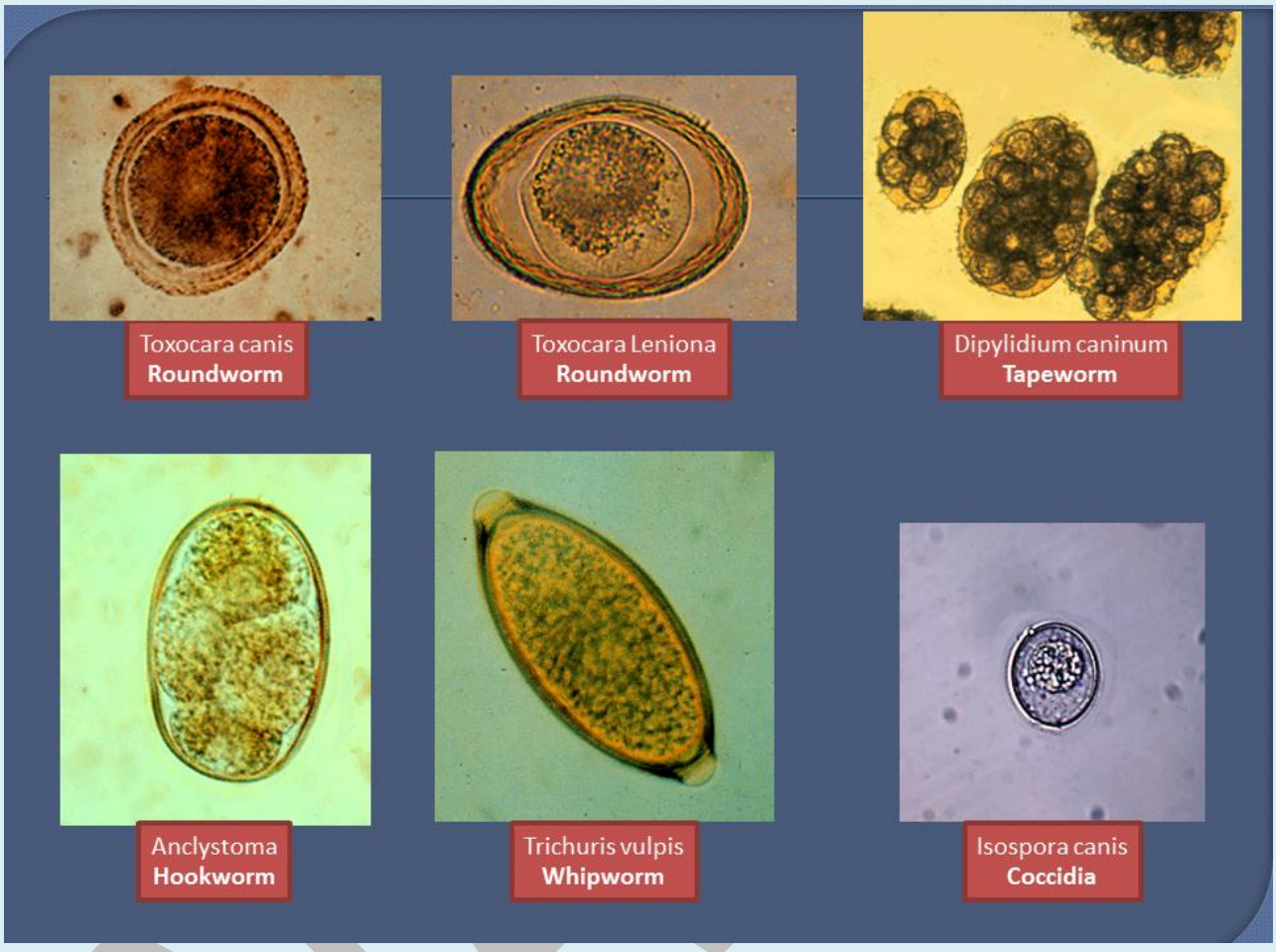
- Dogs: Diarrhea
  Humans: Anemia
- Dogs: Anemia
  Humans: Cutaneous larva migrans
- Dogs: Liver failure
  Humans: Visceral larva migrans
- Dogs: Diarrhea
  Humans: Ocular larva migrans

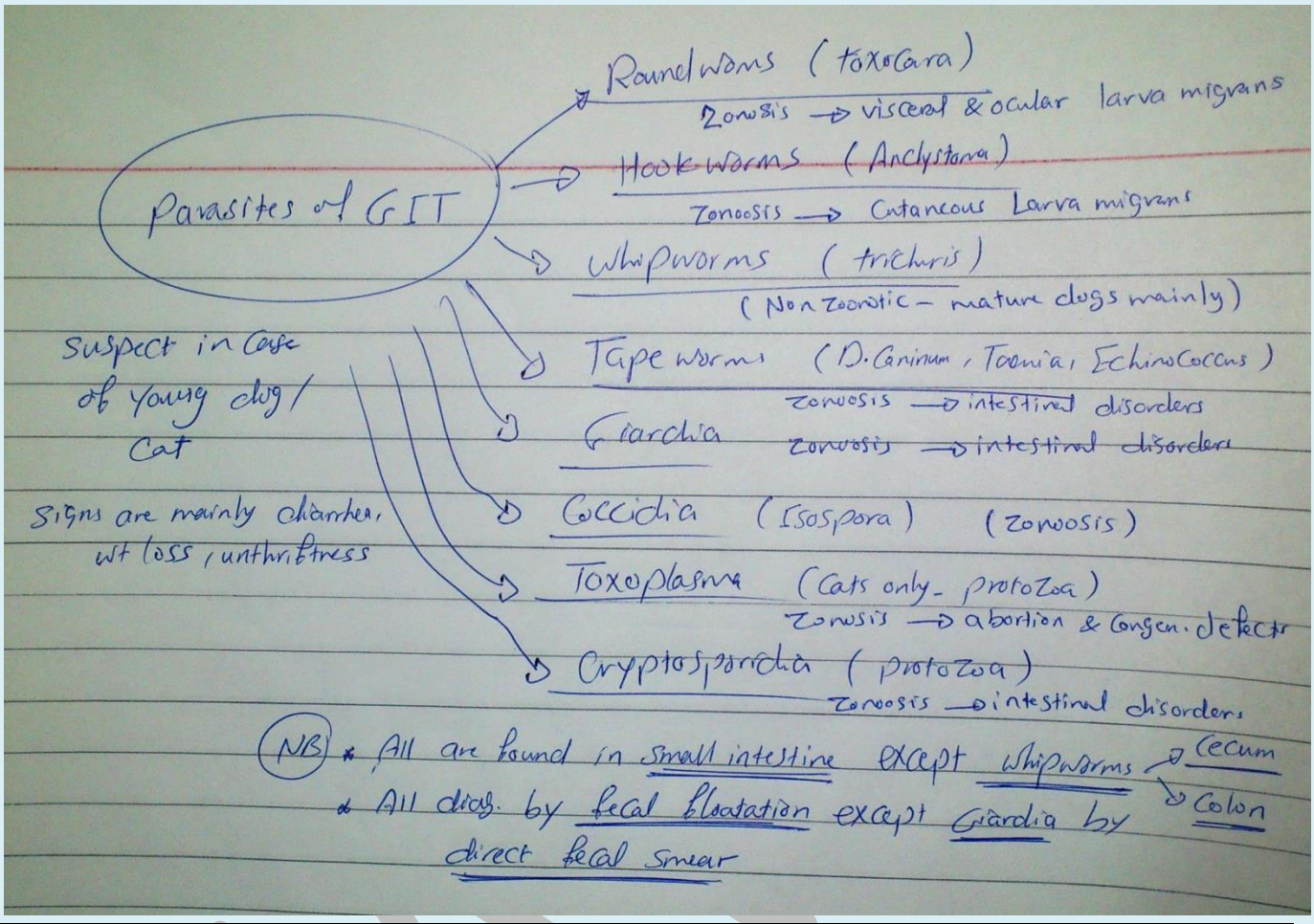
Explanation - This is a case of hookworms (Ancylostoma caninum). The eggs are recognizable by their thin-walled appearance with 2-8 cells that are passed.

Hookworms penetrate through the skin in young pups and migrate to the blood where they are coughed up and swallowed and mature in the small intestine. There, the worms suck blood and cause bleeding ulcers; up to 0.1 ml of blood per worm can be lost per day.

Aberrant migration under the skin of infected people results in cutaneous larva migrans.

Visceral and ocular larva migrans in people are usually due to Toxocara (roundworms).





Question

A 10 year old female spayed Schipperke dog presents to your emergency clinic for profuse vomiting for several days and weakness. You perform initial bloodwork and find that her blood pH is 7.6 and her potassium is 1.8 mmol/l. She weighs 12 kg. You immediately start her on intravenous fluids supplemented with potassium. What is the maximum rate of intravenous potassium that would be considered safe to administer to this dog?

- 3 mEq/hr
- 24 mEq/hr
- 18 mEq/hr
- 6 mEq/hr
- 12 mEq/hr

Explanation - The maximum safe rate of potassium infusion is 0.5 mEq/kg/hr. As this dog weighs 12 kg, the maximum is 6 mEq/hr. This is one of those rates that you need to know. Administering potassium more rapidly than this can result in fatal arrhythmias.

Question

On routine physical exam, you find Dipylidium caninum segments on the perianal region of a dog. Which of the following assumptions can be made?

- The dog was infected in utero by transplacental transmission
- The dog acquired the infection by coprophagia
- The dog acquired the infection by eating uncooked beef
- The dog should be treated for fleas and tapeworms

Explanation - The correct answer is the dog should be treated for fleas and tapeworms. Fleas are a required intermediate host of Dipylidium caninum. Dogs become infected by swallowing fleas that carry the tapeworm eggs. Finding proglottids of this tapeworm in the feces or perianally indicates the presence of fleas on the dog.

Question

Which of the following is the treatment of choice for Trichuris vulpis in dogs?

- Fenbendazole
- Ivermectin
- Praziquantel
- Imidacloprid

Explanation - The correct answer is fenbendazole. Trichuris vulpis is the canine whipworm. It commonly inhabits the cecum and causes diarrhea, weight loss, or hematochezia in severe infections. Light infections are subclinical. Treatment is with fenbendazole or milbemycin oxime.

Question

Which of the following is the treatment of choice for a Taenia infection in dogs?

- Ivermectin
- Pyrantel

- Fenbendazole
- Praziquantel

Explanation - The correct answer is praziquantel. Pyrantel and ivermectin are not known to be effective against Taenia infections. Fenbendazole is effective against Taenia pisiformis, but not other subspecies of Taenia, making it a less desirable answer choice.

Question

How much protein should you feed a dog with hepatic insufficiency and/or hepatic encephalopathy?

- The minimum amount of protein they will tolerate without developing hypoproteinemia
- The total quantity of protein is not important as long as they eat predominantly meat proteins rather than dairy proteins
- gram protein/kg/day
- The maximum amount of protein they will tolerate without signs of encephalopathy

Explanation - The correct answer is the maximum amount of protein they will tolerate without developing signs of encephalopathy. It is important to feed these patients adequate protein and waiting until hypoproteinemia develops is too much restriction. If too little protein is fed, this may promote muscle catabolism. Protein from meat is more prone to causing encephalopathy than proteins from dairy sources. This is probably because of high levels of nucleic acids and other nitrogenous compounds found in meat sources.

Question

A 3-year old German Short Hair Pointer presents for vomiting, lethargy, and diarrhea. A fecal exam reveals the eggs of Nanophyetus salmincola, the salmon poisoning fluke. What treatment should be administered to treat the symptoms of the dog?

- Praziquantel
- Tetracycline antibiotics
- Fenbendazole
- Penicillin

Explanation - The correct answer is tetracycline antibiotics. The causative agent for the dog's clinical signs is Neorickettsia helminthoeca. Treatment of choice for this rickettsial agent is tetracycline antibiotics. The fluke itself is not responsible for the clinical signs, but may be treated effectively with Praziquantel.

Question

A 3-year old male castrated Labrador Retriever presents for severe hemorrhagic enteritis, lethargy, and anorexia. The dog has a history of going fishing with the owner about one week before the onset of the clinical signs. The physical exam reveals generalized lymphadenopathy. Which of the following is the most likely etiologic agent causing these clinical signs?

- Neorickettsia helminthoeca
- Nanophyetus salmincola
- Salmonid fish
- Paragonimus kellicotti

Explanation - The correct answer is Neorickettsia helminthoeca. This dog most likely has salmon poisoning disease. The etiologic agent of the disease is the rickettsia, Neorickettsia helminthoeca, which is vectored by the intestinal fluke, Nanophyetus salmincola. Dogs get the disease by eating salmonid fish infected with the cercaria of the fluke, which harbor the rickettsia. Clinical signs along with finding fluke eggs in the feces of the dog is usually enough to make the diagnosis. Paragonimus kellicotti is a lung fluke of the dog.

Question

What causes cutaneous larval migration in humans?

- Echinococcus
- Ancylostoma
- Toxocara
- Dipylidium

Explanation - The correct answer is Ancylostoma. These are hookworms; when they come in contact with unprotected skin, the infective larvae penetrate the epidermis but generally cannot penetrate the basement membrane. They therefore migrate aimlessly, and the disease is usually self-limiting in humans.

Question

A 4-month old intact female Yorkshire Terrier presents for circling and head pressing, especially after eating. A CBC is within normal reference intervals. Urinalysis reveals ammonium biurate crystals. Which diagnostic test would be most informative in confirming your suspected diagnosis?

- Pre- and post-prandial bile acids
- Trypsin-like immunoreactivity
- ALT, AST and GGT levels
- MRI of the brain

Explanation - Based on the breed and young age of the animal with these neurologic signs and ammonium biurate crystalluria, a portosystemic shunt should immediately be your top differential.

A pre- and post-prandial bile acid test assesses hepatic function. The enterohepatic circulation is highly effective in normal animals but not animals with shunts. Bile salts excreted in bile return to the liver by intestinal absorption and portal blood. High pre- and post-prandial bile acids indicate a decrease in hepatic function. In congenital and acquired portal systemic shunts, bile acids are allowed to bypass the liver and enter systemic blood. This results in markedly elevated post-prandial bile acid levels.

ALT is a liver specific leakage enzyme; however, it does not reflect liver function. ALT may be within reference intervals in animals with decreased hepatic mass. AST is also a hepatocyte leakage enzyme but does not reflect liver function. It is not as liver-specific and is found in erythrocytes and cardiac and skeletal muscles. The animal's neurologic signs are likely from hepatic encephalopathy from a portosystemic shunt so an MRI would not confirm your diagnosis. TLI is the test of choice to diagnose exocrine pancreatic insufficiency.

Question

What is the causative agent of visceral larval migrans in humans?

- Roundworm
- Whipworm
- Hookworm
- Tapeworm

Explanation - The correct answer is roundworm. The roundworm, Toxocara canis, is the most common cause of visceral larval migrans in humans. Transmission is usually fecal-oral. Puppies may acquire the disease transplacentally.

Question

You have diagnosed a 6-month old male neutered Yorkshire Terrier with a portosystemic shunt. His bile acids were greater than 100 umol/L fasting and post-feeding. Which of the following abnormalities would you NOT expect to find on bloodwork and urinalysis?

- Increased ALT
- Hyperglycemia
- Microcytosis
- Ammonium biurate crystaluria
- Hypoproteinemia

Explanation – The correct answer is Hyperglycemia. Blood glucose is usually low in shunt patients. Hypoproteinemia is secondary to a decreased production of albumin by the liver. Liver

enzymes are usually high, but can be normal. Ammonium biurate crystals and stones form due to the increased amount of ammonium in the blood and urine. Microcytosis occurs, the pathogenesis is unknown, but it is thought that iron deficiency is not involved.

Question

A 1-month old puppy presents for hematochezia. You perform a fecal float and you find Ancylostoma caninum (hookworm) eggs. Which of the following medications would not be appropriate for treating Ancylostoma caninum?

- Butamisole
- Fenbendazole
- Pyrantel
- Praziquantel
- Ivermectin

Explanation - Note that the questions asked which would NOT be appropriate for treating Ancylostoma. Ivermectin, fenbendazole, pyrantel, and butamisole all are effective against hookworms. Praziquantel is used for treating tapeworm infections.

Question

In health, lactate is primarily metabolized by what organ and should measure less than what value (mmol/L)?

- Liver; less than 5 mmol/L
- Kidney; less than 5 mmol/L
- Liver; less than 2.5 mmol/L
- Kidney; less than 2.5 mmol/L

Explanation - Lactate is primarily metabolized by the liver and, in health, it should be low (< 2.5 mmol/L). The kidneys and skeletal muscle also metabolize lactate to a lesser extent. Lactate is typically associated with anaerobic metabolism and has been used to predict survival in gastric dilatation volvulus in dogs and colic and sepsis in horses.
