Case 1
Charlie is a 5-year old golden retriever that was presented to the referring veterinarian with an acute onset of vomiting, depression, and restlessness. Physical examination findings included a painful abdomen, arched back, mild dehydration (5%), temperature of 103.5°F and palpation of a mid-abdominal mass. Plain films of the abdomen demonstrated radiographic signs consistent with bowel obstruction.

Q: What additional radiographic signs are present?
The dog was taken to surgery and 2 incisions used to remove the foreign body (distal jejunum/proximal colon)
Q: What pathogens are we concerned about when entering the bowel?
Q: What type of protocol should be used with respect to use of antimicrobials in intestinal surgery?
The dog recovered, did well postoperatively, and was discharged from the hospital 2 days later. Ten days after surgery the dog was presented for some swelling along the incision line. The referring veterinarian and owner were concerned about peritonitis. On physical examination, the dog was noted to have a slight fever (103°F), was mildly depressed but could be easily aroused, had a slightly depressed appetite, no vomiting. Some purulent exudate was seen coming from the incision line.

Q: What would your list of differentials include?
Q: What changes are seen on the abdominal radiographs?
Aspiration and cytology of the exudate was consistent with a polymicrobial infection with significant numbers of anaerobes seen. The dog was hospitalized, placed on fluid therapy, and started on antimicrobials.

Q: What would be some appropriate antibiotics in this situation?
The dog was taken to surgery 4 hours after admission. The skin was thickened markedly as was the subcutaneous area. A large exudate-filled cavity was present with a significant amount of inflammation present in all of the tissues surrounding the cavity. The fluid was very foul smelling and caused several technicians to leave the operating theater. Some necrotic and inflamed tissue along the edge of the wound was removed “en-bloc” until healthy bleeding tissue was encountered. Copious irrigation with saline was done before multiple layer closure.

Q: When encountering wound infections where anaerobes are the predominant pathogen, what is the most important therapeutic consideration?
Q: What is an important differential diagnosis?
Q: Might a second surgery be necessary?
Postoperatively, the dog remained on antibiotics while awaiting results of the culture and sensitivity. The fever resolved with 6 hours after surgery and the attitude was noticeably improved. The culture 3 days later revealed a large number of Clostridium and Bacteroides and a few colonies of E. Coli and Staphylococcus.

Q: What would be an excellent choice for oral medication to send home in this dog?
The anaerobic infection was likely the result of contamination of the subcutaneous area with some of the luminal contents of the jejunum and colon. Perioperative antibiotics given during the first surgery (Ampicillin/Baytril) were insufficient to prevent this infection. In addition, the subcutaneous space was not thoroughly irrigated with saline after closure of the linea alba. Another source of contamination may have come from the instruments used for the enterotomies. “Seeding” of the subcutaneous tissues may have occurred.

Although peritonitis is an important consideration, the clinical course and physical examination findings were inconsistent with a peritonitis (attitude of the animal, still eating, mild fever, 10 days after surgery, etc). One feature common with anaerobe infections is a very thick wall that typically surrounds the abscess. Also, most anaerobic infections seldom form a fistula and drain. In some cases where the fasciitis is necrotizing and aggressive in behavior, it may be necessary for a second surgery. Besides surgical debridement, selection of the proper antibiotic is paramount to ensure success when treating anaerobic infections.

Case 2
A 4-year old castrated male Shih-Tzu was presented with a history of progressive vomiting over several months. Over the past 4-5 days, the dog has been vomiting 6-8 times daily. Overall attitude and level of activity was good until yesterday when the dog began to become weak and lethargic. The emesis contains undigested food, some white foam, no bile, and occurs anytime between 30 minutes to 24 hours postprandial. No diarrhea has been noted.

Q: Based on the history, clinical signs, & signalment, what initial differential diagnoses should one consider?
On physical examination, the dog was weak, dehydrated (approximately 10%), had poor skin turgor, pale mucous membranes, dry, tacky gums, and slight abdominal discomfort upon palpation. The hematocrit was 58%, total protein 9 g/dl, chloride 90, potassium of 2.7. The HCO3 was 30.
Q: How would you classify this dog’s blood gas and electrolyte status?
Q: What would be the fluid of choice and additives (if any)?
Q: What would be your next diagnostic step(s)
Plain radiographs revealed a large gastric silhouette and a round, fluid-filled pylorus. Barium contrast gastrography demonstrated………..
Q: Treatment options: Medical? Surgical?
Q: If surgery is to be performed what are some important preoperative concerns with this dog and how would you address them?
The dog had surgery and did well postoperatively. What are some important dietary restrictions this dog may need for the first 5-7 days postoperatively?
The surgery done on this dog can be used for benign inflammatory processes, mucosal hypertrophy, adenomatous polyps, and palliation for malignant neoplasms. With respect to antral hypertrophy, this surgical procedure allows excellent exposure to allow resection of hypertrophic tissue and adjacent pyloric mucosa/submucosa. In some instances, the smooth muscle may be thickened in addition to the mucosa. In these circumstances, the surgical correction is the same.

Case 3
A 1-year old cat (“Whilie:”) was presented with a history of vomiting for 3 days. There is no history of toxin exposure or foreign body ingestion. A fuzzy toy mouse was found “furless”. There is another cat and dog in the household. Indoor cat only. No travel history. rDVM treated with subcutaneous and intravenous fluids and famotodine. Radiographs were inconclusive. The cat was NPO’d but vomiting continued in spite of this.
The cat was referred to a local pet emergency hospital depressed, normothermic, pulse of 202, and with a nonpainful abdomen, although palpation of the abdomen evoked vomiting. Physical examination findings included mild dehydration and, slightly decreased gut sounds.
An I-Stat 8 on a blood sample was analyzed and abdominal radiographs taken. Radiographs revealed a questionable pattern consistent with a linear foreign body. Contrast (barium) was given and eventually the material was seen covering a linear object as it traversed the esophagus. The Na was increased, the chloride decreased and the blood gas results were as follows: pH 7.54 HCO3: 30 CO2: 45
Surgery was indicated. During endotracheal intubation, a string was found under the tongue and cut. Gastrotomy and use of a red-rubber tube technique was used to remove the string. Postoperatively, the cat vomited one time; audible gut sounds were present 12 hours after surgery.

Q: What are some classic physical examination signs found in a cat with linear foreign bodies?
Q: When performing GI contrast studies, what are some contrast agents that can be used and indications for each?
Q: What factor(s) negatively influence the prognosis related to surgery for linear foreign bodies?