

INTUSSUSCEPTION

BASICS

OVERVIEW

- Folding of one segment of the intestine into another segment or invagination of one intestinal segment into the lumen of the adjacent segment
- Intussusceptions are classified according to their location within the gastrointestinal tract—"ileocolic" (involving the ileum, the last section of the small intestine and colon [large intestine]) and "jejunojejunal" (involving the jejunum, where both segments are in the jejunum, the middle section of the small intestine) intussusceptions are the types most commonly encountered in small animals; others that have been described include: "gastroesophageal" (involving the stomach and esophagus [tube from the throat to the stomach]); "duodenojejunal" (involving the duodenum [the upper or first section of the small intestine] and the jejunum [the middle section of the small intestine]), and "ceocolic".(involving the cecum [the blind pouch of the intestinal tract at the junction of the small intestine and the colon] and the colon)
- The segment entrapped within the lumen of the intussusception is called the "intussusceptum" and the engulfing segment is called the "intussusciptiens"
- Most commonly, the segment of the gastrointestinal tract closest to the mouth is found to be engulfed within the segment that is further away from the mouth; this typically means that the segment closest to the mouth is the intussusceptum and the segment further away from the mouth is the intussusciptiens

GENETICS

- German shepherd dogs appear to be more likely to have gastroesophageal intussusceptions than other breeds of dogs, accounting for approximately 60% of the reported cases of this condition
- German shepherd dogs also appear to be more likely than other dog breeds to have various types of intussusceptions
- Siamese may be more likely to have intussusceptions than other breeds of cats

SIGNALMENT/DESCRIPTION of ANIMAL

Species

- Dogs and cats, but more common in dogs

Breed Predislection

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Mean Age and Range

- Often younger animals due to risk factors (such as parasitism, viral inflammation of the intestines [known as "enteritis"], dietary indiscretion, foreign body ingestion) for development of an intussusception
- Older animals with intussusceptions should be screened carefully for diseases that cause alteration of the normal wave-like movement of the intestines (known as "peristalsis"), such as intestinal cancer

Predominant Sex

- Originally felt that males outnumbered females with gastroesophageal intussusception; recent reports have called this into question
- No documented sex predilection for other types of intussusceptions in small animals

SIGNS/OBSERVED CHANGES in the ANIMAL

- Clinical signs associated with the intussusception depend on the anatomic location of the intussusception
- In general, intussusceptions occurring in sections of the gastrointestinal tract closer to the mouth have more severe clinical signs and disease progression; gastroesophageal intussusceptions typically cause more severe clinical signs than intussusceptions located in sections of the intestinal tract further away from the mouth
- Severity of clinical signs also depends upon the completeness of the blockage or obstruction; typically, complete blockage or obstruction of the gastrointestinal tract cause more severe clinical signs than partial blockage or obstruction
- Vomiting
- Diarrhea (which may or may not have fresh blood or black, tarry stools [known as "melena"] present)
- Abdominal pain
- Abdominal distention
- Lack of appetite (known as "anorexia")
- Weight loss
- Signs may be sudden (acute) in onset or may have been occurring for weeks or months (chronic)
- May display overt abdominal pain/discomfort
- Depending on the severity of the intussusception, as well as the length of time that it has been present, some patients may be showing signs of heart and/or circulatory problems

- A sausage-shaped mass may be palpable in the abdomen; the ability to palpate the intussusception is variable
- Ileocolic intussusceptions may present with protrusion of gastrointestinal tissue from the rectum; this can be differentiated from a rectal prolapse via probing along the side of the protruding tissue—the presence of a blind-ending fold would indicate the existence of a rectal prolapse rather than an intussusception

CAUSES

- Any disease that alters gastrointestinal motility may lead to an intussusception
- Known causes include: inflammation of the intestines (enteritis); recent abdominal surgery; disease involving the wall of the intestinal tract (known as “intestinal mural disease”); and intestinal parasitism
- Intussusceptions occur in 8% to 33% of dogs that have kidney transplants; the reason is unclear, but may be related to immunosuppressive drugs

RISK FACTORS

- Disease processes that alter intestinal motility

TREATMENT

HEALTH CARE

- Initial efforts should be focused on patient stabilization, as well as correction of dehydration and existing electrolyte abnormalities
- Intravenous fluid administration to correct dehydration as well as to replace anticipated ongoing losses through vomiting and diarrhea
- Typically isotonic crystalloids are used; specific choice of fluid type is dictated by specific electrolyte abnormalities identified on blood work, as well as the veterinarian’s preference; crystalloids are fluids that contain electrolytes (chemical compounds, such as sodium, potassium, chloride) necessary for the body to function, crystalloids generally are similar to the fluid content (plasma) of the blood and move easily between the blood and body tissues, example is lactated Ringer’s solution

ACTIVITY

- Controlled activity (leash walks only, no running/jumping) for 10-to-14 days postoperatively, to prevent some complications

DIET

- If patient is actively vomiting—no food or water by mouth
- If vomiting is occurring postoperatively, ileus (a type of intestinal obstruction, caused by lack of normal intestinal motility) may be an underlying cause
- Many patients can be fed within 24 hours of surgical correction

SURGERY

- Surgical correction should be performed as soon as the patient is stable enough to withstand anesthesia and surgery—intussusception is a surgical emergency
- A full abdominal exploratory should be performed to assist in the identification of any potential underlying causes; also, multiple intussusceptions may be present in one patient at the same time
- Some intussusceptions can be reduced manually by gentle manipulation during surgical exploration of the abdomen; upon reduction, the bowel may or may not be able to live (known as being “viable”)
- In the event that manual reduction is not possible, or the bowel has questionable viability, a surgical procedure (known as an “intestinal resection and anastomosis” in which the diseased portion of the intestinal tract is removed surgically and the ends are sutured together) is necessary
- Enteroplication (a surgical procedure in which the intestines are folded or “pleated”) has been proposed to attempt to prevent another intussusception

MEDICATIONS

Medications presented in this section are intended to provide general information about possible treatment. The treatment for a particular condition may evolve as medical advances are made; therefore, the medications should not be considered as all inclusive.

- Use of antibiotics is recommended; the choice of antibiotics used should be dictated by the bacteria that are anticipated to be encountered
- Antibiotics are not recommended greater than 24 hours postoperatively, except in cases in which infection and inflammation of the lining of the abdomen (known as “septic peritonitis”) is present either preoperatively or postoperatively
- Postoperatively, patients should be maintained on intravenous fluids and pain medications should be administered

FOLLOW-UP CARE

PATIENT MONITORING

- Most recurrences occur with the first few days of surgery, but recurrences have been reported up to 3 weeks after surgery
- Intestinal dehiscence is a condition in which the surgery site splits or bursts open; it typically occurs 3-to-5 days postoperatively; infection and inflammation of the lining of the abdomen (septic peritonitis) will result and these patients have to be identified and addressed immediately

PREVENTIONS AND AVOIDANCE

- Prevention of many of the underlying causes can be achieved through such actions as vaccination against parvovirus, intestinal parasite control, limiting situations where patients can be exposed to dietary indiscretion or foreign body ingestion

POSSIBLE COMPLICATIONS

- Recurrence—6% to 27% of patients
- Infection and inflammation of the lining of the abdomen (septic peritonitis)—may result from postoperative intestinal dehiscence (condition in which the surgery site splits or bursts open) or bacterial contamination of the abdomen prior to or during surgery
- “Short-bowel syndrome” is a rare complication that can occur when significant intestinal length is removed surgically (generally more than 70% of the intestine removed in dogs)

EXPECTED COURSE AND PROGNOSIS

- Highly dependent upon underlying cause, location of intussusception, condition at presentation, response to therapy
- Generally, as the location of the intussusception is further away from the mouth, the prognosis improves as these patients are not as affected clinically
- Gastroesophageal intussusceptions have a grave prognosis, with mortality rates approaching 95%
- Intestinal intussusceptions generally have a good prognosis

KEY POINTS

- Immediate surgical intervention is the recommended treatment for intussusceptions—they are considered surgical emergencies
- Intussusceptions can occur in dogs and cats secondary to a wide variety of underlying conditions that alter intestinal motility; identify and treat the underlying cause—in young patients, it is typically inflammation of the intestines (enteritis) or intestinal parasites; in older patients, it is caused more commonly by either cancer or inflammation in the walls of the intestines
- Complications may include death; infection and inflammation of the lining of the abdomen (septic peritonitis); protracted hospital stay to stabilize; and recurrence
- Recurrence rates have been reported to be between 6% and 27%

