

Mid-Section Diverticulum

It may be caused by traction or drive in patients with motor abnormalities of the esophagus. It is usually asymptomatic, appearing incidentally in radiologic studies performed for some other reason and needs no treatment.

Epiphrenic Diverticulum

It occurs above the LES, and it is frequently associated with esophageal motor disorders, particularly achalasia; a fairly typical symptom is regurgitation of large amounts of fluid, usually at night. If symptomatic, treatment, is surgical; a diverticulectomy is performed with wide extramucosal myotomy plus antireflux technique if a hiatal hernia is associated.

1.5. Hiatal Hernia (Figure 9)

A hiatal hernia is a herniation of an abdominal organ, usually the stomach, through the esophageal hiatus. Diagnosis is based on radiographic contrast studies. There are two main types: sliding and paraesophageal.

Sliding Hernia or Type I (90%)

The esophagogastric junction is displaced through the hiatus. There is no hernial protrusion. They are usually asymptomatic. They required treatment only when there is symptomatic gastroesophageal reflux.

Paraesophageal Hernia or Type II (10%)

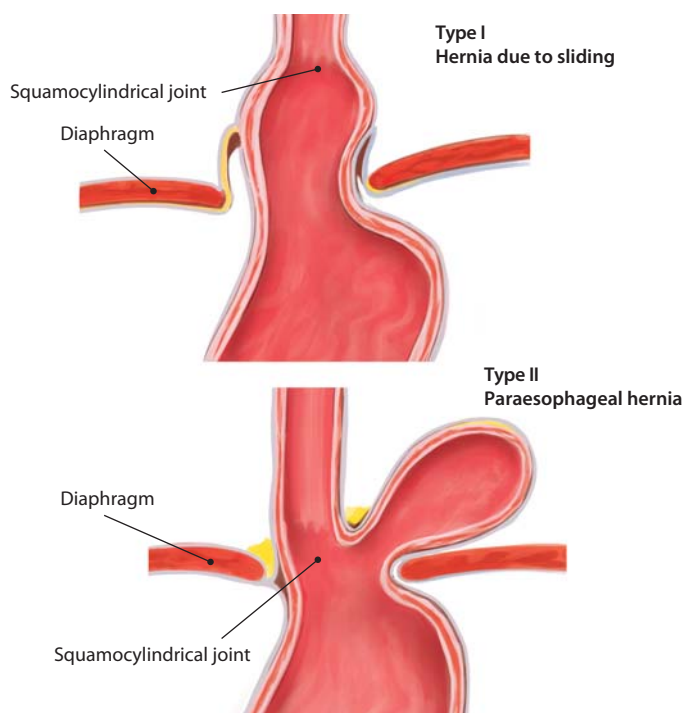


Figure 9. Types of hiatal hernias Paraesophageal

It is a true herniation of the stomach within the hernial sac in the mediastinum. The gastroesophageal junction remains in place, although over time it is frequently associated with a sliding component (com-

bined hernias or type III). Most are asymptomatic. When symptoms and complications occur, they are due to an anatomical defect, and not to a physical disorder of the esophagogastric competence.

The **most common complication** is the recurrent, chronic, asymptomatic and hidden gastrointestinal bleeding. The second most common, but more serious complication is the **gastric volvulus**. Gastric volvulus consists in the stomach rotating on its longitudinal axis (most often) or on about its transverse axis. Clinically it causes severe abdominal pain and Brochardt triad: retching and inability to vomit, epigastric distention and inability to enter a NG tube. It requires emergency laparotomy and repairing of the hiatal hernia. Gastric ischemia may require gastric resection and intestinal anastomosis.

Because of the risk of complications, surgical treatment of type II hiatal hernia is prescribed, even if asymptomatic. A reduction of the hernia sac, resection of the sac and repairing of the hiatus is performed. An antireflux technique is also associated, as GER frequently occurs after surgery, and because up to two thirds of paraesophageal hernias are mixed.

1.6. Squamous Cell Carcinoma of the Esophagus

It is the most common type of neoplasia worldwide.

Incidence and etiology

As for its etiology, the most clearly related factors are alcohol and tobacco, having also been related to ingestion of certain carcinogens like nitrites, smoked opiates and certain mycotoxins; in situations of physical damage to the mucosa, such as ingestion of hot food following sequels of caustic ingestion (it increases risk by 40 being the most potent precancerous conditioning), stenosis by radiation, chronic achalasia and, although it is not proven, there is a suspicion that GERD without Barrett's esophagus can also increase the risk. There is individual susceptibility in the Plummer-Vinson syndrome, in tylosis (hyperkeratosis of palms and plants) and thyroid diseases; it seems that in certain nutritional deficiencies (molybdenum, zinc, vitamin A) and celiac sprue, there may be a slight increased risk of squamous cell esophageal cancer.

Symptoms and diagnosis

Approximately 10-15% are located in the cervical esophagus, 50% in the middle third of the esophagus and 35% in the lower third. Progressive dysphagia of mechanical characteristics and weight loss are the most common symptoms. In practice, it is assumed that the onset of dysphagia means that the disease is incurable and may further result in chest pain, vomiting, regurgitation, aspiration episodes, hiccup and hoarseness. Paraneoplastic presentations such as hypercalcaemia by production of PTH-rP or hypokalemic alkalosis by ACTH production have also been noted. Tracheoesophageal fistulas may occur in 6 to 12% of patients. The disease spreads to nearby and supraclavicular lymph nodes as well as to the liver, lungs and pleura.

Regarding diagnosis, radiographic barium contrast studies (mostly using double contrast techniques) can identify most malignant lesions and differ-

VIRUS	EPIDEMIOLOGY	CLINICAL PRESENTATION	DIAGNOSE
Rotavirus	Severe diarrhea in infants and small children	Dehydrating diarrhea during 5-7 days. Very common vomiting and fever	Immunoassay and electron microscopy
Calicivirus	Pediatric diarrhea associated with fish and seafood and other food in adults	Similar to rotavirus	Immunoassay and electron microscopy
Enteric adenovirus	Endemic diarrhea in infants and small children	Prolonged diarrhea during 5-12 days, vomiting and fever	Immunoassay and electron microscopy
Astrovirus	Pediatric diarrhea and diarrhea in the elderly	Aqueous diarrhea with a duration of 2-3 days	Immunoassay and electron microscopy
Torovirus	Acute and persistent pediatric diarrhea. It occurs in communities and hospital environment	Aqueous dehydrating diarrhea, on some occasions, sanguinolent with vomiting and abdominal pain. Duration 5-7 days	Immunoassay and electron microscopy

Table 5. Epidemiological characteristics, clinical presentations and diagnosis of the main pathogens in the human being

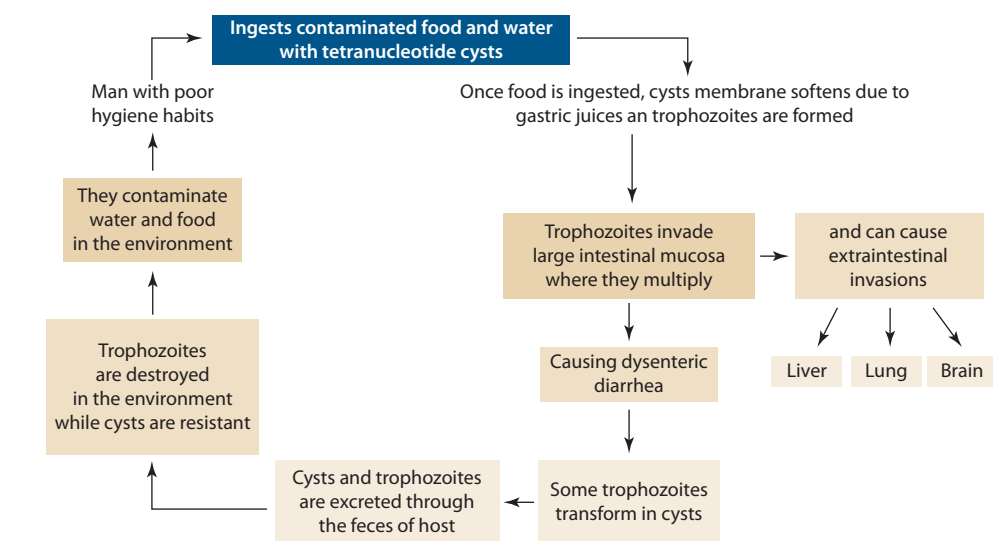


Figure 16. *Entamoeba histolytica* cycle

- In the minority of cases, extraintestinal illness is present (the most frequent is amebic liver abscess).

Diagnosis with microscopic examination of stool samples shows low sensitivity (30-60%). Serum antibodies are detected in 92-97% of patients. The first-choice diagnosis is colonoscopy with biopsies.

The treatment is classified into:

- Luminal amebicides: paromomycin, iodoquinol, diloxanide furate.
- Tissue therapy: metronidazole, tinidazole, eritromicine and chloroquine. Metronidazole has the greatest healing rate (> 90%).

Since almost 10% of asymptomatic patients will develop invasive illness, they must receive treatment. In case of non-invasive illness, treatment with only one luminal agent is appropriate. Patients having amebic colitis must be treated orally with metronidazole (such as paromomycin) followed by a luminal agent in order to prevent recurrent infection (Table 6).

Giardia lamblia (Figure 17)

It is a flagellated protozoan parasite causing diarrhea by malabsorption. This parasite attaches to the epithelium of the proximal small intestine (with no evidence of mucosal invasion). In a biopsy, anatomopathological changes vary from a normal aspect (except for adherent trophozoites) to intense atrophy of intestinal villi. The severity of diarrhea seems to correlate with the intensity of histological changes. Immunological response of the subject is crucial to limit the severity of giardiasis.

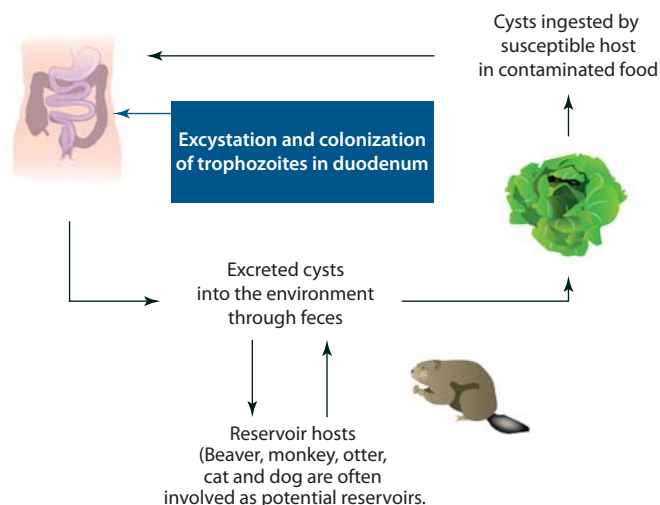


Figure 17. Vital cycle of *Giardia lamblia*

The direct hernia protrudes through the floor of the inguinal canal at Hesselbach triangle, which is formed by the transversalis fascia reinforced by aponeurotic fibers of the transversus abdominis.

Thus, these hernias do not pass through the deep hole and are not located inside the fibers of the cremaster, but behind.

They may rarely enter in the scrotum through the superficial ring and behind the spermatic cord. Since these hernias arise from a diffuse weakness of the transversalis fascia, in the absence of a narrow hernia neck, incarceration risk is low.

Inguinal hernias are more common in men, except the crural, which is more common in women. However, the most common inguinal hernia in women, as in men, is the indirect inguinal. Direct hernias are more common in elderly patients.

Diagnosis

Physical examination is the most important aspect of diagnosis. A hernia may be an asymptomatic insufficiency that is discovered incidentally.

They usually manifest initially by localized pain that worsens with position changes and physical effort. A hernia that was not initially identified will be demonstrated by having the patient push. It is important to differentiate a crural hernia, as in these cases the approach will be different. Incarcerated hernias are accompanied by pain and inability to reduce them. Hernias with strangulation usually present with signs of intestinal obstruction if they contain digestive viscera.

We can try to reduce a hernia incarcerated under mild sedation, but never a strangulated hernia, because of the risk involved in reintroducing an intestinal segment with vascular compromise.

Surgical Treatment

The repair of inguinal hernias is based on the restoration of the continuity of the deep musculoaponeurotic layer of the groin (transverse muscle-transversalis fascia). To this end, various techniques have been devised (Figures 25 and 26 and Table 16).

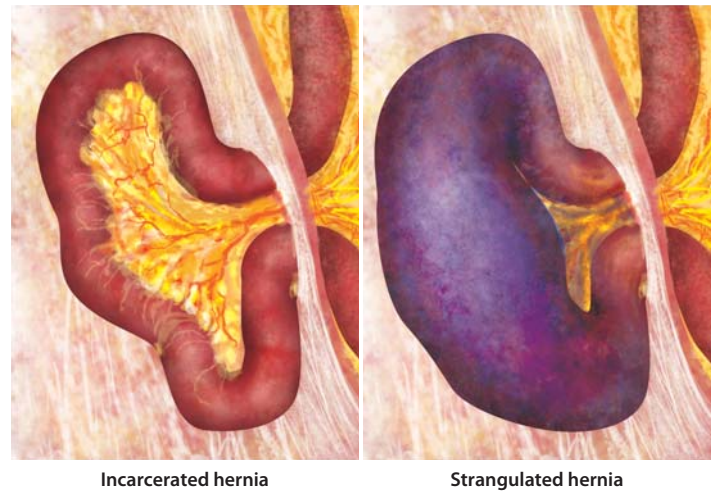


Figure 26. Hernia complications

	INDIRECT INGUINAL HERNIA	DIRECT INGUINAL HERNIA
Access to groin canal	Deep inguinal ring	Posterior wall of the canal
Exit of groin canal	Superficial inguinal ring	Superficial inguinal ring
Approach to the scrotum	Easily	Rare
Strangulation	More frequent	Rare
Situation with respect to epigastric vessels	Lateral (external oblique)	Medial
Pathogeny	Generally congenital	Weakness in muscle wall-fascia transversalis

Table 16. Comparison between direct and indirect inguinal hernia

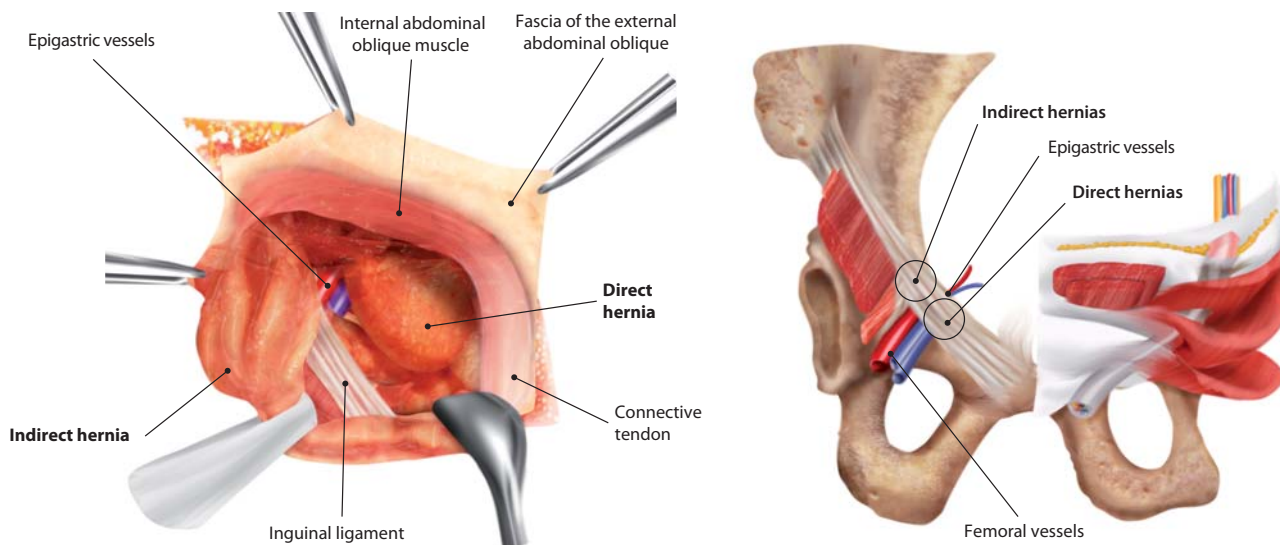


Figure 25. Direct and indirect inguinal hernia