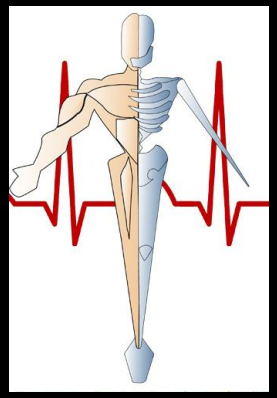
Three Phase CEUs &
SCS Continuing Education Presents:

Radiographic Pathology of the GI Tract ©

Mastery Test

by

Shane Smith, PTA, RT(R), MBA



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Forward:

The premise behind the creation of this tutorial is to provide imaging professionals with access to high quality yet affordable continuing education credits (CEUs).

Our Courses qualify as Category A (technical) points for the following: all ARRT recognized imaging modalities, ARRT-CQR, FDOH –Bureau of Radiation Control, NMTCB, and RCIS.

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Course Abstract & Objectives:

Course Abstract:

The objective of this course is to provide the learner with a computer-based tutorial that will provide them with the means to learn the radiographic anatomy and pathology of the skeletal system. This 30-question mastery test will be employed to ensure that competency of the material has been achieved.

Please scroll down to proceed.

Mastery Test Instructions:

Please place an “X” over the correct response on your answer sheet. If you are unable to print the answer sheet, writing your answers down on a blank sheet a paper is acceptable.

After you complete your answer sheet, snap a picture of it with your cell phone and text it to Shane Smith at (727) 515-9532 or email it to ceuarmy@yahoo.com. Please be sure to include your email and FDOH license number.

We will return your certificate of completion to you via email after we receive your payment and answer sheet. A score of 75% or higher is required to successfully pass this course.

Thank you for your support and please reach out via text message if you encounter any issues.

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Question #1:

Which of the following terms refers to a condition that is marked by an abnormal disturbance in the function and or structure of the human body as a result of some type of injury or trauma?

a. disease
b. pathology
c. pathogenesis
d. etiology

Question #1: Review

Disease:

Simply put, pathology is the study of disease.

Disease is a term that literally refers to a lack of “ease.”

It is a condition that is marked by an abnormal disturbance in the function and or structure of the human body as a result of some type of injury or trauma.

Question #2:

Which of the following is not an example of an inflammatory reaction?

a. abscess
b. ulcer
c. ischemia
d. cellulitis

Question #2: Review

Abscess

This type of inflammatory reaction causes the injurious agent to become a walled-off ball of pus.

Ulcers

This is another type of inflammatory reaction that is the result of a healing wound that is located on the skin or a mucous membrane

Cellulitis

This is an acute bacterial infection of the skin and is a third example of an inflammatory reaction.

Question #3:

Which of the following is not a cardinal sign of inflammation?

a. pain
b. redness
c. swelling
d. All of the above are cardinal signs of inflammation.

Question #3: Review

The cardinal signs of inflammation include heat (results from hyperemia), redness, pain, and often a decrease in function.

Question #4:

The inability of an organ or structure to form properly is called:

a. aplasia.
b. atrophy.
c. hypertrophy.
d. ischemia.

Question #4: Review

Aplasia:

This is the inability of an organ or structure to form properly.

The defective development of an organ can result in the partial or complete loss of an organ.

Question #5:

An abnormal proliferation of foreign cells that forms a mass of tissue within an organ or structure is called:

a. edema.
b. transudate.
c. cachexia.
d. neoplasm.

Question #5: Review

Neoplasm:

This is the abnormal proliferation of foreign cells that form a mass of tissue within an organ or structure.

A neoplasm will compete for nutrients from the cells that normally comprise the host organ and it is often referred to as a mass or tumor.

Oncology is the study of neoplasms.

A benign neoplasm is one that is self-limited and will not spread or seed to distant sites within the host organism.

Question #6:

Cancer of the blood and blood forming tissues is known as:

a. lymphoma.
b. leukemia.
c. adenocarcinoma.
d. sarcoma.

Question #6: Review

Leukemia:

- This is cancer of the blood and blood forming tissues.
- Acute leukemia is characterized by an abnormal proliferation of immature blood cells that do not possess the ability to fight infection.
- Chronic leukemia is characterized by an abnormal proliferation of mature blood cells that do not possess the ability to fight infection.

Question #7:

The most likely cause of the infection (arrows) located on this lateral of the foot would be:

a. virus.
b. parasite.
c. bacteria.
d. none of the above

Question #7: Review

The arrows on this image are pointing to an area where the excrement of a bacterial infection has resulted in the formation of air within the tissue of this patient's foot. This is an indication of cellulitis.

Question #8:

All of the following would be an example of a sign (as opposed to a symptom) except:

a. skin rash.
b. edema.
c. headache.
d. cyanosis.

Question #8: Review

Sign

- This is a manifestation that is observable by the health care worker.
- Examples would be swelling or a skin rash.

Symptom

- This pertains to the patient's perception of what is wrong and is subjective.
- An example would be a headache.

Question #9:

The understanding that there may be no real underlying cause for a disease is referred to as:

a. idiopathic.
b. etiology.
c. syndrome.
d. pathology.

Question #9: Review

Idiopathic

This refers to the fact that there may be no real cause for the disease.

Examples would be hypertension and a spontaneous pneumothorax

Question #10:

Atrophy refers to a decrease in size of cells within an organ or structure. Which of the following would **not** be an underlying cause of atrophy?

a. nerve damage
b. increase in physical activity
c. poor nourishment
d. poor circulation

Question #10: Review

Atrophy is the decrease in size of the cells within an organ or structure.

The following is a list of some of the common causes of atrophy:

Lack of Physical Activity

Poor Nourishment

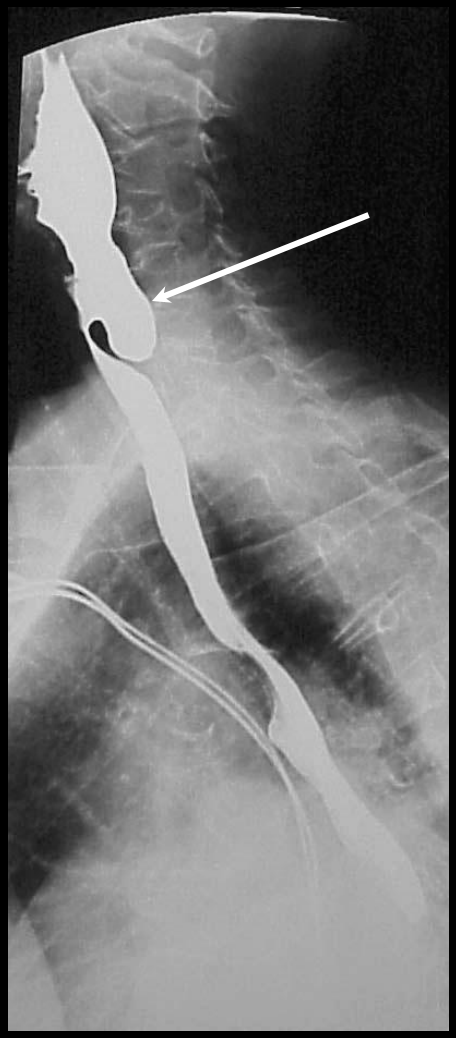
Nerve Damage

Poor Circulation

Question #11:

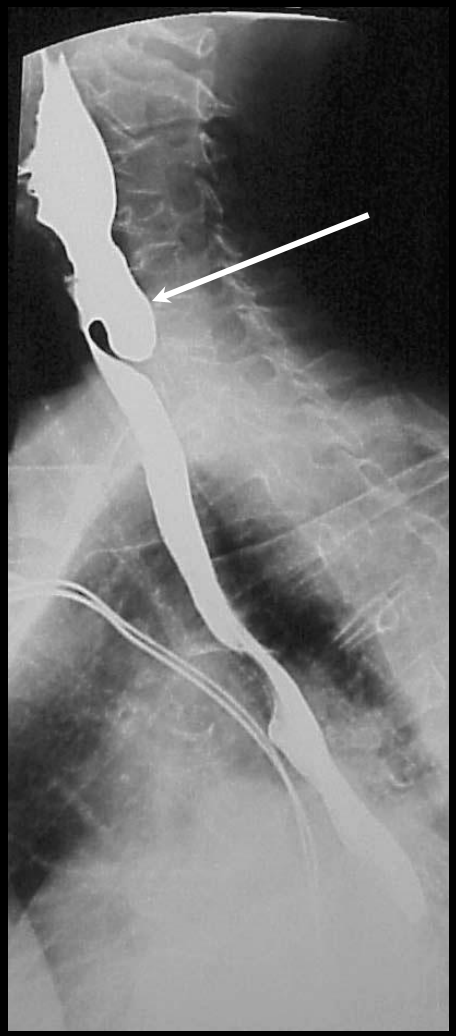
The most likely condition depicted on this radiograph of the esophagus (arrow) would be which of the following?

a. polyp
b. traction diverticula
c. Zenker's diverticula
d. epiphrenic diverticula



Question #11: Review

Zenker's diverticulum arise from the posterior wall of the upper esophagus in the area of the pharynx. Although often asymptomatic, they can cause dysphagia (difficulty in swallowing) and halitosis (bad breath).



Question #12:

The most likely condition depicted on this UGI radiograph (arrows) would be which of the following?

a. epiphrenic diverticula
b. candida
c. hiatal hernia
d. gastric ulcer

Question #12: Review

A hiatal hernia occurs when a portion of the stomach protrudes (herniates) into the thorax through the esophageal opening in the diaphragm.

Question #13:

Which of the following disorders of the intestines involves the “telescoping” of one bowel loop inside another loop?

a. adhesion
b. intussusception
c. volvulus
d. hernia

Question #13: Review

Intussusception occurs when a section of bowel is constricted by peristalsis causing it to prolapse or telescope into itself.

This condition is primarily confined to infants aged 2 to 36 months and occurs more frequently in boys than girls at a ratio of 3:1.

Intussusception is the cause of approximately 1% of all adult bowel obstructions and commonly affects the ileocecal valve.

It is commonly corrected with a barium enema.

Question #14:

The main abnormality on this BE radiograph (arrows) would be which of the following?

a. sessile polyps
b. Crohn's disease
c. diverticulosis
d. pedunculated polyps

Question #14: Review

Diverticulosis:

- Diverticulum can occur along the entire length of the GI tract.
- In regards to the large intestine, they are commonly found in the area of the sigmoid colon.
- Diverticulum often have no signs or symptoms and are often a serendipitous discover on a barium study or colonoscopy.

Question #15:

A volvulus is a type of mechanical bowel obstruction that is defined as a loop of twisted bowel.

a. True
b. False

Question #15: Review

A volvulus is a loop of intestine that has twisted around itself causing either a partial or complete obstruction.

They may resolve on their own, but some will require surgical intervention in order to prevent a loss of blood supply to the affected area and relieve the obstruction.

Question #16:

The lower esophageal sphincter (LES) has failed to relax on this radiograph (arrow) resulting in an esophageal motility disorder. Which of the following would best describe this condition?

a. candida
b. gastroesophageal reflux disease
c. esophageal varices
d. achalasia

Question #16: Review

This UGI radiograph demonstrates a condition called achalasia. This is an esophageal motility disorder that is caused by a lack of peristalsis. As a result, the lower esophageal sphincter (arrow) fails to relax during swallowing and the esophagus fills with, in this case, barium.

Question #17:

Which of the following is one of the most common findings on an UGI series?

a. achalasia
b. hiatal hernia
c. adynamic ileus
d. candida

Question #17: Review

A hiatal hernia occurs when a portion of the stomach protrudes (herniates) into the thorax through the esophageal opening in the diaphragm.

This is known as a sliding hiatal hernia and it is the most common type of hiatal hernia encountered.

A rolling or paraesophageal hiatal hernia if very rare but occurs when a portion of the stomach herniates into the thorax while the gastroesophageal junction remains stationary.

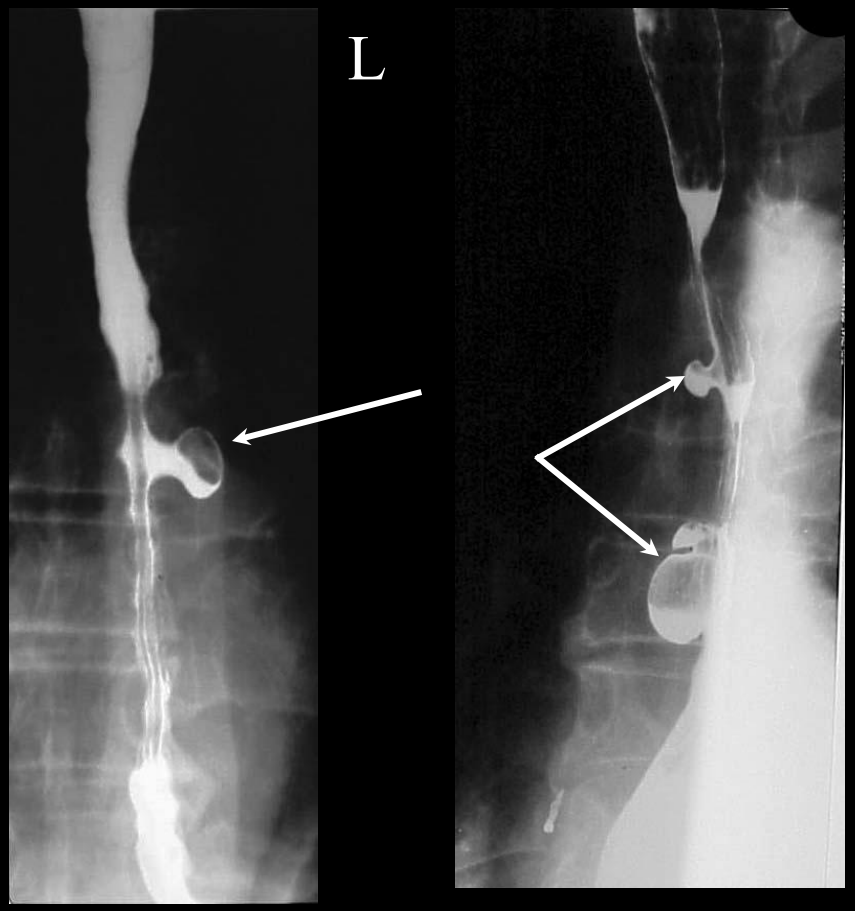
This is one of the most common findings on an UGI series.

It can affect up to 50% of the population as some point in their lives.

Question #18:

The most likely condition depicted on this radiograph of the esophagus (arrows) would be which of the following?

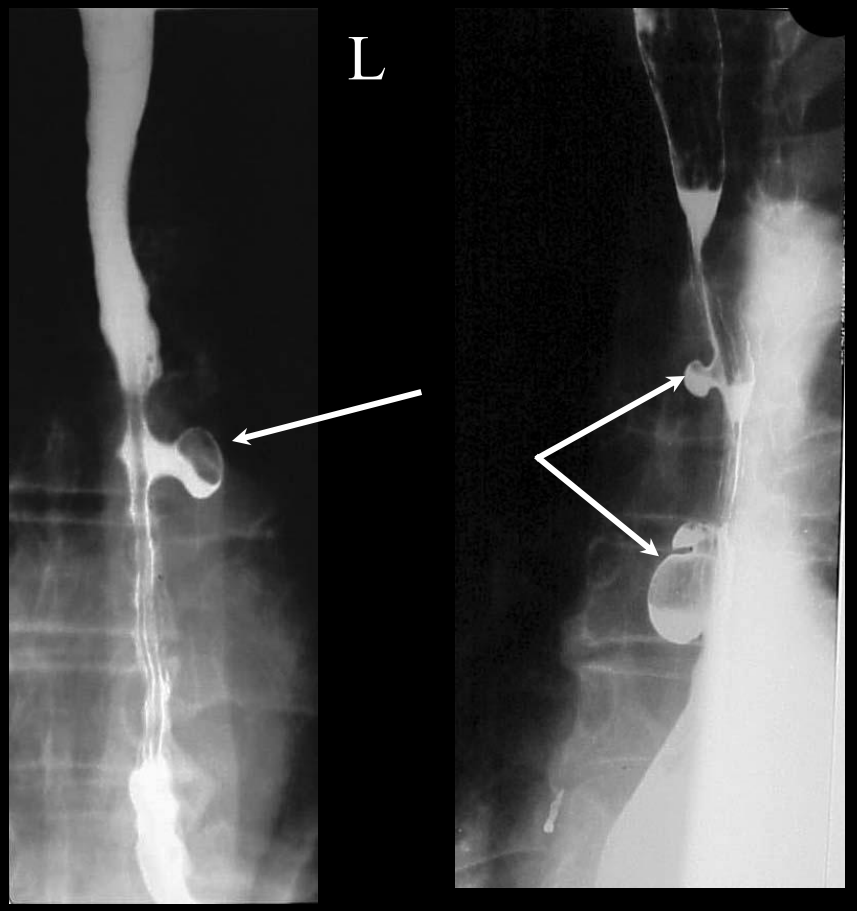
a. Zenker's diverticula
b. epiphrenic diverticula
c. traction diverticula
d. polyp



Question #18: Review

Traction Diverticulum:

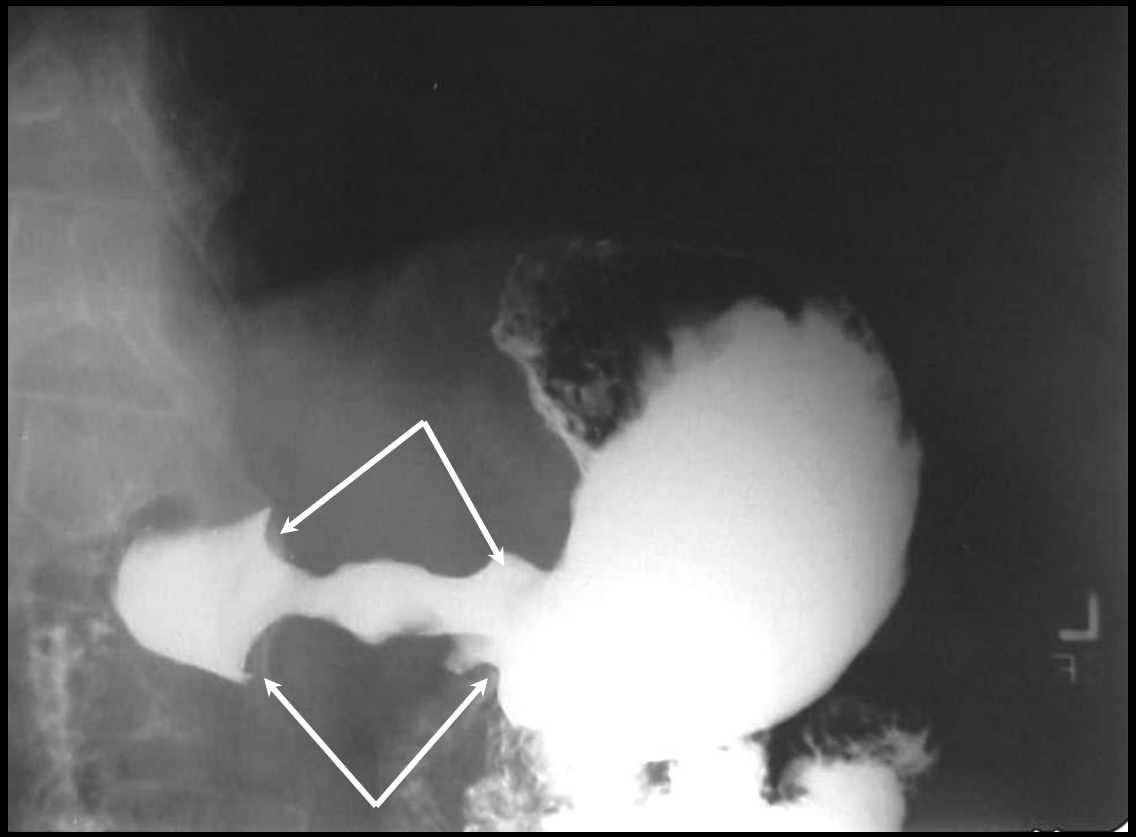
- This type of diverticulum forms in the mid esophagus area.
- Traction diverticulum may form due to scarring from pulmonary tuberculosis or an inflammatory process within the mediastinum.



Question #19:

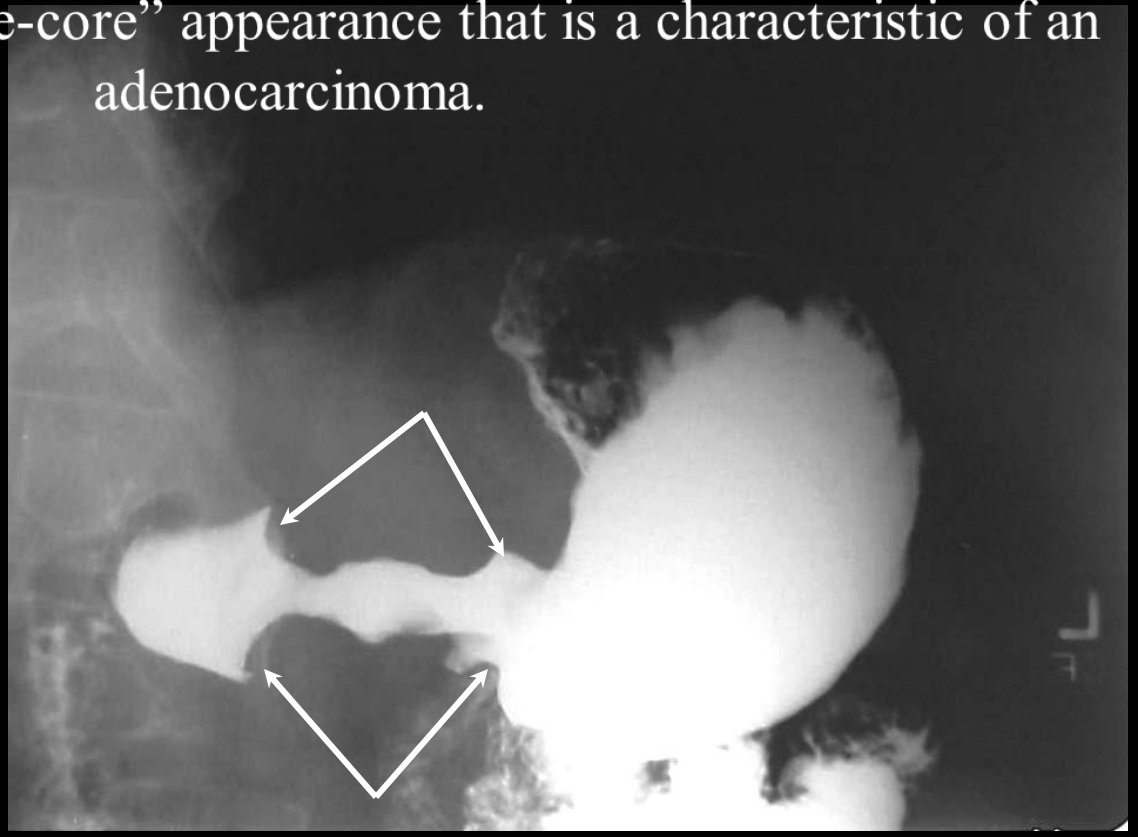
The main abnormality depicted on the radiograph below (arrows) is a sessile polyp?

a. True
b. False



Question #19: Review

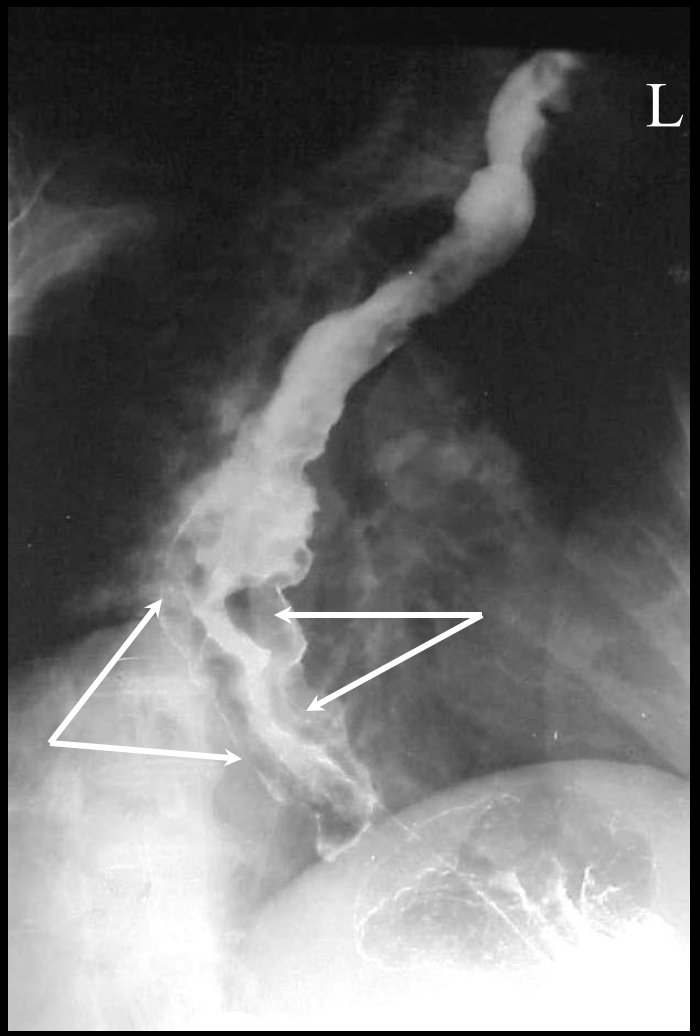
The arrows on this UGI radiograph are pointing to a gastric carcinoma. Note the classic "apple-core" appearance that is a characteristic of an adenocarcinoma.



Question #20:

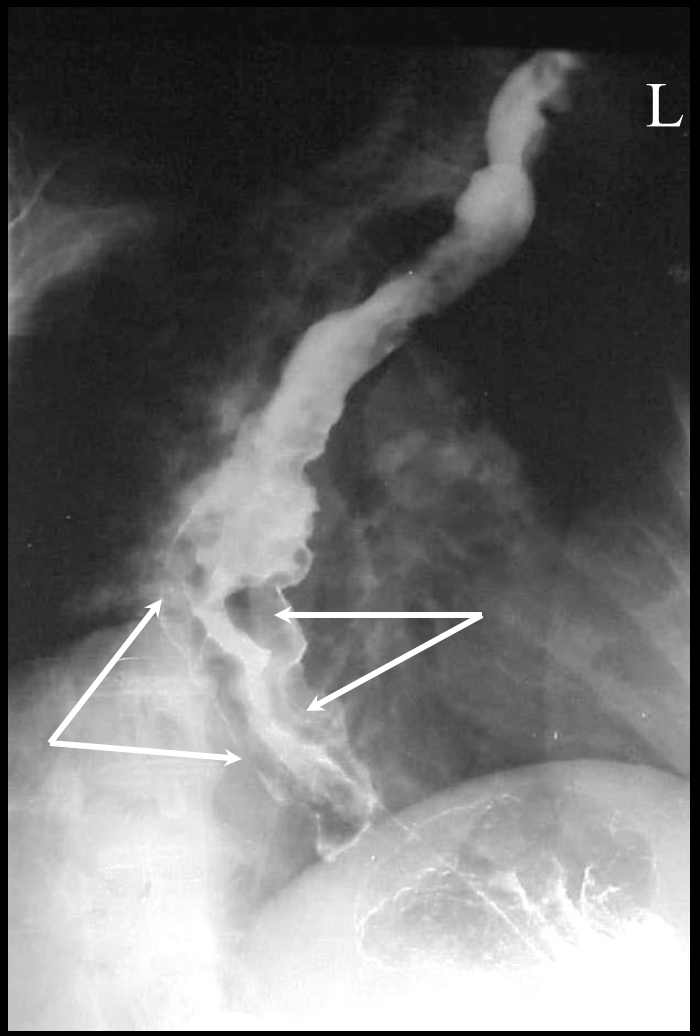
The arrows on this radiograph of the esophagus are pointing to esophageal varices. Damage to which of the following organs is the likely etiology for this condition?

a. liver
b. kidneys
c. pancreas
d. adrenal glands



Question #20: Review

The arrows on this esophagram are pointing to tortuous varicose veins of the esophagus known as esophageal varices. They are the result of portal hypertension that is often caused by cirrhosis of the liver. This disease is commonly found in patients suffering from alcoholism.



Question #21:

The bowel pattern demonstrated on this radiograph is the result in the disruption of the normal peristaltic action of the intestines. Which of the following is the most likely etiology for this condition?

a. adhesion
b. adynamic ileus
c. constipation
d. intussusception

Question #21: Review

The dilated loops of small bowel found on this radiograph indicate the presence of a small bowel obstruction. The surgery staples (arrows) in the lower abdomen are an indication that this obstruction may have been caused by a combination of exposure to anesthesia and abdominal surgery. Therefore, this obstruction would be categorized as an adynamic or paralytic ileus.

Question #22:

The most likely etiology for the condition depicted on this radiograph would be which of the following?

a. bowel adhesion
b. Crohn's disease
c. adenocarcinoma
d. inguinal hernia

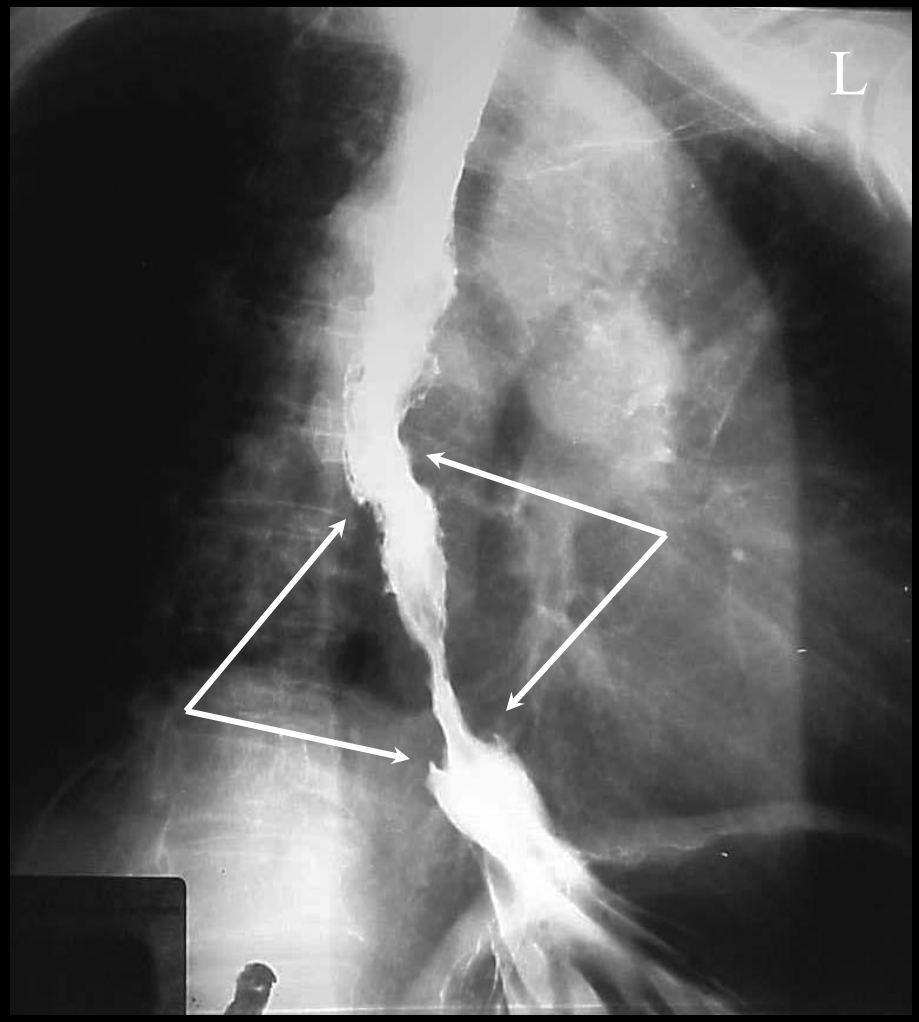
Question #22: Review

A large portion of this patient's bowel (arrows) has protruded through an unnatural opening within the abdominal wall. This is called an inguinal hernia, and it is estimated that about 5% of the population will develop an abdominal wall hernia.

Question #23:

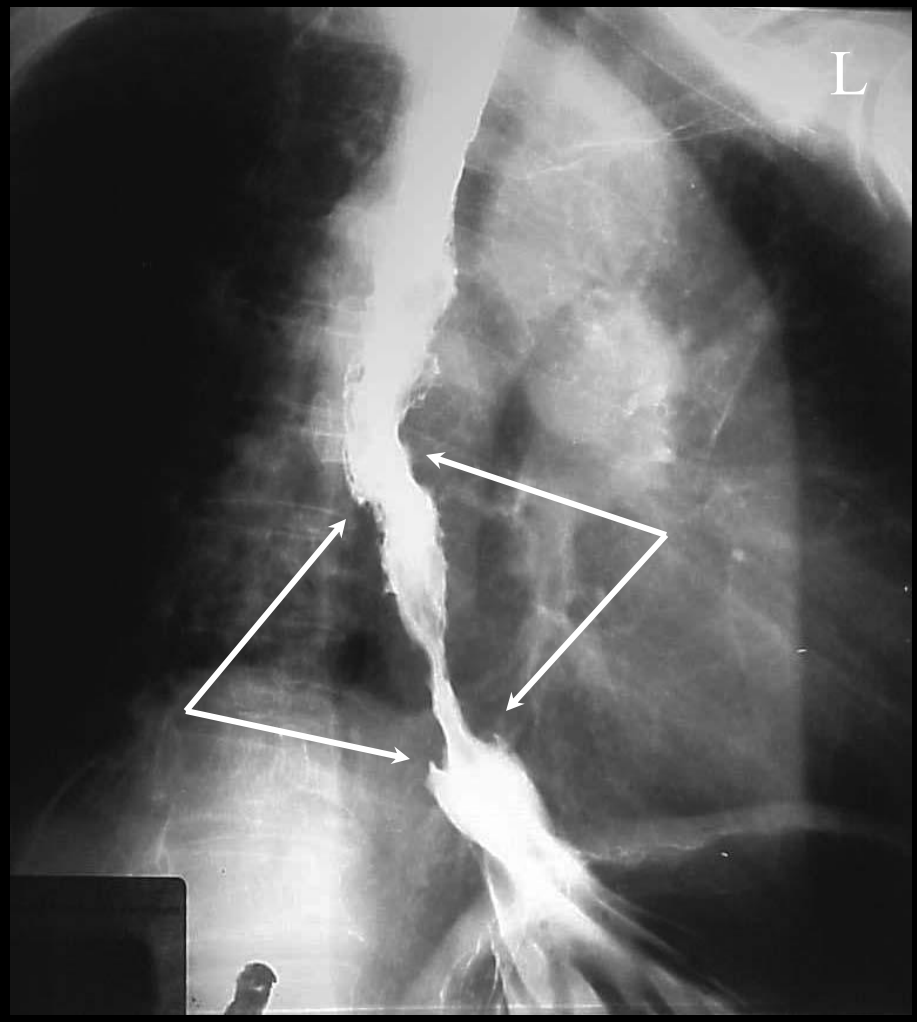
Which of the following is the most likely etiology for the condition depicted (arrows) on this radiograph of the esophagus?

a. esophagus cancer
b. candida
c. esophageal varices
d. gastroesophageal reflux disease



Question #23: Review

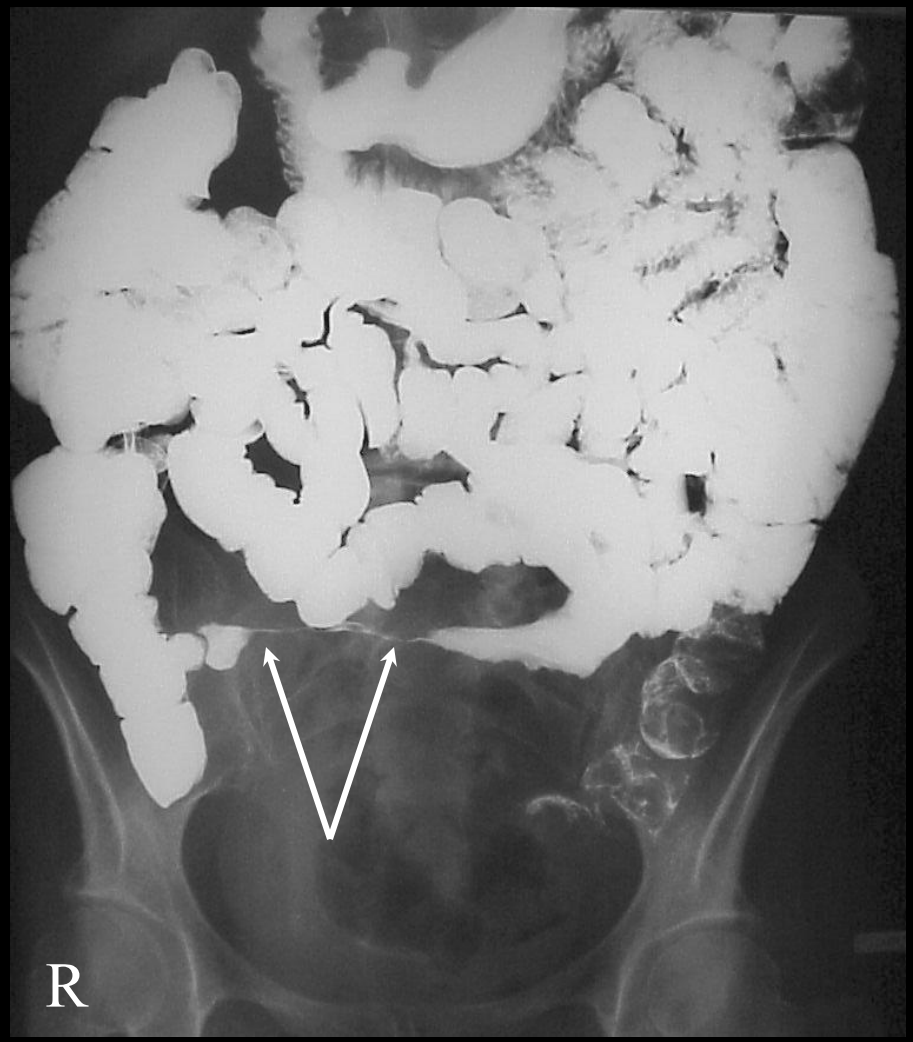
The arrows on this esophagram are pointing to areas where stenosis of the esophagus has occurred due to the presence of esophageal cancer. This type of cancer has a very low survival rate and has a high incidence in smokers and alcoholics. Notice how the distal portion of the lesion has taken on the classic "apple-core" appearance of an adenocarcinoma.



Question #24:

The arrows on this radiograph are pointing to a condition referred to as the "string sign." This is a characteristic of which of the following diseases?

a. Wilm's tumor
b. adenocarcinoma
c. Crohn's disease
d. candida



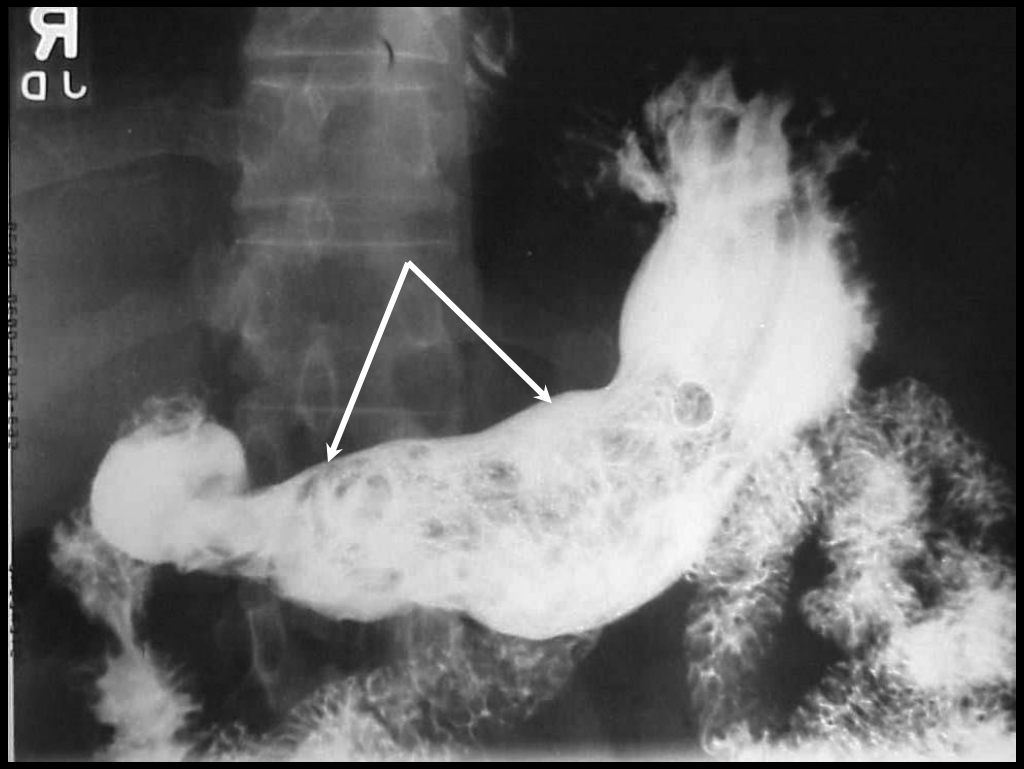
Question #24: Review

This image demonstrates the classic radiograph appearance of the "string sign" that is a characteristic of Crohn's disease.

Question #25:

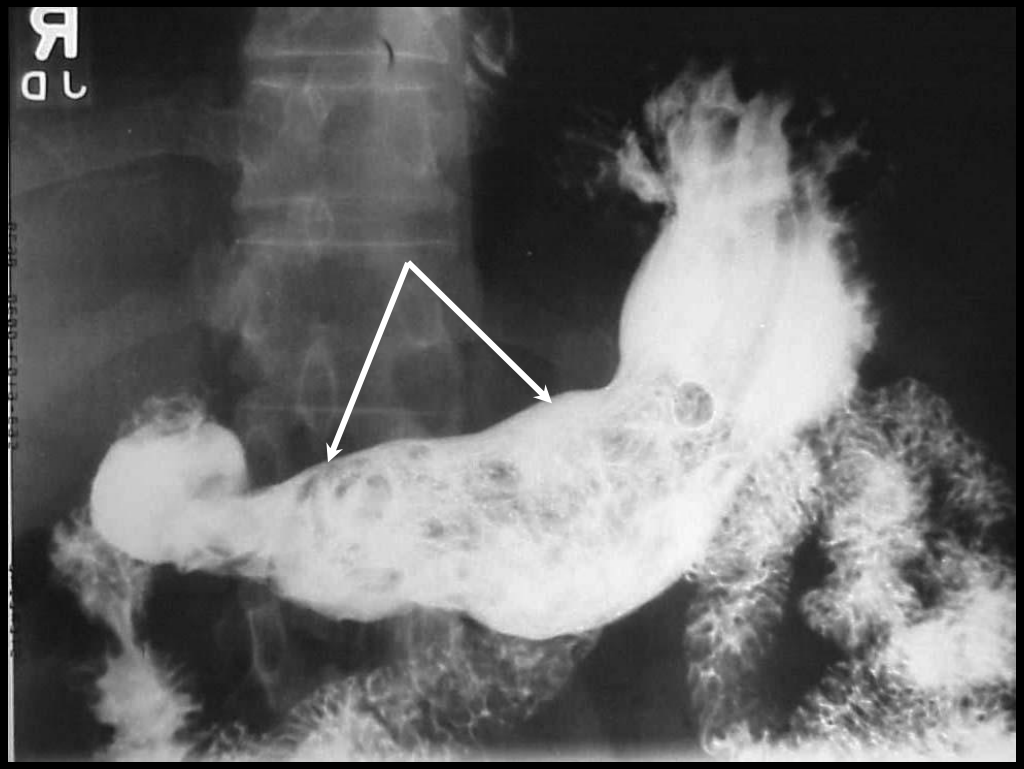
The hard mass of entangled material found within the stomach (arrows) on the radiograph below is referred to as a bezoar.

a. True
b. False



Question #25: Review

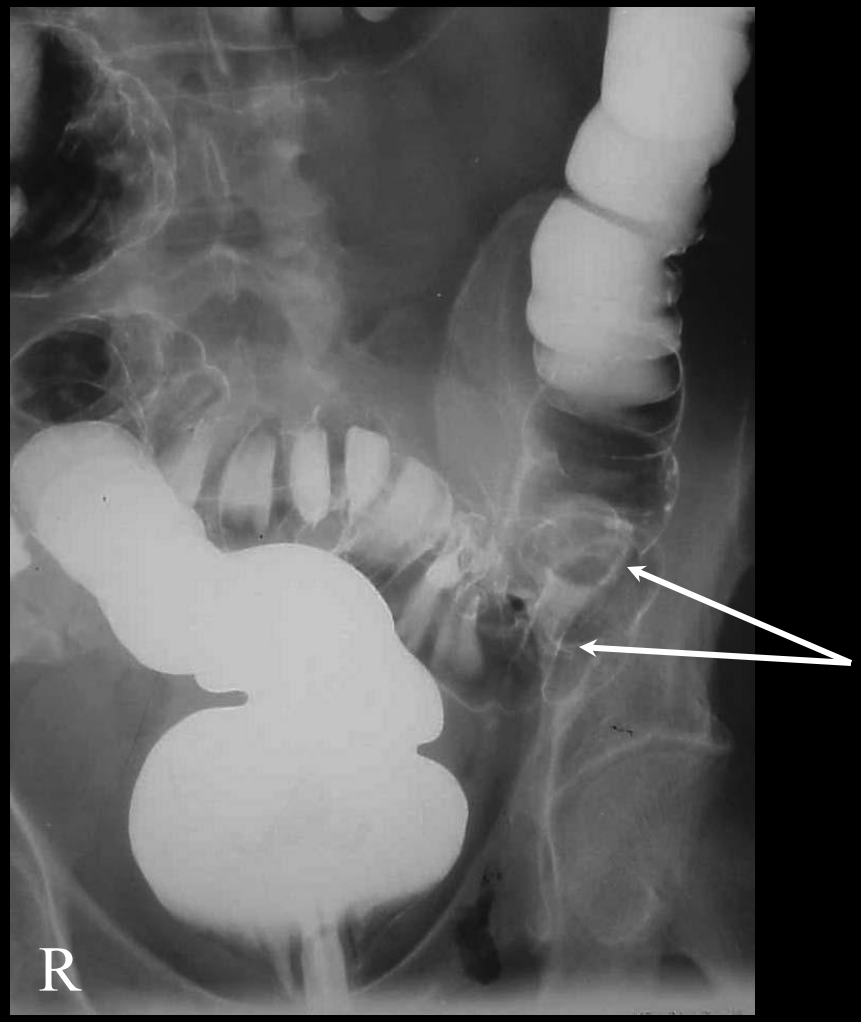
The artifact (arrows) depicted on this radiograph consists of a hard ball of entangled materials called a bezoar. It consists of large mass of hair and/or vegetable fibers that cannot be digested.



Question #26:

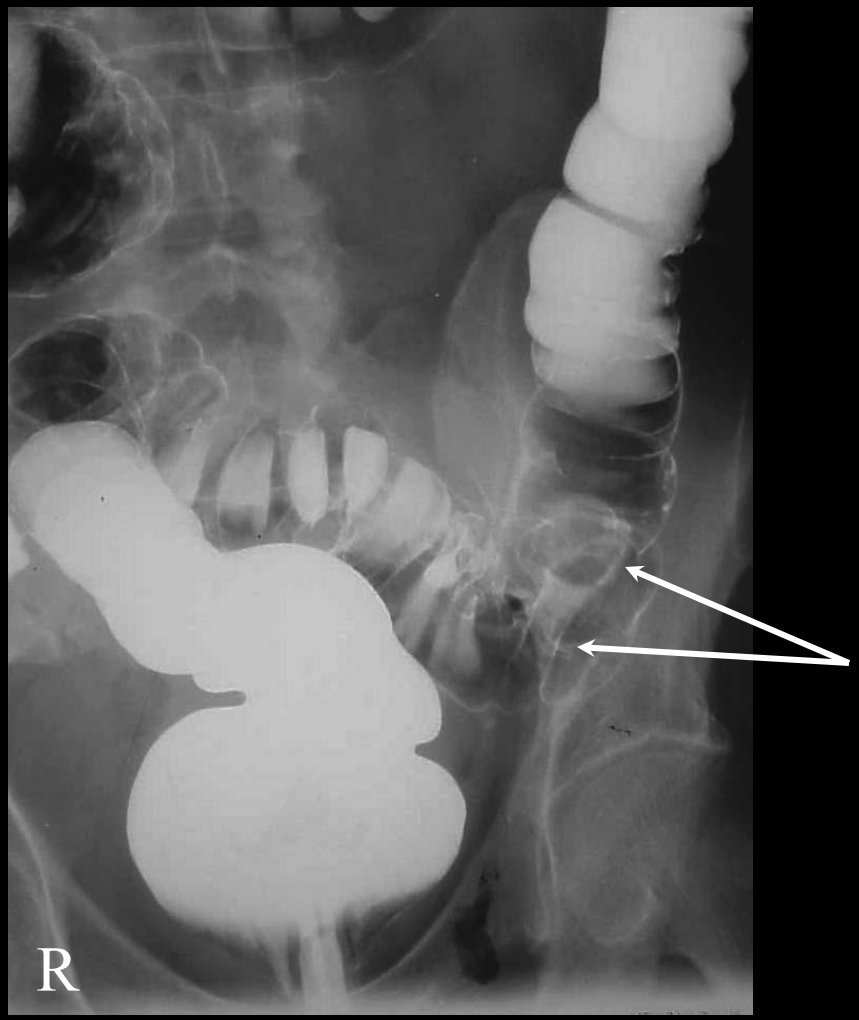
Which of the following is the most likely etiology for the condition depicted (arrows) on this radiograph of the large intestine?

a. diverticulosis
b. polyp
c. Crohn's disease
d. diverticulitis



Question #26: Review

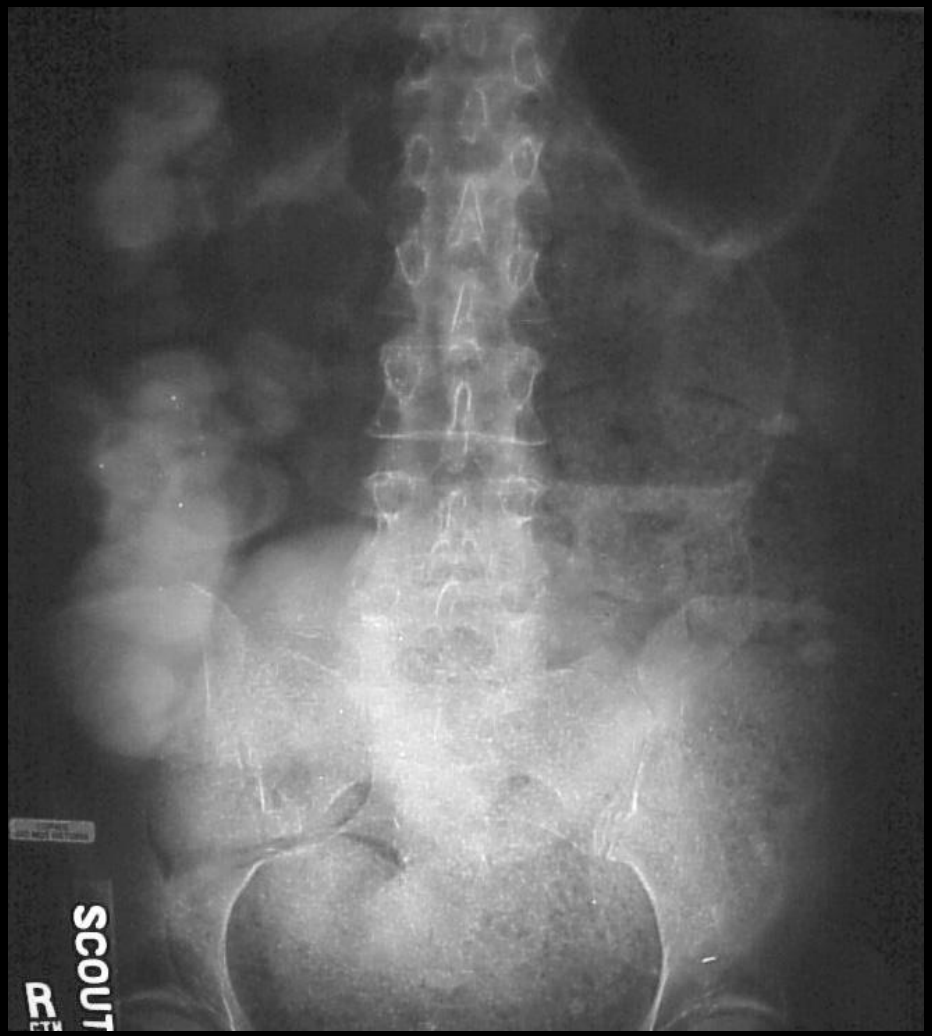
The arrows on this image are pointing to a pedunculated polyp. This type of neoplasm can lead to cancer and is therefore routinely removed.



Question #27:

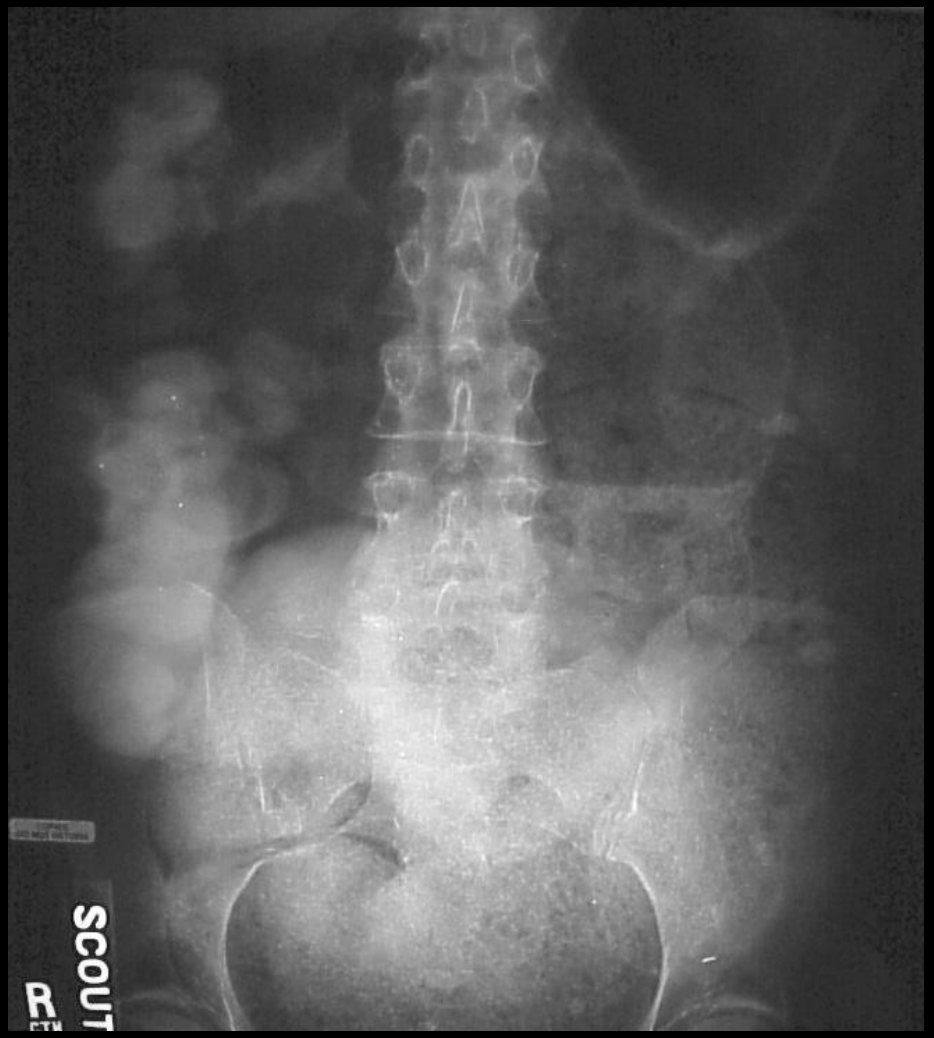
Which of the following is the most likely etiology for the grainy appearance on this radiograph of the abdomen?

a. ascites
b. constipation
c. GI bleed
d. paralytic ileus



Question #27: Review

The grainy appearance on this KUB is the result of a fecal impaction (arrows). Constipation is a very common digestive complaint where the patient experiences hard stool that can be difficult to defecate.



Question #28:

Which of the following is the most likely etiology for the structure identified by the arrow on this BE radiograph?

a. diverticula
b. adenocarcinoma
c. polyp
d. appendicolith

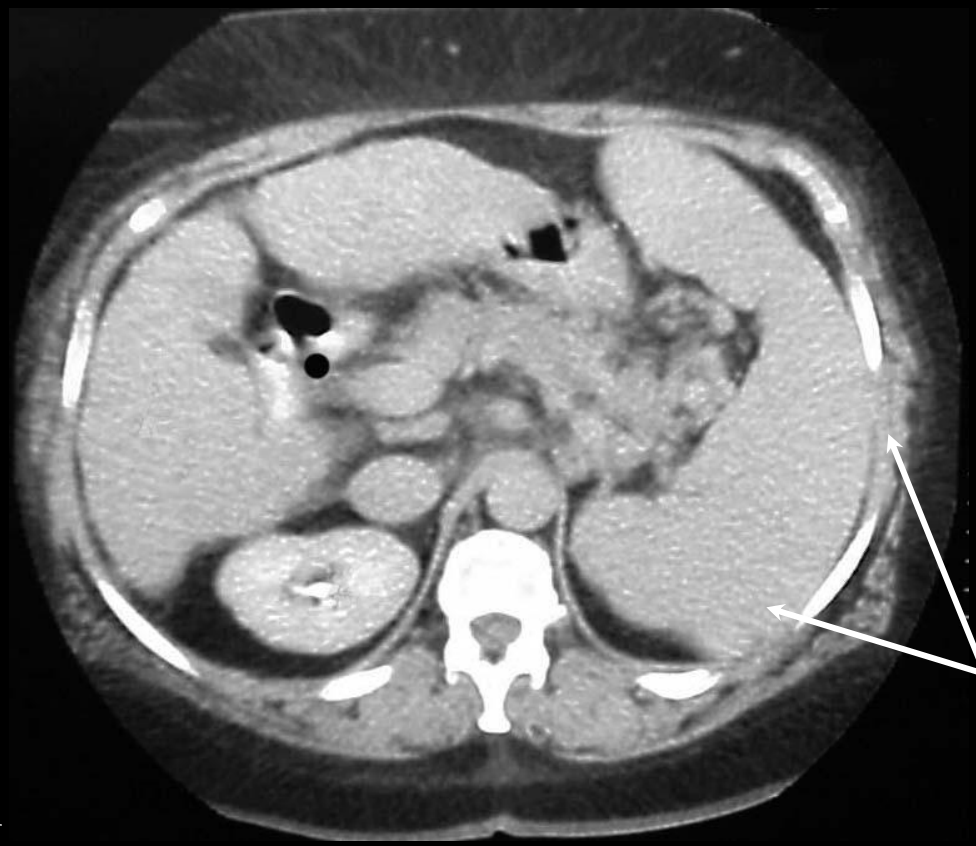
Question #28: Review

Diverticula can form anywhere along the alimentary canal. In this instance, the lining of the appendix has weakened resulting in the formation of a small diverticula.

Question #29:

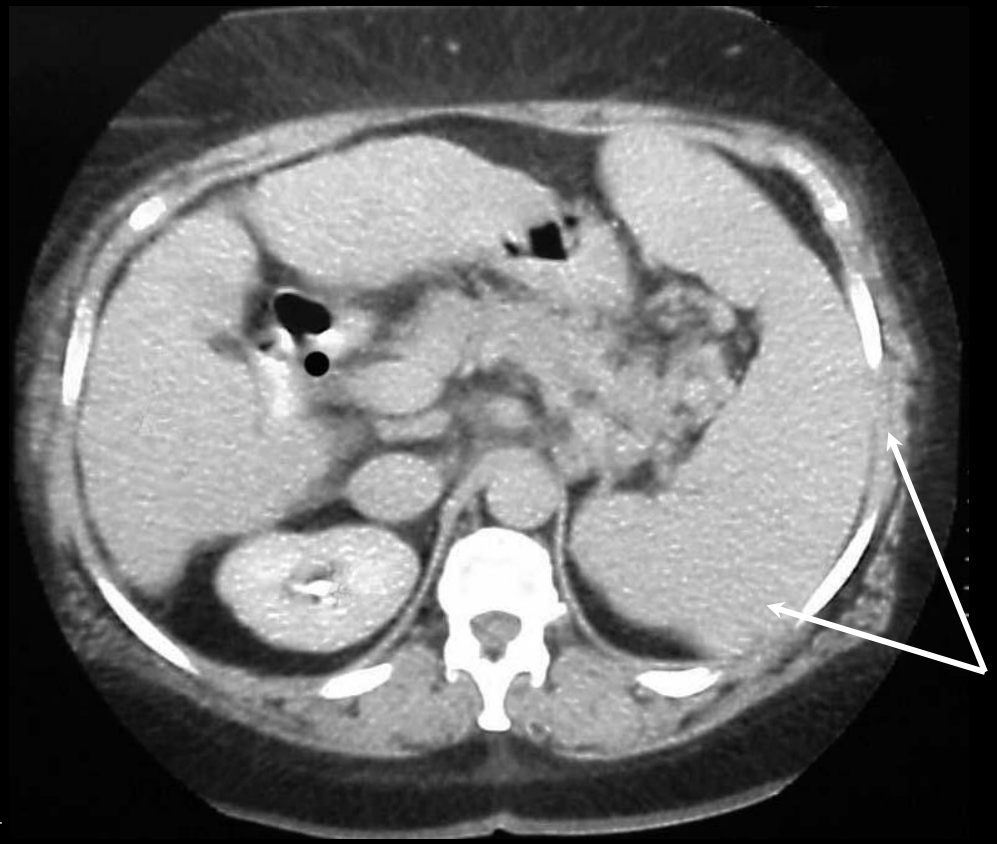
Which of the following would be the most likely condition for what the arrows on this CT image of the abdomen are pointing to?

a. hepatomegaly
b. kidney hyperplasia
c. splenomegaly
d. none of the above



Question #29: Review

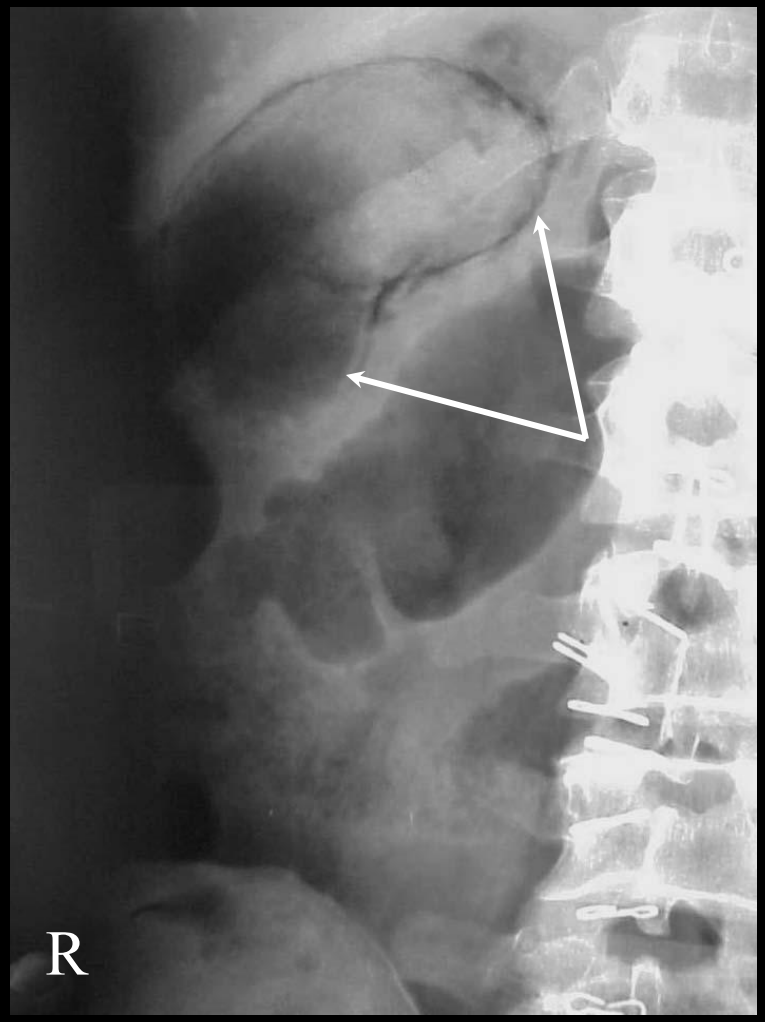
The arrows on this CT scan of the abdomen is pointing to an enlarged spleen. This condition is referred to as splenomegaly.



Question #30:

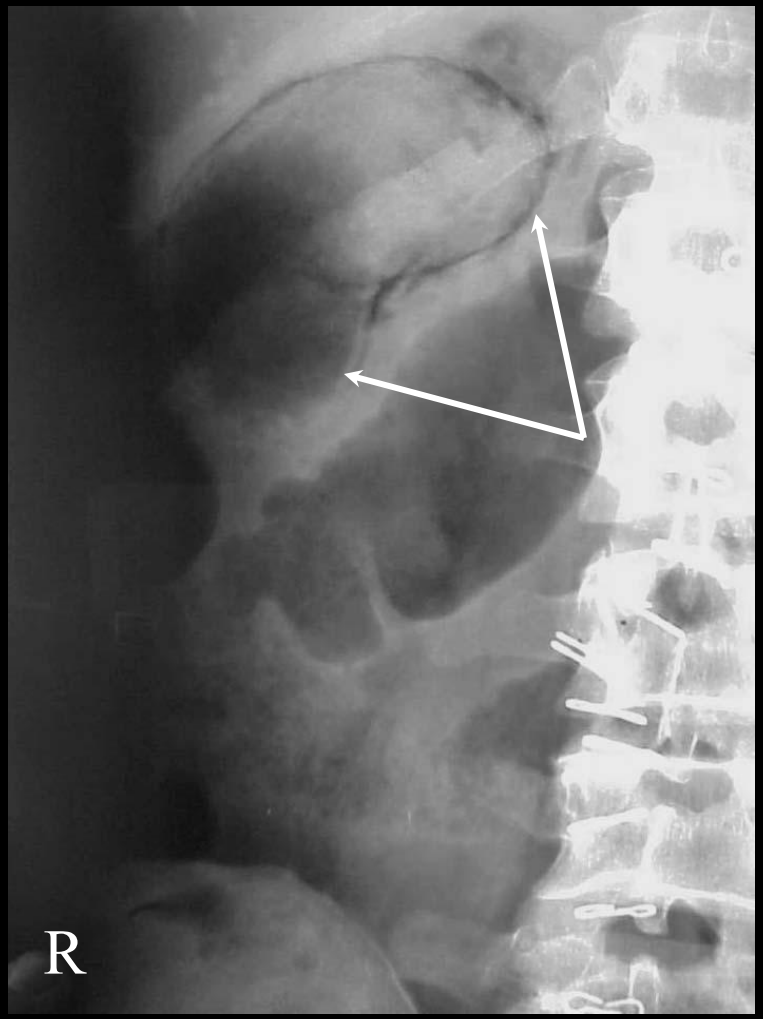
The main abnormality on this radiograph (arrows) is an emphysematous gallbladder. This condition is caused by a bacterial infection.

a. True
b. False



Question #30: Review

The arrows on this radiograph of the abdomen are pointing the gallbladder that has been outlined with air. This has been caused by an air producing bacterial infection that has reached the confines of the gallbladder and is referred to as emphysematous cholecystitis.



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About the Author:

Shane began his career in the health field by becoming a certified personal trainer by AFAA (Aerobics and Fitness Association of America) in 1993. Soon after he began taking prerequisite classes at the Community College of Rhode Island for the Physical Therapist Assistant program.

In 1996, Shane was accepted at Newbury College in Brookline, MA to enroll into the Physical Therapist Assistant program. While attending classes at Newbury, he was employed by the college as a tutor for kinesiology. Shane graduated Cum Laude from Newbury College in 1998 with an A.A.S. degree. He was also elected into the Who's Who Amongst Students in American Universities and Colleges for 1997-1998. Shane immediately took his licensing test in Rhode Island and successfully received his license as a Physical Therapist Assistant.

Shane moved to Florida 1999 and began working as a Physical Therapist Assistant in the acute, skilled nursing and outpatient settings. He has done extensive co-treating with Occupational Therapists and Occupational Therapist Assistants on a wide variety of patients with varying health conditions.

In 2001, Shane enrolled into the Radiography program at St. Petersburg College. There he gained a whole new appreciation for anatomy and health/patient care. He graduated top of his class in 2003 with an A.A.S. degree in radiography and earned the Mallinckrodt Award. Shane took the national registry by the ARRT and obtained a General Radiographer's license. He has been working in the field ever since, Shane has also successfully completed two MRI courses offered by St. Petersburg College.

In 2003, his radiographer instructor, John Fleming, inspired him to create a company that offered high quality continuing education units at an affordable price. SCS Continuing Education was born. SCS Continuing Education currently has two continuing education programs approved by the Florida Physical Therapy Association (FPTA), the Mississippi State Board of Physical Therapy (MSBPT) and the Arkansas State Board for Physical Therapy (ARPTB) for Physical Therapists and Physical Therapist Assistants and two continuing education programs approved by the Florida Department of Health (FDOH) Bureau of Radiation Control for Category A credits for radiographers.

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