

**TABLE 33-1** KEY ABDOMINAL PAIN SYNDROMES

CONDITION	TYPE	LOCATION	RADIATION
<b>ACUTE ABDOMINAL PAIN</b>			
Appendicitis	Crampy, steady	Periumbilical, RLQ	Back
Cholecystitis	Intermittent, steady	Epigastric, RUQ	Right scapula
Pancreatitis	Steady	Epigastric, periumbilical	Back
Perforation	Sudden, severe	Epigastric	Entire abdomen
Obstruction	Crampy	Periumbilical	Back
Infarction	Severe, diffuse	Periumbilical	Entire abdomen
<b>CHRONIC ABDOMINAL PAIN</b>			
Esophagitis	Burning	Retrosternal	Left arm, back
Peptic ulcer	Gnawing	Epigastric	Back
Dyspepsia	Bloating, dull	Epigastric	None
IBS	Crampy	LLQ, RLQ	None

IBS, Irritable bowel syndrome; LLQ, left lower quadrant; RLQ, right lower quadrant; RUQ, right upper quadrant.

avoiding any motion may be suffering from peritonitis because movement makes peritoneal pain worse. Abdominal distention indicates obstruction or ascites. Visual inspection for peristalsis is helpful for the diagnosis of small bowel obstruction, but this sign is present only in the early stages. Focal areas of distention may indicate hernias; notice should also be taken of any scars from prior surgeries.

Auscultation should be performed in several areas to evaluate the timbre and pattern of bowel sounds and to search for bruits or hums. Absence of bowel sounds suggests ileus, whereas the presence of hyperactive, high-pitched sounds may indicate obstruction. Multiple bruits alert the examiner to the possibility of significant vascular disease, suggesting ischemia.

The abdomen should be palpated gently, starting in an area away from the pain. The examiner searches for areas of localized tenderness and rebound as well as for masses and enlarged organs. Percussion is performed to identify the size of organs or to determine the presence of ascites. Pain on percussion of the abdomen indicates peritoneal reaction, as does severe rebound tenderness.

A rectal examination is important for identifying a rectal tumor in the case of colon obstruction or tenderness high in the rectum in acute appendicitis. A pelvic examination should be performed in women to rule out pelvic inflammatory disease.

### ACUTE ABDOMEN

The evaluation of a patient with an acute abdomen is a challenge in medical practice. The acute abdomen is caused by sudden inflammation, perforation, obstruction, or infarction of an intra-abdominal organ. The urgent question to be answered is whether immediate surgery is needed; a quick but complete evaluation is necessary to avoid undue delay in intervention for patients who require surgery. The physician must assess for abdominal tenderness, rebound, and guarding. Early surgical consultation should be obtained, even in doubtful cases, rather than awaiting confirmation of the diagnosis via laboratory or radiologic studies. However, many extra-abdominal conditions such as pneumonia, myocardial infarction, nephrolithiasis, and metabolic disorders can cause acute abdominal pain.

In some instances of the acute abdomen in its early stages, there are few findings. The examiner should be aware that patients with benign chronic conditions may have severe pain at presentation that is out of proportion to any physical findings. The context provided by the medical history, particularly previous abdominal surgery, is very valuable. Indeed, a patient with sudden crampy pain and abdominal distention may have an intestinal obstruction caused by adhesions or an incarcerated hernia. Therefore, examination of the entire patient, looking for jaundice, skin lesions, evidence of prior surgery, or evidence of chronic liver disease, is important.

In evaluating a patient with acute abdominal symptoms, a complete blood cell count with differential, a urinalysis, and measurements of serum amylase, lipase, bilirubin, and electrolytes are necessary components of the laboratory examination. Additional studies may be done but usually do not aid in the rapid decision making required. An elevated white blood cell count may indicate inflammatory disease, and extremely high values are typical of acute intestinal ischemia. An elevated serum amylase concentration usually indicates acute pancreatitis, although a perforated ulcer or mesenteric thrombosis can also cause hyperamylasemia.

Radiographic examination with an abdominal film is important to reveal the intra-abdominal gas pattern, and an upright film that includes the diaphragm or a left lateral decubitus film may identify intra-abdominal air suggesting perforation of a hollow viscus. Ultrasonography can be helpful in the diagnosis of acute cholecystitis or appendicitis. Computed tomography (CT) scans have become more helpful with technologic improvements in scanners; early CT scans allow prompt diagnosis of sometimes unsuspected abdominal diseases. Examination with a radiopaque medium should be used judiciously, especially if surgery is anticipated. **E-Figures 33-1 through 33-4** are CT images of appendicitis, diverticulitis, pancreatitis, and ulcerative colitis, respectively.

### CHRONIC ABDOMINAL PAIN

In the evaluation of chronic abdominal pain, it can be challenging to distinguish between organic pain resulting from a specific pathologic process and functional pain. The location and characteristics of pain, as already discussed, serve as important guides, as do other accompanying symptoms. The presence of postprandial nausea and vomiting suggests chronic peptic ulcer, disorders of gastric emptying, or outlet obstruction. Documentation of weight loss mandates the search for an organic cause, such as inflammatory bowel disease or celiac disease. If anorexia accompanies weight loss, particularly in elderly patients, cancer must be excluded. If no cancer can be found and all objective tests are normal, the possibility of chronic depression must be entertained.

The most frequent causes of chronic abdominal pain are functional. Dyspepsia is characterized by chronic intermittent epigastric discomfort, sometimes accompanied by nausea or bloating. These symptoms are not always relieved by acid suppression and may be the result of an underlying motor disorder. Furthermore, when *Helicobacter pylori* is found in a patient with dyspeptic symptoms, its eradication may not necessarily lead to the resolution of symptoms. Controversy exists regarding the most

