INTRODUCTION

The term *acute abdomen* refers to any clinical condition characterized by severe abdominal pain that develops over a period of hours. Rapid, accurate diagnosis is essential if morbidity and mortality are to be significantly decreased***.(Urban et al.,2000).***

The differential diagnosis includes an enormous spectrum of disorders ranging from benign self-limited diseases to conditions that require emergency surgery. In a review of approximately 30,000 patients with acute abdomen, de Bombal observed that 28% of patients had appendicitis, 9.7% had acute cholecystitis, 4.1% had small-bowel obstruction, 4% had acute gynecologic disease, 2.9% had acute pancreatitis, 2.9% had acute renal colic, 2.5% had perforated peptic ulcer, and 1.5% had diverticulitis. In one third of patients, no cause could be determined.***(Gore et al.,2000).***

Acute abdominal pain is the most common cause of hospital admission in the United States. ***(Martine and Rossi.,1997).*** It account for 5% to 10%of all emergency department visits***.(Sanson and O`Keefe.,1996).*** In 35% to 40% of all hospital admission for abdominal pain, the pain is nonspesific. In some cases surgical intervention may be requird. Symptoms suggesting the need for surgical correction include a pain duration of less than 48 hours and pain followed by vomitting.Similarly suggestive signs include rebound tenderness and guarding on physical examination***.(Brewer et al.,1976).***

Gastroenteritis is the most common cause of abdominal pain not requiring surgery ***(Sanson and O`Keefe.,1996)***, whereas appendicitis is the most common cause for which surgery is necessary.***(Brewer et al.,1976).***

The age of the patient is crucial; the differential diagnosis of abdominal pain in a child is quite different from that in an elderly patient. There are common conditions that cause acute abdominal pain in different age groups. ***(table 1). (Bell.,1996).***

Age of Onset. Age is a key factor in the evaluation of abdominal pain (Ruddy.,2000).

TABLE 1
Differential Diagnosis of Acute Abdominal Pain by Predominant Age

Birth to one year	Two to five years	Six to 11 years	12 to 18 years
Infantile colic	Gastroenteritis	Gastroenteritis	Appendicitis
Gastroenteritis	Appendicitis	Appendicitis	Gastroenteritis
Constipation	Constipation	Constipation	Constipation
Urinary tract infection	Urinary tract infection	Functional pain	Dysmenorrhea
Intussusception	Intussusception	Urinary tract infection	Mittelschmerz
Volvulus	Volvulus	Trauma	Pelvic inflammatory disease
Incarcerated hernia	Trauma	Pharyngitis	Threatened abortion
Hirschsprung's disease	Pharyngitis	Pneumonia	Ectopic pregnancy
	Sickle cell crisis	Sickle cell crisis	Ovarian/testicular torsion
	Henoch-Schönlein purpura	Henoch-Schönlein purpura	
	Mesenteric lymphadenitis	Mesenteric lymphadenitis	

Ruddy.,2000

Intestinal obstruction and incarcerated hernias can similarly occur in persons of all ages. However, intussusception is the most likely cause of intestinal obustruction in children ***(Bell.,1996)***, whereas adhesions are the more likely cause in adults. In elderly patients, pain from a myocardial infarction can be referd to the upper abdomen.***(Sanson and O`Keefe.,1996).***

In patient age 60 years or older, biliary diseases and intestinal obstruction are the most common causes of acute abdominal pain that is surgically correctable. In contrast, in patients younger than 60 years, acute appendicitis is the most common surgically correctable cause, accounting for approximately 25% of cases. ***(Irvin.,1989).*** In children, acute appendicitis is the leading cause of acute abdominal pain; it accounts for 32% of children with acute abdominal pain admitted to the hospital. ***(Bell.,1996).***

Pain that is sudden in onset or awakens patient from sleep suggests a perforated viscous. ***(Musawi and Thompson.,2000)***. Knowing the timing of associated nausea and vomiting is essential to narrowing the diagnostic possibilities. Pain usually precedes vomiting when abdominal pain is from surgically correctable causes, whereas the reverse is true for medical conditions such as gastroenteritis. ***(Martine and Rossi.,1997).***

The abdomen is divided into 4 quadrants, which are further divided (with some overlap) into the epigastric, periumbilical, and suprapupic regions. ***(Martine and Rossi.,1997)***. Right upper quadrant pain is often reported by patients with duodenal ulcers, acute pancreatitis, acute cholecystitis, and acute hepatitis. Left upper quadrant pain is reported frequantly by patients with gastritis, gastric ulcer, acute pancreatitis, and splenic infarction or rupture. Right lower quadrant pain is typically reported by patients with acute appendicitis, and left lower quadrant pain by patients with diverticulitis. Gynecological and urologic causes of acute abdominal pain can also present with lower quadrant abdominal pain.

The pain is most often described as being sharp or dull and may be described as being cramping (i.e colicky). Colicky pain is defined as a rhythmic pain resulting from intermittent spasms. ***(Murtagh.,1994)***.Colicky abdominal pain is most commonly associated with biliary diseases, nephrolithiasis, and intestinal obstruction. ***(Martine and Rossi.,1997).***

Clinical assessment is often difficult, and laboratory and conventional radiological findings are often nonspecific. The development of cross-sectional imaging has had a tremendous impact on the diagnosis and treatment of acute abdomen. In particular, computed tomography (CT) has gained widespread acceptance as a reliable and highly accurate modality in the evaluation of affected patients. CT is most often indicated in patients with severe abdominal pain who may require surgery or other forms of intervention. It is probably most beneficial in patients who present with confusing or conflicting clinical signs and symptoms. Conventional CT has prospectively demonstrated an accuracy of nearly 95% in acute abdomen. ***(Urban et al.,2000).***

The introduction of spiral CT technology, with advances in contrast dynamics and high-resolution volumetric data acquisition, has further enhanced the utility of CT in abdominal imaging. Spiral CT is a rapid, cost-effective procedure and provides diagnostic information that can help determine appropriate clinical management. It is useful not only in diagnosing the primary abnormality but also in detecting and characterizing the full extent of disease. Spiral CT is the imaging modality of choice for patient triage, and many hospitals now have spiral CT scanners on-site in the emergency department. Undoubtedly, the need for conventional radiology has diminished due to the increasing utility of spiral CT in abdominal imaging. ***(Urban et al.,2000).***

Although sonography has developed a niche in evaluating the gallbladder in all patients and the appendix in children and women of reproductive age, CT has evolved as the premier technique for triaging most patients. CT has earned this role because it can provide a global perspective of the gut, mesenteries, omenta, peritoneum, retroperitoneum, subperitoneum, and extraperitoneum uninhibited by the presence of bowel gas and fat. Spiral scanning allows thinner contiguous images to be obtained without increasing radiation exposure and without respiratory misregistration. The rapidity of scanning allows several acquisitions to be obtained during different phases of a single IV contrast bolus. ***(Gore et al.,2000).***