

Original article:

Study of ultrasonography role in abdominal pain cases in adults

Dr Pavan kumar

MD (Radiologist) , Department of Radiology , Zydus Medical College , Dahod , Gujrat

Corresponding author: Dr Pavan kumar , Department of Radiology , Zydus Medical College , Dahod , Gujrat

Abstract:

Introduction: Acute abdominal pain can represent a spectrum of conditions from benign and self-limited disease to surgical emergencies. Evaluating abdominal pain requires an approach that relies on the likelihood of disease, patient history, physical examination, laboratory tests, and imaging studies.

Material and methods: The present study work was done in Department of Radiology. The sample size was 50 patient included in our study. The sample size was estimated with the help of expert statistician. Herewith we included cases of abdominal pain complaints visiting to OPD . The patients that were referred from Medicine & surgery Department were only included in present study. The obstetrics cases , Pediatric cases were excluded from present study.

Results: In our present out of 50 cases, 18 were female patients while 38 were male patients . The mean age range was 38 ± 12.50 . The majority patients were from lower socioeconomic group . In our study , the causes of acute abdominal pain range from life-threatening to benign self-limiting disorders. Acute appendicitis, kidney stone , diverticulitis, cholecystitis, and bowel obstruction are common causes of acute abdominal pain. Other important but less frequent conditions that may cause acute abdominal pain include perforated viscus and bowel ischemia.

Conclusion: Due to relatively low cost, and absence of ionizing radiation or need for contrast materials, US has maintained an important role in the evaluation of the acute abdomen even in todays modern clinical practice.

Keywords: Ultrasonography , abdominal pain

Introduction:

Acute abdominal pain can represent a spectrum of conditions from benign and self-limited disease to surgical emergencies. Evaluating abdominal pain requires an approach that relies on the likelihood of disease, patient history, physical examination, laboratory tests, and imaging studies.¹The location of pain is a useful starting point and will guide further evaluation. For example, right lower quadrant pain strongly suggests appendicitis. Certain elements of the history and physical examination are helpful (e.g., constipation and abdominal distension strongly suggest bowel obstruction), whereas others are of little value (e.g., anorexia has little predictive value for appendicitis). Ultrasonography is recommended when a patient presents with right upper quadrant pain.² Some Authors assert that the location of pain is a useful starting point and will guide a further evaluation. However some causes are more frequent in the paediatric population (like appendicitis or adenomesenteritis) or are strictly related to the gender (i.e. gynaechologic causes). It is also important to consider special populations such as the elderly or oncologic patients, who may present with atypical symptoms of a disease. These considerations also reflect a

different diagnostic approach.³ With this view present study was planned to study of ultrasonography role in abdominal pain cases in adults

Material and methods:

The present study work was done in Department of Radiology. The sample size was 50 patient included in our study. The sample size was estimated with the help of expert statistician. Herewith we included cases of abdominal pain complaints visiting to OPD .

The patients that were referred from Medicine & surgery Department were only included in present study. The obstetrics cases , Pediatric cases were excluded from present study.

The routine ultrasonography was carried out. Results were tabulated and analyzed.

Results:

In our present out of 50 cases, 18 were female patients while 38 were male patients . The mean age range was 38±12.50. The majority patients were from lower socioeconomic group .

Table 1) Distribution of diagnosed cases

Diagnosed cases	Number of cases	Percentage
Acute appendicitis	19	38
Cholecystitis	7	14
Bowel obstruction cases	4	8
Bowel ischemia	2	4
Kidney stone	14	28
Other causes	10	20
Total cases	50	100

In our study , the causes of acute abdominal pain range from life-threatening to benign self-limiting disorders. Acute appendicitis, kidney stone , diverticulitis, cholecystitis, and bowel obstruction are common causes of acute abdominal pain. Other important but less frequent conditions that may cause acute abdominal pain include perforated viscus and bowel ischemia.

Discussion:

In our study , the causes of acute abdominal pain range from life-threatening to benign self-limiting disorders. Acute appendicitis, kidney stone , diverticulitis, cholecystitis, and bowel obstruction are common causes of acute abdominal pain. Other important but less frequent conditions that may cause acute abdominal pain include perforated viscus and bowel ischemia.

US is an imaging modality widely available in the Emergency Department. The lower cost and in particular the lack of radiation exposure are the most important advantages of US compared to CT. Furthermore US is a real-time dynamic examination and this characteristic conveys dynamic information about bowel motility, and changes in position and to depict blood flow. ³

A variety of causes may impair peristalsis, including high-grade small-bowel obstruction, ischemia, enteritis, and infiltrative processes. Another important advantage of US examination is the possibility to correlate the US findings with the point of maximal tenderness.

The most common US technique used to examine patients with acute abdominal pain is the graded-compression procedure [4]. With this technique, interposing fat and bowel can be displaced or compressed by means of gradual compression to show underlying structures. Furthermore, if the bowel cannot be compressed, the noncompressibility itself is an indication of pathology (inflammation such as appendicitis, intussusception, malignancy or luminal distension resulting from obstruction) [4].

Another example of dynamic examination is the evaluation of bowel hernias, mesentery, and omentum through the Valsalva manoeuvre. This manoeuvre may reveal an intermittent hernia, may show the contiguity of a mass with the intraperitoneal space, allowing better depiction of the hernia sac or abdominal wall defect, and showing reducibility [5].

Conclusion:

Due to relatively low cost, and absence of ionizing radiation or need for contrast materials, US has maintained an important role in the evaluation of the acute abdomen even in today's modern clinical practice.

References:

1. Spalinger J, Patriquin H, Miron MC, Marx G, Herzog D, Dubois J, Dubinsky M, Seidman EG. Doppler US in patients with crohn disease: vessel density in the diseased bowel reflects disease activity. *Radiology*. 2000;5:787–91.
2. Danse EM, Kartheuser A, Paterson HM, Laterre PF. Color Doppler sonography of small bowel wall changes in 21 consecutive cases of acute mesenteric ischemia. *JBR-BTR*. 2009;5:202–206.
3. Rosen MP, Ding A, Blake MA, Baker ME, Cash BD, Fidler JL, Grant TH, Greene FL, Jones B, Katz DS, Lalani T, Miller FH, Small WC, Spottswood S, Sudakoff GS, Tulchinsky M, Warshauer DM, Yee J, Coley BD. ACR Appropriateness Criteria® right lower quadrant pain--suspected appendicitis. *J Am Coll Radiol*. 2011;5:749–55. doi: 10.1016/j.jacr.2011.07.010.
4. Stoker J, van Randen A, Laméris W, Boermeester MA. Imaging patients with acute abdominal pain. *Radiology*. 2009;5:31–46. doi: 10.1148/radiol.2531090302.
5. Reginelli A, Mandato Y, Solazzo A, Berritto D, Iacobellis F, Grassi R. Errors in the radiological evaluation of the alimentary tract: part II. *Semin Ultrasound CT MR*. 2012;5(4):308–17.