



ORIGINAL ARTICLE

Role of multidetector computed tomography (MDCT) in diagnosis of subhepatic appendicitis

Ahmed Mohamed Abougabal ^{a,*}, Ahmed Hafez Afifi ^a, Mohamed Ibrahim Kasem ^b

^a Diagnostic Radiology Department, Faculty Of Medicine, Alex University, Egypt

^b General Surgery Department, Faculty Of Medicine, Alex University, Egypt

Received 27 April 2012; accepted 12 May 2012

Available online 12 June 2012

KEYWORDS

Multidetector computed tomography (MDCT);
Subhepatic appendicitis

Abstract *Background:* Acute appendicitis is a common surgical condition that is usually managed with early surgery, and is associated with low morbidity and mortality. However, some patients may have atypical symptoms and physical findings that may lead to a delay in diagnosis and increased complications.

Ascending subhepatic appendicitis presenting with right upper abdominal pain may be clinically indistinguishable from acute pathology in the gallbladder, liver, biliary tree, right kidney and right urinary tract.

Aim of the work: To study the role of multidetector computed tomography in diagnosis of subhepatic appendicitis.

Subjects & methods: In the current study, we included fifteen patients diagnosed radiologically and confirmed surgically as subhepatic appendicitis.

Ultrasonography followed by multidetector computed tomographic examination were performed to all patients before surgery.

Results: The clinical diagnosis of the patients included in this study at presentation was acute cholecystitis in four patients, pyelonephritis in three, and ureteric colic in three. Five patients were referred with uncertain diagnosis.

The presence of subhepatic appendicitis was confirmed sonographically only in two patients. Computed tomography (CT) identified correctly subhepatic appendicitis in all cases.

* Corresponding author. Address: 3(A) Moaskar Romany Street, Roushdy, Alexandria 21311, Egypt. Tel.: +20 100 5048800; fax: +20 203 5413710.

E-mail address: abougabal74@yahoo.com (A.M. Abougabal).

Peer review under responsibility of Egyptian Society of Radiology and Nuclear Medicine.



Production and hosting by Elsevier

Conclusion: Our study indicates the usefulness of multidetector CT in diagnosing atypical ascending subhepatic appendicitis.

© 2012 Egyptian Society of Radiology and Nuclear Medicine. Production and hosting by Elsevier B.V. Open access under [CC BY-NC-ND license](#).

1. Introduction

Several locations of the vermiform appendix occur in relation to the cecum. The most common positions are descending intraperitoneal (31–74%) and retrocecal (26–65%) locations (1,2).

The spread of inflammation and hence the clinical presentation from acute appendicitis depends on the location of the appendix. If the appendix is located subhepatically, it may give rise to an abscess in the subhepatic space and spread to the tail of the liver [3], or it may spread along the right paracolic gutter, and extend to the right subphrenic spaces [4].

Most of the patients with ascending subhepatic appendicitis may have an atypical clinical presentation [5].

We present 15 cases of subhepatic appendicitis with atypical clinical presentation, and highlight the utility of multi-detector computed tomography (MDCT) and its software post processing applications in diagnosing the condition.

2. Materials and methods

This study included fifteen patients presented to the radiology department in Alexandria University, during the period from January 2011 till December 2011 with clinical presentation of acute right upper abdominal pain and were diagnosed radiologically by multidetector computed tomography as subhepatic appendicitis and the diagnosis was confirmed by surgery.

Clinical features, laboratory investigations and surgical findings were included in the study.

Ultrasonography followed by multidetector computed tomographic examination were performed to all patients. Computed tomographic examination was performed from the level of the dome of the diaphragm through the pubic symphysis using a 16-slice-CT scanner (Toshiba – Activion scanner). The protocol was as follows: 140 kVp; 350 mA; sections, 16; section thickness, 0.625 mm; pitch, 1.75; table speed, 35 mm/s (17.5 mm per rotation with two rotations); and gantry speed, 0.5 s per rotation.

In 10 patients, Iopamidol (Isovue; Bracco Diagnostics, Princeton, NJ) was injected (Empower CT; E-Z-Em) at a dose of 150 mL (300 mg of iodine per milliliter) and a rate of 3 mL/s. Scanning was performed during the portal venous phase as determined with bolus tracking and automated triggering technology. Five patients have undergone emergency plain CT examination without intravenous contrast injection.

The transverse section data were reconstructed with 0.625-mm-thick sections at 0.625-mm intervals. The data were sent to the workstation and coronal, sagittal and curved multiplanar reformatted images were then obtained.

3. Results

Among the fifteen patients included in this study there were eight females and seven males. Their ages ranged from 14 to 44 years old (average 27 years). All the patients presented with

upper right acute abdominal pain. The clinical diagnosis at presentation was acute cholecystitis in four patients, pyelonephritis in three, and ureteric colic in three. Five patients were referred with uncertain diagnosis. Elevated leukocytic count was detected in twelve patients.

Ultrasonography was performed to all patients and showed unremarkable findings in seven patients, mild subhepatic fluid collection in four patients and considerable amount of paracolic and subhepatic collections in four patients. The presence of subhepatic appendicitis was confirmed sonographically only in two patients.

Multidetector computed tomography was then performed and adequately diagnosed subhepatic appendicitis in all patients. The subhepatic location of the appendix was confirmed by reviewal of the axial images as well as the coronal, sagittal and curved multiplanar reformatted images.

Ten of the patients had CT signs of non complicated appendicitis including dilated thick walled appendix and thickening and stranding of the adjacent fascial planes with mild free fluid formation in the subhepatic space and right paracolic gutter. Five patients had additional CT signs of complicated appendicitis including considerable fluid collections in the right paracolic gutter and subhepatic spaces in four patients out of which two patients had a considerable amount of free intraperitoneal fluid. One patient had marked stranding in the adjacent right paracolic gutter with the appendix seen amalgamated with the adjacent small bowel loops raising the possibility of phlegmon formation. A calcified appendicolith was detected in four patients.

Surgical exploration was done to all the patients following the computed tomographic examination. The appendix was detected in a subhepatic location in all patients. Ten patients had non complicated appendicitis, four patients had perforated appendix and one patient had an appendicular phlegmon with partial perforation of the appendix. Appendectomy was performed to all patients. The surgical findings were matching with the CT findings in all the patients.

Figs. 1–5 show demonstration of the CT findings in five patients included in this study.

4. Discussion

Typical form of ordinary acute appendicitis may be diagnosed easily and treated in children and adults if there is a classical history with typical clinical signs [5]. On the other hand, atypical location of the appendix would present with clinical and radiodiagnostic dilemma. When the appendix is in the ascending subhepatic position, the signs and symptoms of acute appendicitis may be atypical and may be misdiagnosed with other pathology in the right flank and hypochondrium, such as acute cholecystitis, diverticulitis, acute gastroenteritis, ureter colic, acute pyelonephritis, colon cancer and irritable bowel syndrome [6]. This is matching with our study as the clinical diagnosis at presentation was acute cholecystitis in four

Download English Version:

<https://daneshyari.com/en/article/4224628>

Download Persian Version:

<https://daneshyari.com/article/4224628>

[Daneshyari.com](https://daneshyari.com)