Gastroenteritis Versus Appendicitis: A Case Study on Light of Clinical Assessment, Diagnostic CT Scan and Evidence Based Practice

Islam Elrobaa, Elfadel Hamad, Muayad Ahmad, Mohmed Subidar, Saju Thomas

Adult Emergency Department, Alwakra Hospital, Hamad Medical Corporation, Qatar

Corresponding Author: Settings Islam Hussam Elrobaa
dr_islamelrobaa@yahoo.com

ABSTRACT

Physicians who wait for clear, easily recognizable signs will miss many diagnoses. The Gastroenteritis is one of the most common medical emergencies in emergency department (ED). The Appendicitis continues to be the most common acute surgical emergency. The diagnosis of early appendicitis continues to be a challenge for the emergency physician. There is a differential diagnosis between gastroenteritis and appendicitis. The presentation of loose motion or diarrhea cannot be rule out appendicitis alone its need a global of clinical assessment, investigation and imaging (1). In this case we will discuss a case which presented as gastroenteritis, then diagnosed by CT scan as appendicitis but the surgeon and histopathological report diagnosed it back Gastroenteritis.

Keywords: Gastroenteritis, Fever, Hypotension, Appendicitis, CT scan, False positive

1. INTRODUCTION

Physicians who wait for clear, easily recognizable signs will miss many diagnoses. The Gastroenteritis is one of the most common medical emergencies in emergency department (ED). The Appendicitis continues to be the most common acute surgical emergency. The diagnosis of early appendicitis continues to be a challenge for the emergency physician. There is a differential diagnosis between gastroenteritis and appendicitis. The presentation of loose motion or diarrhea cannot be rule out appendicitis alone its need a global of clinical assessment, investigation and imaging (1). In this case we will discuss a case which presented as gastroenteritis, then diagnosed by CT scan as appendicitis but the surgeon and histopathological report diagnosed it back Gastroenteritis.
2. CASE DESCRIPTION

A 15 years old male patient presented as fever with history of loose motion 3 times, look like sick face. He denied any abdominal pain or vomiting, no sore throat, cough or dysuria. Vital sign was high fever: 39.5, heart rate was 125 and blood pressure 90/60 at 1:00 am. He has had one-liter normal saline, one-gram paracetamol and blood investigation. At 2:00 am vital sign were: Temp 38.4, BP 100/60, HR 108. At 4 am blood results were ready WBCs was: 15000 and CRP was: 11 and patient was still had fever temp 38.3 and blood pressure went to down 88/54, so he received one liter normal saline, 75 mg diclofenac sodium and 2 gram ceftriaxone. After one hour he was feeling better temp was 38, HR 108 and BP 100/60. Before discharge at around 6 am BP went to down 80/40, temp 38.8 and HR 116. After that he received one-liter normal saline for third time, urine analysis was negative and chest x ray was clear. On reassessment he denied any abdominal pain or tenderness and he was look like sick face. The emergency physician requested CT scan for him to rule out atypical presentation of appendicitis with blood culture and sepsis workers. The CT scan showed appendicitis and appendix diameter was 9 mm. Appendectomy has been done but the surgeon said it was normal appendix and mesenteric adenitis. Also, the histopathological report was normal appendix. Sepsis workers test was normal, and the patient has had vital stable and he left the hospital.

3. DISCUSSION

This is case report of false positive appendicitis by Ct scan which had false appendectomy. Regarding to evidence-based practice CT scan has sensitivity value of 98.5% and specificity value of 98% (2,3). In our hospital CT scan interpreted by specialist of radiology and verified by consultant of radiology so, the human error cannot be considered because there is two physicians have had interpreted the CT scan also, the appendix diameter was 9 mm.

There was review on American journal of Roentgenology, August 2005, volume 185, number 2, CT Evaluation of Appendicitis and Its Complications: Imaging Techniques and Key Diagnostic Findings: Nuno Pinto Leite, José M. Pereira1, Rui Cunha, Pedro Pinto and Claude Sirlin, it is mention: Mesenteric adenitis is the most common alternative condition identified at negative appendectomy. It is a benign inflammation of the ileocolic lymph nodes that is usually caused by Yersinia enteroocolitica, Y. pseudotuberculosis, or Campylobacter jejuni. CT findings include enlargement (> 5 mm) of mesenteric lymph nodes, thickening of the adjacent cecum and ileum, and a normal appendix (4). But in our CT report there was no comment about lymph node only the comment was about appendix diameter that was 9 mm stranding denoting extension of the inflammatory process.

On other hand, there is other study published on December 2006, Acute appendicitis: diagnostic value of non-enhanced (NE) CT with selective use of contrast in routine clinical settings: Stefania Tamburrini, Arturo Brunetti, Michèle Brown, Claude Sirlin, Giovanna Casola. This was a retrospective study conducted in an urban teaching hospital with institutional review board approval. From January 1998 to April 2002, 536 consecutive patients were referred for CT for suspected acute appendicitis with atypical clinical presentation and underwent an imaging protocol consisting of NE CT with selective use of contrast. Patients were not preselected: they did not undergo any imaging studies before CT (plain films, ultrasound). Their conclusion was: We have found that when conclusive, NECT is diagnostic with high accuracy in the majority of patients with suspected appendicitis in routine clinical settings. Additional scanning with contrast enhancement should be used is selected cases when NECT is inconclusive. Also, they mentioned there were 21 of 536 false positive cases in prospective readings; three patients had negative appendectomy: two of them had cecal diverticulitis, and the other patient had on CT an appendix 9 mm in diameter with no secondary inflammatory signs, but the pathology was negative. The other 18 patients 5 of them discharged to home by instruction and the remained 13 were admitted for observation then discharged to home.

Other articles on Medscape web site under name Appendicitis imaging by Lutfi Incesu, MD. Its mention: Note that one study of asymptomatic volunteers undergoing pelvic CT scanning found that 42% of these individuals had an "abnormal" appendicular diameter of greater than 6 mm and that 78% of appendices did not fill after oral contrast. Thus, findings on CT scanning must be correlated with the clinical scenario. Also, regarding to false positive or negative finding its mention: Some CT scan findings that are suggestive of or often accompany acute appendicitis are nonspecific and can be observed with other right lower quadrant conditions, such as Crohn disease, ulcerative colitis, pancreatitis, perforation of a...
duodenal ulcer, and cholecystitis. Misinterpretation of these signs as indicative of appendicitis can lead to a false-positive result. Conversely, specific signs can be misapplied. Without optimal cecal opacification, a distended, inflamed appendix can be mistaken for a small-bowel loop. Rarely, an appendiceal lumen filled with appendicoliths can mimic an opacified lumen on CT scans. Distal appendicitis can potentially be the cause of a false-negative interpretation (6,7,8,9).

Back to our case which mentioned above. This case had diagnosis of gastroenteritis from the beginning but the resistance of high fever, leukocytosis and hypotension even after 2 liters of fluid and the patient had no loss motion in our hospital all of this gave the ED physician impression about sepsis and atypical presentation of appendicitis so CT scan supported the diagnosis of appendicitis and so appendectomy was performed. The surgeon at theater suggested gastroenteritis with mesenteric adenitis and he mentioned normal appendix also histopathological report supported the surgeon suggestion. Anyhow patient became OK after the operation and we have two points about this case. The first one appendicitis could be diagnosed as gastroenteritis and gastroenteritis could be diagnosed as appendicitis or atypical appendicitis, CT scan may cannot determine the gastroenteritis or appendicitis even if appendix diameter more than 6 mm may be the size has increase by inflammatory process (10,11,12). The second point which better for sever ill patient under diagnoses or over diagnosis, we prefer the proper diagnosis but in critically ill patient you should be safe your patient.

4. CONCLUSION

- Physicians who wait for clear, easily recognizable signs will miss many diagnoses
- This case report of false positive appendicitis by Ct scan which had false appendectomy
- Mesenteric adenitis is the most common alternative condition identified at negative appendectomy.
- appendicitis could be diagnosed as gastroenteritis also gastroenteritis could be diagnosed as appendicitis or atypical appendicitis.
- CT scan may cannot determine the gastroenteritis or appendicitis even if appendix diameter more than 6 mm may be the size has increase by inflammatory process.
- Which better for critically ill patient under diagnoses or over diagnosis?

REFERENCES