Medical Science

*25(118), December, 2021*

# Acute abdomen: atypical presentation and outcome: A case report

**Ahmed M Ramzy**[1,2], **Abdulmohsen A Altwaijri**[3]✉, **Omar T Ahmed**[3], **Abdelrahman G Hassan**[3]

**To Cite:**

Ramzy AM, Altwaijri AA, Ahmed OT, Hassan AG. Acute abdomen: atypical presentation and outcome: A case report. Medical Science, 2021, 25(118), 3202-3205

**Author Affiliation:**

[1]Associate Professor of Cardiology, Department of Cardiology, Benha University, Egypt

[2]Consultant of Interventional Cardiology, Department of Cardiology, Qassim National Hospital, Qassim, Saudi Arabia

[3]Medical Intern, College of Medicine, Sulaiman Alrajhi University, Qassim, Saudi Arabia

**Contact Information**

Ahmad Ramzy dr.ahmed.ramzy@qnhospital.com
Abdulmohsen A Altwaijri a_altuwijri@hotmail.com
Omar Tarek Ahmed o.t.ahmed@hotmail.com
Abdelrahman Gamal Hassan a.g.haassan.zero@gmail.com

✉**Corresponding author**

Medical Intern, College of Medicine, Sulaiman Alrajhi University, Qassim, Saudi Arabia
Email: a_altuwijri@hotmail.com

**Peer-Review History**

Received: 29 October 2021
Reviewed & Revised: 30/October/2021 to 25/November/2021
Accepted: 27 November 2021
Published: December 2021

**Peer-review Method**

External peer-review was done through double-blind method.

## ABSTRACT

An unusual presentation is usually problematic in terms of diagnosis and management, in this case report we will show one of these presentations and how to identify the correct diagnosis to help avoid the complications of any delay. The patient presented with left upper abdominal pain, the abdomen was soft and lax but there was tenderness at the left upper quadrant, other systems exams were unremarkable. Mesenteric ischemia was the main suspected diagnosis, but a late ECG test was done and revealed anterolateral myocardial infarction. Patient immediately transferred to the catheter lab and PCI was done. The patient then had syncopal attack and diagnosed as TIA and accordingly an ECHO was ordered and showed mural thrombus. This case shows the necessity of an ECG test in patients presenting with abdominal pain without any delays.

**Keywords:** acute abdomen, mesenteric ischemia

## 1. INTRODUCTION

Acute abdomen is a fairly common presentation in the emergency department; it encompasses a wide range of differential diagnoses. In spite of the huge battery of laboratory investigations and imaging modalities available, it can prove to be a significant diagnostic challenge. Many diseases whether surgical or non-surgical, intra-abdominal or not, can cause signs and symptoms of acute abdomen (McNamara & Dean, 2011).

## 2. CASE PRESENTATION

A 43-year-old male patient came to the ER complaining of severe abdominal pain that started 3 days prior to presentation but became most severe in the last 24 hours. The pain was sudden at the left hypochondrial and epigastric areas, colicky in nature, did not radiate and was associated with repeated nausea and vomiting, the patient did not notice any exacerbating or relieving factors, and described the severity as being 7 out of 10. There was no change in bowel habits. The patient had normal air entry to both lungs, normal lung expansion, with no dyspnea, orthopnea, paroxysmal nocturnal dyspnea or wheezing; there was no urinary symptoms, and there was no overt GI bleeding.

The patient was not known to be hypertensive or diabetic; he was not on any medication and had no surgical history. He denied any previous consumption of alcohol or tobacco products. He's a known case of Crohn's disease with a past history of suspected transient ischemic attack (TIA) 7 months ago. On general examination, the patient was fully conscious, alert and oriented. His BP was 135/90 mmHg and his pulse rate was 94 bpm, and his respiratory rate was 23 with 97% O2 saturation, and his temperature was 36.9 ℃ and the patient was not jaundiced. On abdominal examination, he had a soft and lax abdomen, with marked epigastric and left hypochondrial tenderness and moving normally with respiration, there was no guarding, rigidity, mass, scars, distention, visible peristalsis or organomegaly, and McBurney's, Rovsing's, Murphy's, Cullen's and Grey Turner's signs were all negative. Chest examination showed equal bilateral air entry and no adventitious breath sounds, there were no wheezing, crackles or rhonchi. Cardiac examination revealed normal S1 and S2 with no added sounds or murmurs. Pulse rate was within normal range, rhythm, character, and volume. There was no JVP elevation, pericardial friction rub or peripheral edema. The patient was admitted to the GI ward as a case of acute abdomen for further investigation.

**Differential diagnosis**

The differential diagnosis of acute abdomen is very broad; acute mesenteric ischemia is one of the differentials and it was the provisional diagnosis in this case due to the characteristic presentation with sudden onset of severe pain and supported by a previous history of transient ischemic attack (TIA) 6 months ago. Nevertheless, the absence of fever and signs of peritonitis opposed this differential, especially since 3 days had passed since the onset of the pain. The differential diagnosis also includes perforated peptic ulcer, but it was less likely due to the negative history of peptic ulcer disease and the absence of rigidity and guarding.

Acute cholecystitis was shifted down the list of differentials because of the negative history of biliary colic and negative Murphy's sign; also, the location of the pain was in the left instead of the right (Townsend et al., 2021). Initially acute pancreatitis was on the top of the differentials list, but it was deemed less likely because of the absence of risk factors, back radiation, Cullen's and Grey Turner's signs. Abdominal aortic aneurysm (AAA) was considered as well, but was not considered likely as no abdominal mass was noticed on examination and the patient was not a known case of AAA (Townsend et al., 2021). Finally, exacerbation of Crohn's disease was among the differentials as well, as the patient was diagnosed with the disease previously; although the presenting picture was not typical of Crohn's.

**Investigations**

A CBC was ordered and revealed the following: normal RBC, WBC, and platelet counts, hemoglobin and hematocrit were within normal ranges, and there was no elevation in reticulocytes count. Serum electrolyte levels revealed no abnormality whatsoever. Coagulation studies (PT, aPTT, and INR) were all within normal limits. Liver functions tests and bilirubin studies were requested and came back with normal results. Albumin level was normal as well. Amylase and lipase levels were not elevated, excluding the possibility of acute pancreatitis. CRP and ESR were slightly elevated. Abdominal x-ray was done and showed no air under the diaphragm, eliminating the possibility of perforated peptic ulcer or intestinal perforation. Abdominal US did not demonstrate gallbladder stones or sonographic signs of acute cholecystitis. No AAA was found on the abdominal US. Because of the high suspicion of acute mesenteric ischemia, CT angiography with and without oral and IV contrast for the abdomen and pelvis was ordered and revealed signs of Crohn's disease with no other significant findings. The patient was then admitted to the GI ward to be managed conservatively.

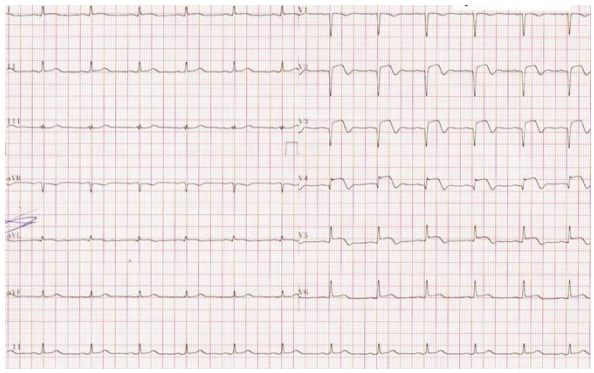

**Figure 1** ECG showing ST-Elevation in leads V1-V5

After the patient was shifted to the GI ward, a routine ECG was done and showed acute anterior MI with ST-elevation and pathological Q waves in V1-V5 with active epigastric pain grade 7/10 on pain scale, with no shortness of breath or signs of heart failure (figure 1).

A cardiac profile was subsequently done and showed elevated CK-MB and troponins. The patient was immediately transferred to the Catheter Lab for urgent cardiac catheterization; coronary angiography was done and revealed free left main and left circumflex arteries, mild atherosclerotic changes in the right coronary artery, and total thrombotic occlusion of the left anterior descending artery at the mid-segment (antegrade TIMI 0 flow).

**Treatment**

100 IU/Kg of unfractionated heparin was given. A guiding catheter was used to canulate the left main coronary artery. A percutaneous transluminal coronary angioplasty (PTCA) guidewire was advanced across the total thrombotic occlusion of the left anterior descending artery and into its distal segment. The thrombus was then aspirated using an aspiration catheter. Once coronary flow was restored, a drug eluting stent (DES) was placed. A control coronary angiogram was then done which showed a well deployed stent with antegrade TIMI 3 flow.

The patient was then prescribed triple anticoagulation therapy including aspirin, clopidogrel and rivaroxaban for three months followed by antiplatelet therapy with aspirin and clopidogrel for one year.

**Outcome and follow-up**

The patient was stable after the PCI, until the second day when he suddenly underwent a syncopal attack, which was diagnosed later as TIA. Thankfully, the patient regained consciousness quickly with no residual neurological damage or disability. A neurology consultation was done, and brain MRI was ordered to look for any lesions but revealed no abnormalities; an echocardiography was also ordered to look for a source of systemic embolization.

The echocardiography revealed akinesia with thinning affecting the apex, apical septum and apical anterior segments, as well as hypokinesia affecting the mid-anterior segment and mid-anterior septum with impaired left ventricular systolic function (LVEF = 35% - 40%). A hyperechoic shadow of a large apical thrombus was detected measuring 1.6 X 1.8 cm in diameter attached to the apical anterior aspect of the left ventricle with high possibility of systemic embolization (figure 2).

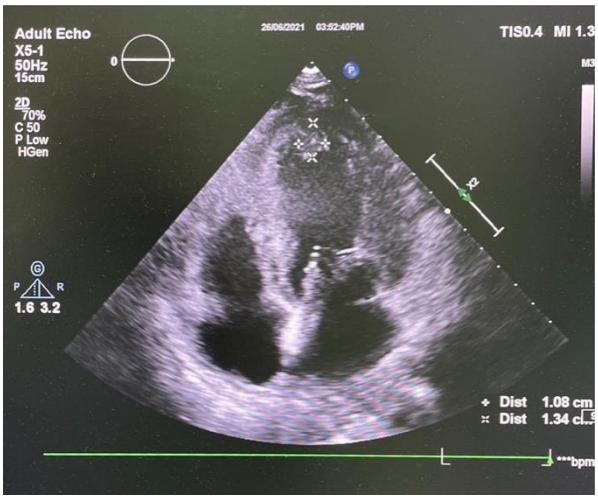


**Figure 2** Echocardiography showing LV apical thrombus

This explained the syncopal attack the patient had and confirmed its cause as TIA. The patient, fortunately, had many favorable prognostic factors. The prognostic factors for post-MI morbidity and mortality include: ejection fraction, arrythmias (AF, VF), chest pain, mitral regurgitation, early reperfusion, and biomarkers levels (troponin, BNP).

## 3. DISCUSSION

Age and gender play an important role in considering some of the differentials, appendicitis for example is more common in younger patients, while biliary diseases, small and large intestinal obstruction, mesenteric ischemia and diverticulitis are more common in older patients (McNamara & Dean, 2011). The non-surgical causes of acute abdomen can be endocrinological, metabolic,

hematological, or due to toxins or drugs (McNamara & Dean, 2011). Acute abdomen patients should be assessed immediately to distinguish between those who have true acute abdomen requiring emergency surgical intervention from those who can be managed conservatively (Ragsdale & Southerland, 2011). Work-up of the potential diagnosis proceeds with the usual order, history, physical exam, laboratory and imaging. Although frequently necessary, laboratory and imaging investigations are guided by the history and physical examination findings.

In this case, the atypical and complicated presentation may have been a result of an intramural thrombus that may have caused systemic embolization of thrombotic material that resulted in ischemic events elsewhere in the body and contributed to the misleading clinical picture. An example of this is the highly suspected mesenteric ischemia as well as the transient ischemic attack that happened after the patient was treated.

There are many complications of acute myocardial infarction that could occur in these patients, they include mechanical, conduction and pericardial complications. Mechanical complications include rupture of left ventricular free wall, rupture of interventricular septum and papillary muscle rupture. Conduction complications include sinus bradycardia, heart blocks, atrial fibrillation, ventricular fibrillation and ventricular tachycardia. Pericardial complications include peri-infarction pericarditis, post-MI pericardial effusion and post cardiac injury syndrome (Elbadawi et al., 2019; Goldsweig et al., 2018).

## 4. CONCLUSION

It is well-known that acute myocardial infarction can present in many atypical ways. Thus, it is important to always have a low diagnostic threshold for the diagnosis of myocardial infarction in the emergency setting. Therefore, ECG should be done as early as possible in the emergency room. Fortunately, ECG was done before any major complications developed in our patient and was treated appropriately.

**Acknowledgement**

We thank our dear consultant Dr. Ahmad Ramzy for his guidance and advice throughout this study.

**Author Contributions**

Abdulmohsen Altwaijri and Omar Ahmed contributed in data collection and manuscript writing. Ahmed Ramzy contributed in Data collection and manuscript reviewing. Abdulrahman Hassan contributed in manuscript writing.

**Informed consent:** Written and Oral informed consent was obtained from the patient.

**Funding**

This study has not received any external funding.

**Conflict of Interest**

The authors declare that there are no conflicts of interests.

**Data and materials availability**

All data associated with this study are presented in the paper.

## REFERENCES AND NOTES

1. Elbadawi A, Elgendy IY, Mahmoud K, Barakat AF, Mentias A, Mohamed AH, Ogunbayo GO, Megaly M, Saad M, Omer MA, Paniagua D, Abbott JD, Jneid H. Temporal trends and outcomes of mechanical complications in patients with acute myocardial infarction. JACC Cardiovasc Inte 2019; 12(18):1825-1836.
2. Goldsweig AM, Wang Y, Forrest JK, Cleman MW, Minges KE, Mangi AA, Aronow HD, Krumholz HM, Curtis JP. Ventricular septal rupture complicating acute myocardial infarction: Incidence, treatment, and outcomes among medicare beneficiaries 1999-2014. Catheter Cardio Inte 2018; 92(6):1104-1115.
3. McNamara R, Dean AJ. Approach to acute abdominal pain. Emerg Med Clin N AM 2011; *29*(2), 159–vii.
4. Ragsdale L, Southerland L. Acute abdominal pain in the older adult. Emerg Med Clin N AM, 2011; *29*(2), 429–x.
5. Townsend JC, Evers BM, Beauchamp RD, and Mattox KL. Sabiston textbook of surgery. 21st ed. Philadelphia, Pa.: Elsevier.