



## CASE REPORT

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# A case of myocardial infarction together with acute appendicitis in Emergency Clinic of Turgut Ozal Medical Center

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### Abstract

In this study, a case of myocardial infarction (MI) developed in a 55-year old patient who applied to emergency clinic with acute appendicitis was presented. The patient who already had diabetes and hypertension applied to emergency clinic of our hospital due to abdominal pain, and he was diagnosed as having acute appendicitis associated with MI in routine evaluation and analyses. Treatment preference was used for MI for the patient, and the coronary occlusion was opened with using percutaneous transluminal coronary angiography. In the follow up of the patient, the clinical symptoms of the acute appendicitis disappeared, and the patient was discharged with cure without requiring any surgical intervention for the appendicitis. High mortality clinical situations, such as MI, which is stimulated due to various stress factors should be considered in the patients who applied to emergency clinic.

**Keywords:** Acute appendicitis, myocardial infarction, emergency clinic

### Introduction

Acute appendicitis is an important emergent clinical condition that results from the obstruction of appendix vermiformis due to various reasons. Nausea and vomiting together with right lower quadrant abdominal pain occur in the majority of patients. Acute appendicitis is one of the most common causes of acute abdomen requiring urgent surgical intervention and is more common in men than in women [1]. Presence of findings such as defense and rebound, elevated white blood cell count and detection of inflammation in the appendix vermiformis by abdominal ultrasound or computed tomography are important in the diagnosis of the disease [2].

Acute myocardial infarction (AMI) is one of life-threatening health problems. The World Health Organization has reported that AMI ranks first among the causes of human death and that its mortality rate is 119/100,000. Clinical manifestations develop when lesions or plaques, which occur in the coronary arteries that supply blood to the heart muscle, start to block the blood flow. Chest pain is the most important finding in patients. In previous studies, it was found that 5% of patients who were admitted to the emergency department had chest pain and that approximately 20% of these patients had acute coronary syndrome [3].

It has been reported that approximately 40% of patients who developed cardiac arrest outside the hospital lost their lives despite appropriate treatment [4].

AMI can be confused with other diseases because it sometimes causes ambiguous clinical symptoms. AMI sometimes occurs during the course of other illnesses and can lead to death. Our patient who was admitted to the emergency department due to acute appendicitis had chest pain. It was understood that our patient had an acute MI on physical examination and other diagnostic tests. In this case report, we presented a case of combined acute appendicitis and acute MI. According to the literature data, our patient is the first reported case.

### Case Report

A 55-year-old male patient was admitted to our emergency department with complaints of abdominal pain and nausea for about six hours. The patient had an 8-year history of type 2 diabetes and was also on medication due to hypertension. Abdominal pain was widespread and then was localized to the right lower quadrant in the last hours. It was learned that the patient's chest pain began while hospitalized.

On physical examination, the patient had defense and rebound in the right lower quadrant. Electrocardiography revealed an ST elevation of 1 mm in the anteroseptal region (V1-V4). Blood pressure was 124/87 mmhg, pulse was 88/min, body temperature was 36.7 0C, and SaO2 was 99%. Acute myocardial infarction was

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diagnosed using new or presumed new significant ST-segment-T wave changes or new left bundle branch block. At the same time, troponin I level was 0.01 µg/mL initially, and after 4 hours, the troponin level rose to 0.1 µg/mL. White blood cell count was 15500/ml, ALP level was 152 U/L, GGT level was 40 U/L, CRP level was 13.1 mg/dL, and on abdominal ultrasound (US), it was observed that there was a 10 mm-intestinal segment consistent with acute appendicitis in the medial portion of the cecum in the right lower quadrant (Fig 1). Based on these findings, the patient was found to have an acute MI with acute appendicitis. After cardiology and general surgery consultations, the patient underwent emergency percutaneous transluminal coronary angioplasty (PTCA) as primary therapy due to AMI. Coronary artery occlusion of the patient, who had lesion in the left anterior descending artery, was removed by stenting. Thus, blood flow was restored. The patient was hospitalized to the coronary intensive care unit and was followed in coordination with the department of general surgery. In the following days, white blood cell count returned to normal, and clinical manifestations of acute appendicitis disappeared clinically. For this reason, the patient did not undergo surgical intervention. After six days of follow-up, inflammation of the appendix disappeared on abdominal USG. Then, the patient was discharged from the hospital by healing.

## Discussion

Acute coronary infarction is a paradoxical perfusion problem that results from the occlusion of coronary arteries. As a result, loss of function occurs in the myocardium, which cannot be fed enough, and there is a change in the heart's electrical activity. This leads to lethal complications such as sudden cardiac arrest or ventricular fibrillation, leading to patient death. Studies have reported that plaque-like lesions, which are rich in lipids, calcified and contain a large number of macrophages, are the most common causes of coronary artery occlusion [5].

Coronary artery disease usually shows a slow progression. It is reported that sedentary lifestyle, smoking, alcohol and drug use, lipid-rich diet and genetic predisposition are important factors in the development of the disease [6]. It is known that coronary artery disease is more common in people with diabetes, hyperlipidemia, hypertension, and some connective tissue diseases. Lesions, which develop in the vascular structure over time, completely block the narrowed vessel lumen due to reasons such as heavy exercise or emotional stress and lead to AMI clinically in patients [7]. The initiation of thrombolytic therapy in a rapid manner and the restoration of blood flow by interventional procedures such as PTCA are very important in the treatment of these patients.

Effective treatment in acute myocardial infarction is life-saving if it is started without any delay. Studies have reported that the initiation of effective treatment within the first half-hour is very important in reducing mortality and that every half-hour delay for treatment is associated with a 7.5% increase in mortality [8]. At this point, it is critically important that AMI patients receive medical treatment quickly. Sometimes, the patient may be delayed admitting to the doctor due to ambiguous symptoms. Diagnosis and treatment can be delayed because the doctor does not suspect acute MI. For this reason, it is recommended to perform routine evaluation for AMI in patients referring to the emergency department with a complaint such as abdominal pain [9].

In this case report, we presented a case of combined acute appendicitis and acute MI. According to the literature data, there was no previous study reporting the association of acute appendicitis and AMI. For this reason, it has been thought that the coexistence of these two diseases is not a common condition. It has been seen that coronary lesions occurred because our patient had diabetes and hypertension for many years and that the increase in stress factors due to the development of acute appendicitis may have triggered AMI. In clinical evaluation, AMI was determined as a clinical picture that should be urgently intervened for the patient's vital condition, and coronary occlusion was successfully resolved with emergency PTCA. In the follow-up, appendicitis gradually disappeared, and our patient was fully recovered.

As a problematic situation that can be encountered in our patient, it may be thought that AMI is missed in the presence of symptoms of acute appendicitis. The chest pain described by the patient was the most important reason to focus on this issue. However, it is reported that especially diabetic patients may not complain of chest pain during acute MI [10]. Therefore, as we have done in our clinic, routine ECG monitoring for patients would provide significant benefits to diagnose a possible AMI. However, it should not be forgotten that AMI can be seen without any chest pain or ECG findings, even in a small proportion of patients [11]. This study has emphasized that AMI can be detected in patients referring to the emergency department due to different complaints or that AMI can develop due to stress related conditions. Therefore, acute coronary disease, which is the most frequent cause of death worldwide, should always be kept in mind in the emergency department. It would be useful to make evaluation in terms of AMI when dealing with the primary disease of the patient.

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