

CASE REPORT

The Effect of Antihistamine Drugs on Scombroid Poisoning in Context of Cardiac Heart Rate

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Abstract

Introduction: Scombroid poisoning is a condition that occurs after ingestion of seafood and can cause cardiac and respiratory effects, shock, and life-threatening conditions, as well as gastrointestinal findings caused by increased histamine levels.

Case Report: The detailed history of the 80-year-old male patient who presented to the emergency department with chest pain, nausea and vomiting revealed that he had consumed an excessive amount of anchovies 10 hours prior to admission. On follow-up, the patient's blood pressure was 142/66 mmHg and heart rate was 48/min. Bradycardia, PR interval prolongation and ST depressions were observed on the initial ECG. No troponin elevation was observed during the patient's follow-up in the emergency department, and the patient was treated with antihistamines, steroids, and fluid resuscitation, and his condition was assessed as scombroid toxicity. The follow-up ECG of the patient whose symptoms resolved after treatment showed that the bradycardia had resolved, the heart rhythm was 65 bpm, the PR interval prolongation had returned to normal, and the signs of first-degree AV block had resolved.

Conclusion: While tachycardia and bronchospasm have been observed in scombroid poisoning in the literature, in our case bradycardia was observed to develop as a result of vagal stimulation due to increased histamine. Increased histamine levels can cause life-threatening situations by producing bradycardia, which can develop into asystole with vagal nerve impulses. The use of antihistamines in the treatment of bradycardia, which is one of the effects of histamine, shows a good prognosis, as in our case.

Keywords: Emergency Medicine, Scombroid Poisoning, Bradycardia

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INTRODUCTION

The scombroid syndrome is a very common poisoning caused by the consumption of seafood. This poisoning, caused by an increase in histamine, was described in the late 18th century in Great Britain. It often presents with flushing, urticaria, diarrhoea, and headache. Cardiac and respiratory complications are rare in patients with predisposing factors such as asthma and heart disease. In some cases, life-threatening bronchospasm, oedema, or shock may occur. Early diagnosis and treatment are important to prevent the potentially fatal consequences of scombroid poisoning [1].

In this case report, we will present the cardiac effects and treatment of scombroid poisoning after anchovy consumption.

CASE REPORT

An 80-year-old male patient presented to the emergency department with chest pain of 10 hours' duration. This postprandial chest pain was accompanied by sweating, nausea, vomiting, dyspepsia, and diarrhoea. The patient, who had reportedly eaten a large amount of anchovy (*Engraulis encrasicolus*), had a history of coronary artery disease and had undergone cholecystectomy.

Vital signs were normal (Systolic blood pressure 142 mmHg, diastolic blood pressure 66 mm Hg, heart rate 48 beats/min, body temperature 36.4°C, respiratory rate is normal (12/min)). On physical examination, she was found to be conscious and cooperative with a Glasgow Coma Score (GCS) of 15. However, mild dehydration was noted; breath sounds were natural; heart sounds were slowed; S1 and S2 were found to be natural. Auscultation of the abdomen revealed increased abdominal sounds and slight tenderness on palpation. No pathological findings were observed in the other systemic examinations. The patient's biochemical findings and troponin value are given in Table 1.

Electrocardiography (ECG) was taken of the patient whose chest pain continued at the time of admission. Heart rate was 45, PR interval was 200 ms, and QT length was 500 ms on ECG. There was a negative in leads D1, AV1, V5, and V6. Also, ST segment depressions were observed from V1 to V6 in chest leads. The patient's current ECG was observed to be compatible with 1st Degree AV Block. The patient with known coronary artery disease had pathological Q waves (Figure 1).

During follow-up, the patient whose troponin level was higher than the reference value and who had chest pain was referred to the cardiology department. The echocardiography

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(ECO) examination performed by the cardiology consultant revealed moderate mitral regurgitation, left ventricular segmental wall motion abnormality, and an ejection fraction of 35%. It was stated that the resulting situation could be due to food poisoning. In fact, no acute cardiac pathology was found.

The patient, who was hydrated in the emergency department, was followed until symptoms resolved. It was observed that the cardiac complaints resolved after the administration of antihistamine (pheniramine maleate, 45,5 mg intravascular) and systemic steroid (dexamethasone, 8 mg intravascular). The PR interval was observed to be 160 ms in the control ECG. The heart rate was observed to be 65. The first-degree AV block sign disappeared (Figure 2). The patient was given recommendations to alleviate the effects of food poisoning and supportive treatment was prescribed.

DISCUSSION

Scombroid is a condition caused by increased histamine in fresh, frozen, or smoked seafood. It is the most common cause

of mortality following fish consumption [2,3]. Although scombroid poisoning generally presents with allergic reactions, dizziness, nausea, and vomiting, increased gastrointestinal findings may also be seen. These symptoms may begin 10-90 minutes after consumption and progress for 3 to 36 hours. In addition, signs of bronchospasm, respiratory distress, and shock progressing with vasodilation may be observed [4]. In our case, the patient described nausea and vomiting with gastrointestinal symptoms followed by chest pain after eating seafood. Her findings occurred 10 hours after eating. It was found that the other family member who accompanied him on his meal had only symptoms of nausea and vomiting. These findings showed that the product consumed had a toxic effect on the person.

There are case reports in the literature that continue with coronary artery vasospasm and in which tachycardia and wide ST segment depressions are seen in the 12-lead ECG analysis [5]. The chest pain observed in our case and the bradycardia and first-degree AV block detected on the 12-lead ECG were

Table 1. Biochemical findings

Variables	Unit	Case	References
Creatinin	mg/dL	1.5	0.84-1.25
Sodium	mmol/L	134	136-146
Potasium	mmol/L	4.65	3.5-5.1
CRP	mg/L	9.4	0-5
WBC	10 ³ /mm ³	8.8	4-10.5
Hemoglobin	g/dL	16.1	13.5-18
HS Troponin T (0. Hour)	ng/L	19	0-14
HS Troponin T (3. Hours)	ng/L	19	0-14

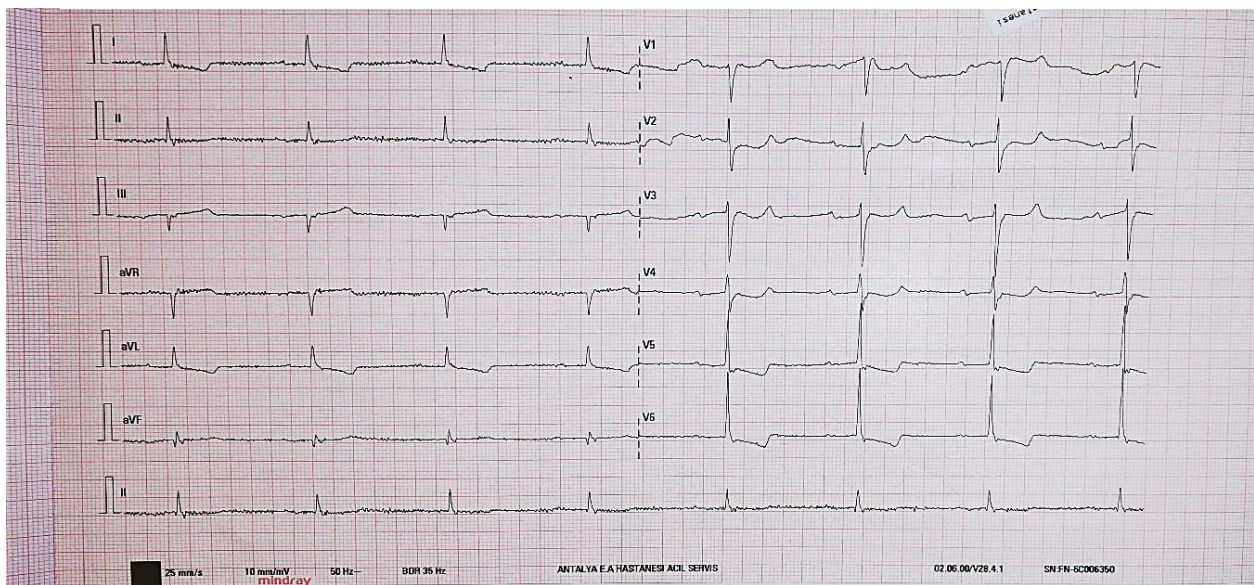


Figure 1. ECG taken during application

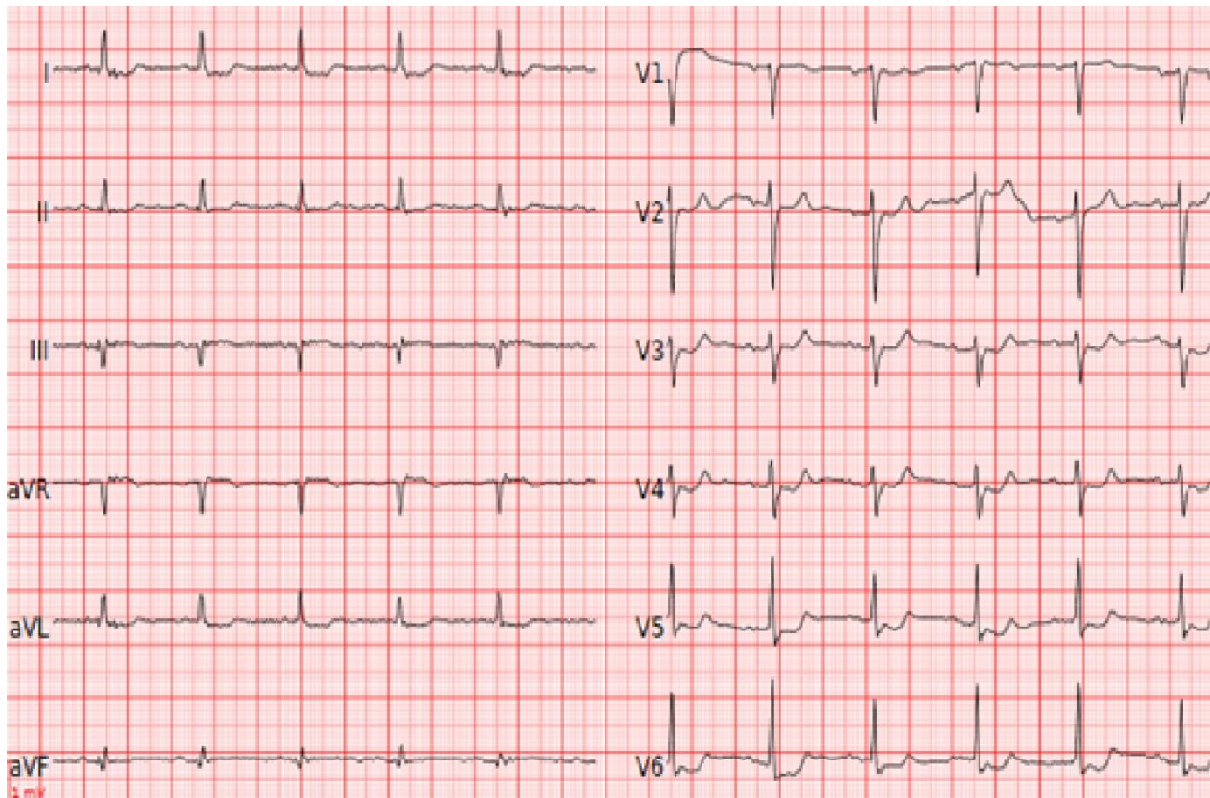


Figure 2. ECG taken after treatment

considered to be post-scombroid toxicity findings.

Complications are rare in poisoned patients and follow-up requirements are low. Conditions such as bronchospasm, shock, and arrhythmia are seen in severe patients, and it is recommended to keep the follow-up period of these patients longer. In addition, the use of antihistamine agents that block H1 and H2 receptors is a successful treatment method that improves a good prognosis in these patients [6,7,8].

There are studies showing that histamine causes acetylcholine release with an indirect effect on the vagus nerve [9, 10]. Studies have shown that increased vagal stimulation can cause life-threatening situations due to its effect on the electrical axis of the heart, causing bradycardia leading to asystole [11, 12]. The bradycardia and first-degree atrioventricular block observed in our case were interpreted as the effect of vagal stimulation on the heart caused by increased histamine. The regression of the bradycardia and the disappearance of the conduction block after antihistamine administration were considered as supporting findings. It shows that in addition to tachycardia, bradycardia, which can become asystole due to vagal stimulation, can also be seen in people exposed to high doses of histamine.

CONCLUSION

Allergic reactions can be tachycardic and hypotensive, and bradycardic to asystole due to the influence of the vagal nerve. It should always be remembered that the symptoms of

allergic reactions seen in the emergency department can be very extensive.

Conflict of Interest: None to be declared.

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