

## A Rare Cause of Asphyxia: Cafe Coronary Syndrome

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### Case Report

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### ABSTRACT

Café Coronary Syndrome is a term used to describe cases of sudden death during a meal in healthy individuals without any asphyxia, respiratory distress or neurologic symptoms. It is usually fatal without timely intervention. The causative factor in café coronary syndrome is almost always food. In most cases, predisposing factors such as fast eating, alcohol consumption, underlying neurologic diseases or senility are observed. In this case report, we aimed to present a case who was found dead alone in his home and autopsy revealed Café coronary syndrome with food in the respiratory tract and to make a forensic and clinical evaluation.

**Keywords:** Asphyxia, death, autopsy, forensic case

## Asfiksiniin Nadir Bir Nedeni: Cafe Coronary Sendromu

### Olgu Sunumu

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### Öz

Café Coronary Sendromu, sağlıklı bireylerde yemek sırasında herhangi bir asfiksi, solunum sıkıntısı veya nörolojik semptom olmaksızın ani gelişen ölüm olgularını tanımlamak için kullanılan bir terimdir. Zamanında müdahale edilmediğinde genellikle mortal seyrederek. Café Coronary Sendromunda etken neredeyse her zaman yiyeceklerdir. Çoğu olguda hızlı yemek yeme, alkol kullanımı, altta yatan nörolojik hastalıklar ya da senilite gibi predispoze edici faktörler olduğu görülmektedir. Bu olgu sunumunda evinde yalnız başına ölü bulunan ve otopsi sonucunda solunum yollarında yiyecek bulunarak Café Coronary Sendromu tespit edilen bir olguyu sunarak adli ve klinik değerlendirme yapmak amaçlanmıştır.

**Anahtar Kelimeler:** Asfiksi, ölüm, otopsi, adli olgu

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## Introduction

The term “café coronary syndrome” (CCS) was first used by Haugen in 1963 to describe the sudden collapse of healthy individuals during a meal without any signs of asphyxia, respiratory distress, or neurological symptoms<sup>1</sup>. The syndrome takes its name from the fact that the condition of individuals who suddenly become conscious while eating is often similar to a heart attack (coronary event). The incidence was reported as 0.66 per 10,000 and the mortality rate as 85%.<sup>2</sup> Deaths among individuals hospitalised due to chronic illnesses were associated with CCS in 1.3% of cases.<sup>3</sup> The etiology of CCS, which can be caused by multiple factors, is associated with advanced age, poor dental health, alcohol consumption, a history of sedative drug usage and mental retardation. Additionally, cases of coprophagic CCS and CCS associated with radiocontrast agent aspiration in individuals with Parkinson's disease are also reported in the literature.<sup>4,5</sup> It is crucial to raise awareness among healthcare professionals, provide screening for high-risk patient groups for CCS and ensure early diagnosis and intervention.

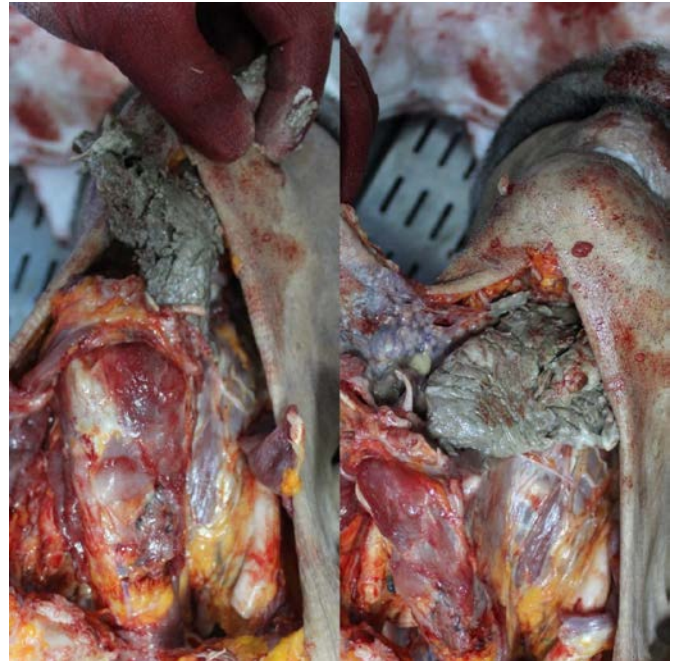
It is presumed that the main mechanism in the development of CCS is dysfunction in chewing and swallowing as a result of the deterioration of these functions.<sup>6</sup> These individuals are usually found dead near the dining table. The clinical presentation usually leads to the suspicion of coronary artery disease, but a large piece of food is more often found in the pharynx or larynx during the post-mortem examination. In these cases, death occurs due to hypoxic or anoxic hypoxia. It is probable that death may have occurred as a result of reflex parasympathetic stimulation<sup>7</sup> It has been accepted that food particles cause stretching of the laryngeal wall, resulting in sudden stimulation of the superior laryngeal nerve, leading to reflex cardiac arrest and death. For this reason, these deaths have also been termed “bolus death”.<sup>7,8</sup>

The most important reason for confusion between CCS cases and myocardial infarction is that there are no symptoms of suffocation during external examination, leading to it being clinically considered as myocardial infarction. This confusion may lead to mistreatment in cases requiring immediate intervention, potentially resulting in death and giving rise as a consequence to medico-legal issues.<sup>9</sup> This case report presents a 72-year-old individual found dead at home, with CCS determined as the cause of death following an autopsy. The aim is to raise awareness, particularly among healthcare providers, to seize the opportunity for early diagnosis and treatment in such cases.

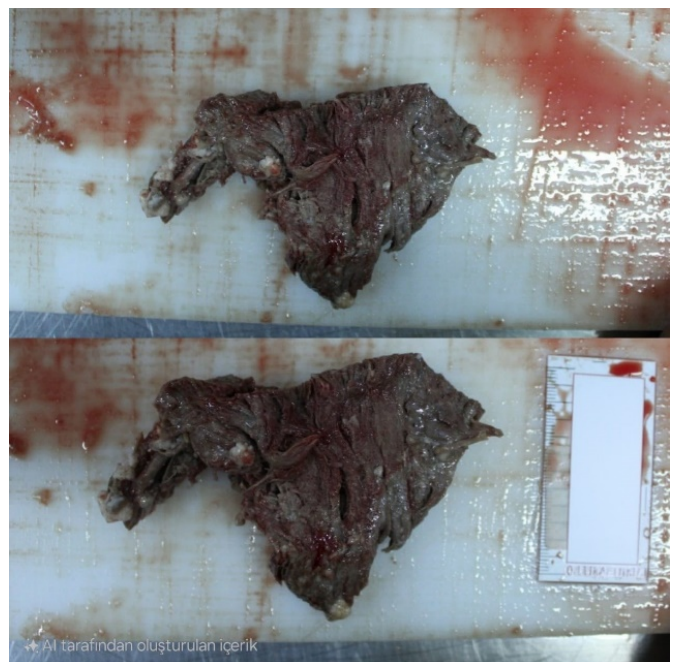
## Case

The process began when relatives were unable to contact a 72-year-old man who lived alone in his own home. The individual was found dead in his home. No clear information could be obtained from the patient's relatives during the medical history taken prior to the autopsy. The crime scene investigation report revealed that he was found lying on the floor in the kitchen area of his home. At post-mortem examination, the individual was found to be edentulous, and the oral cavity was empty. No other findings indicative of

pathological or forced death were observed during the physical examination. During dissection, examination of the neck structures revealed an undigested food item (piece of beef) measuring 9 x 7 cm, which completely obstructed the entrance to the oesophagus and trachea from the root of the tongue and caused ecchymosis in the surrounding tissue by stretching the lumens (Figure 1 and 2).



**Figure 1.** Food material causing total obstruction of the airways identified during neck dissection



**Figure 2.** Gross food fragment causing mechanical asphyxia

Following the autopsy, histopathological examination of samples taken from the case reported no cause related to the cause of death. In toxicological samples, 54 mg/dL of ethanol was detected in the peripheral blood sample, along with ethanol metabolites. It is considered that the cause of death was mechanical asphyxia due to a large piece of food which

completely blocked the airway, and cardiac arrest resulting from vagal stimulation caused by this piece of food excessively stretching the larynx and surrounding tissue.

### Discussion and Conclusion

CCS is a fatal condition that occurs especially in elderly individuals, those with poor oral and dental health, alcohol users or individuals with neurological disorders, resulting from the sudden obstruction of the airway by food particles. It is of medico-legal importance because it can easily be misdiagnosed as a cardiac event. In this case, based on the autopsy findings, the cause of death was determined to be CCS, and it is considered that airway obstruction caused sudden cardiac arrest through hypoxic mechanisms.

Similar studies in the literature generally report that large food particles are detected in the pharynx and larynx, and that the mechanism of death is due to anoxic hypoxia or reflex parasympathetic inhibition.<sup>9-12</sup> In this case, based on the autopsy findings and the results of histopathological and toxicological examinations, the mechanism of death is thought to be mechanical asphyxia caused by a piece of food completely blocking the airway, and cardiac arrest due to vagal stimulation caused by excessive stretching of the larynx and surrounding tissue by this piece of food. The studies have reported that the risk of incidence of CCS increases due to impaired mastication and swallowing functions, particularly in individuals who do not use dental prostheses or who have tooth loss.<sup>2,11-14</sup> In this case, it was determined that the individual had no teeth, and it was considered that this condition may have contributed to the development of CCS due to inadequate mastication. Additionally, predisposing factors such as senility and alcohol positivity were also observed.

The important thing to note about CCS is that these symptoms can be clinically misdiagnosed as coronary events such as myocardial infarction. In particular, standard resuscitation procedures provided to patients brought to emergency departments with loss of consciousness may lead to missed diagnosis of the actual cause of death. In this respect, it is crucial that emergency healthcare professionals are aware of CCS. Additionally, from a forensic medicine perspective, these cases must be evaluated through detailed autopsy. In this case, as there were no findings indicating signs of heart disease or any other natural cause of death during the initial assessment, an autopsy was performed and the diagnosis of CCS was then confirmed.

As a result, CCS is a condition that develops, particularly in elderly individuals and those with dental loss, due to impaired mastication and swallowing functions, and can lead to sudden death. These cases must be evaluated carefully both clinically and for legal purposes, as this is crucial for preventing misdiagnosis and medico-legal issues. In individuals at risk for CCS, being careful during meals, observing patients with swallowing difficulties closely and raising awareness of this syndrome among emergency response teams can help prevent fatal outcomes.

### Declarations

**Author contributions:** Bıyık E: Concept, design, resources, literature review, writing; Bıyıklıoğlu O: Provision, critical review, writing, design, resources; Beyaztaş FY: Design, writing, critical review, supervision.

**Consent to participate:** Written informed consent was obtained from the patient for the publication of this case report, including the use of clinical information and all accompanying images.

**Consent for publication:** Not applicable

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