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Case Report

Cafe Coronary Syndrome-fatal Choking on Food: A Case Report

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ABSTRACT

Cafe Coronary syndrome which was first reported as sudden collapse at restaurants while dining was found to be due to fatal occlusion of upper airway by large pieces of food. Many of those individuals had consumed large amounts of alcohol prior to the incident. Choking to death means asphyxiation by blockage of the internal air passages. If it occurs while eating, it is also called café coronary syndrome because it presents like an acute heart attack due to coronary obstruction. Sudden collapse during or shortly after a meal should always raise the possibility of café coronary and the autopsy examination should not only attempt to demonstrate airway occlusion by a bolus of food, but also to identify or exclude underlying neurological disease. A 27-year-old individual waiter had dinner in a restaurant after finishing his work. While eating a piece of meat, the man collapsed lifelessly. On internal examination, a piece of mutton bone was found in the larynx (3.5 x 1.4 cm) between the epiglottis and the vocal cords which was nearly complete obstruction of the larynx. The suppression of gag-reflex due to alcohol or drugs makes the individual susceptible to Cafe Coronary. This case highlights the need of being aware of the condition especially in the alcoholic/ intoxicated persons.

Keywords: Choking, Intoxication, Cafe coronary

INTRODUCTION

Cafe coronary syndrome introduced in 1963 by Haugen referring to obstruction of the upper airway by a bolus of food witnessed by others is not only limited to elderly but also to the very young and neurologically impaired persons in institutions [1,2,3]. Choking to death means asphyxiation by blockage of the internal air passages. If it occurs while eating, it is also called café coronary syndrome because it presents like an acute heart attack due to coronary obstruction. The series of work for cafe coronary syndrome (CCS), which is also known as a syndrome with foodborne choking, are mostly based on the autopsy findings [4,5]. The rate of incidences is reported as 0.66 of 10,000 and the mortality rate is 85% [3]. CCS-related deaths have been reported as 1.3% [6] among the patients who were hospitalized because of chronic diseases. Risk factors for this cause of death include neurologic and psychiatric diseases, old age, poor dentition, local malformation, local tumors, and intoxication from alcohol and drugs [3,5,7,8,9,10]. Their etiology is various but generally preventable. Coprophagic CCS and CCS

due to the aspiration of radio-contrast agents have been reported in patients with Parkinson [11,12].

Fatalities from foreign bodies in the larynx are reported frequently in middle-aged and elderly people [5,7,8,13]. 1998. This age group is rapidly growing in Western society, and the importance of accidental deaths from choking on food might increase. In the United States, choking is the fourth leading cause of death from unintentional injury [14]. Typically, in these types of fatalities, the victim collapses immediately while eating. The diagnosis of bolus death is difficult because of the sudden nature and led to the vivid description of Cafe´-Coronary Syndrome [15] because the sudden cause of death is mostly misinterpreted as acute cardiac- or coronary-failure. Many of these witnessed cases can be saved with proper, prompt emergency care while awareness of the condition can minimize the deaths that are not witnessed. Death from corpora aliena in the larynx is a well-known entity in forensic pathology. The correct diagnosis of this cause of death is difficult without an autopsy, and misdiagnoses by external examination alone are common. In the early years of medicolegal investigation, it was assumed that death occurred due to asphyxia, but today, it is known that many cases are reûexogenic [5,7,16]. In addition, deaths in scurrile situations are reported in case reports [17,18].

It is argued that dramatic events which happen in CSS are triggered by chewing and swallowing function disorders [7]. It is vitally important to monitor closely any patients at high risk for CCS, to raise awareness on the issue among health care workers, to diagnose early and to intervene immediately.

CASE REPORT

A 27-year-old waiter had dinner in a restaurant after finishing his work. While eating a piece of meat, the man collapsed lifelessly. He was unable to breathe and speak, his breathing was shallow and he had an agonic appearance. He was presented as having a heart attack and having tumbled down to our emergency department (Dr BSA Medical College & Hospital) by his relatives. He had no chronic disease. Resuscitation attempts were undertaken but remained unsuccessful. The man was declared dead at the incident scene. The deceased had a history of consumed large amounts of alcohol prior to the incident.

External examination, the subject was averagely built and nourished. Rigor mortis was fully developed. Post mortem staining was present and fixed over the back and dependent parts of the body. There was no bluish discoloration of finger, toe nails and lips. There were no external injuries seen during examination. On internal examination,' all viscera were 'congested. During the throat examination, a piece of mutton bone found in the larynx (3.5 x 1.4 cm) was found in the larynx in between the epiglottis and the vocal cords (Figure 1&2). This piece of meat led to a nearly complete obstruction of the larynx. Because of the deep position in the larynx, this food bolus was not visible at external examination of the body. Stomach contained about 500mg of semi-digested food material with the smell of alcohol present (Figure 3).

Lungs were oedematous exuding dark red color bloody fluid. Viscera were preserved and sent for chemical analysis of common poisons and any sedative drugs. Viscera were also sent for histopathological examination to rule out other pathologies. Histopathological analyses gave negative results, while viscera report shows blood alcohol concentration was 110.6 mg/dl. The cause of death was due to reflex parasympathetic cardiac inhibition

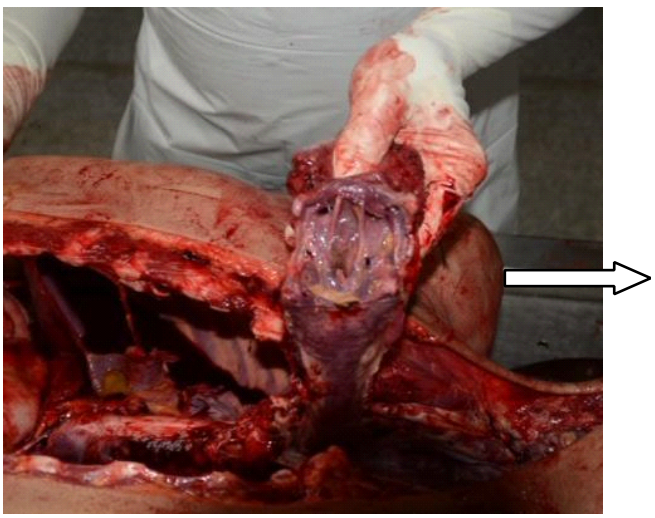

Figure 1: A piece of mutton bone was found in the larynx in between the epiglottis and the vocal cords

Figure 2: Shows measuring of a piece of mutton bone (3.5 x 1.4 cm)

Figure 3: Stomach contains about 500mg semi-digested food material with smell of alcohol

as a result of choking. Circumstances were consistent with accidental choking.

DISCUSSION

'Choking' or obstruction of upper air, i.e. between bifurcation of trachea & pharynx is a well known phenomenon in forensic literature for many centuries and asphyxiation of food has been recognized as a cause of sudden accidental death [19,20]. Café coronary syndrome or death due to acute obstruction of upper air way by impacted food while eating was first described in deaths at restaurant where the victim collapsed in front of others most of the time trying to swallow a piece of meat [15]. However, later rare variants have been reported such as coprophagic cafe coronary [11] and therapy related cafe coronary [12].

According to the pathogenesis of CCS, there are problems in the second and third phases of swallowing. Unless rimaglottidis is closed in the second phase, complete obstruction of the lower airways develops with half-digested food particles and CCS, which may end up with cardiac arrests, starts. In these cases, the diagnosis is usually based on the medicolegal autopsy findings [3,4,5,8]. However, if rimaglottidis is closed in the second phase of the swallowing, obstruction of the upper airways (rimaglottidis level) develops and non-fatal cafe coronary syndrome (NF-CCS), which continues with dryland drowning, starts. Unless there is a quick and on-time interference, each case can turn to a fatal course although the mechanisms are different.

It is very difficult to differentiation between accidental death by a foreign body in the larynx and a natural death from other causes for example, sudden cardiac failure. The major diagnostic problem is the deep position of the bolus in the pharynx-making it often not detectable during the external examination. Less than 10% of incidents of fatal accident are correctly identified by emergency services [4]. Furthermore, the accusation of maltreatment from a medication overdose or inappropriately prepared food may emerge in hospitalized patients or elderly if they die while eating or getting fed [12,21]. Well known predisposing factors for CCS are old age, inadequate mastication due to poor dentition/denture and alcohol consumption, however sedatives drugs and anti-parkinsonism drugs were also found to have an increased predisposition [22,23]. However, reported predisposing factors for children were inadequate dentition for the food provided and lack appropriate eating skills [24,25].

Any dysfunction that develops during chewing and swallowing is accused for the pathogenesis of CCS, which can be a case not only in humans but also in marine mammals [2,7,26]. The situation, which is also defined as "fast eating syndrome", is referred to as CCS due to the fact that it often occurs during eating in restaurants, and

at first glance, it is similar to the clinical symptoms of acute myocardial infarction.

Studies conducted on the basis of medicolegal autopsy findings show that in fatal course CCS cases, the obstructing foreign objects are passing towards the trachea, from open rimaglottidis [3,5,7]. Although they are reported in all age groups, fatal course CCS cases are more commonly seen in children and the elderly [2,8]. In pediatric patients, sudden emotional states during the chewing of especially semi-solid food, which lead to temporary disturbances of chewing and swallowing mechanism, can cause fatal course CCS. In the elderly, damaged dental structures, organic brain syndromes such as dementia and Parkinsonism, neuroleptic or psychotropic medication use, hospitalization and male gender are the known risk factors for CCS [3,11]. Pathophysiology of NF-CCS, which is caused by neuroleptic or psychotropic medication use, is explained by bradykinesia and tardive dyskinesia due to slowed oral and pharyngeal muscle movements [27,28].

Mittlman and Wetli study state the commonest type of food involved in 'free roaming adults" was meat while in "institutionalized adult" commonest agent was soft friable snack food like bananas, bread and peanut butter [3]. Similarly Berzlanovich *et al.* study also found a similar trend where significantly higher asphyxiation of soft/slick foods with agomphiasis, occurring frequently during lunch in more elderly population in contrast to choking of large pieces of foreign material with higher rate of blood alcohol concentration in younger elderly group [8].

In children trends were different in compare to elder people where commonly asphyxiated food item being hot dogs followed by various items including candy, popcorn to toy rattle and tissue paper [2].

According to 2006 Wick *et al.* study found 61% fatal food asphyxia cases had histories of neurological or psychiatric disorders and 61% were described as either edentulous or having significant numbers of teeth missing. Toxicological evaluation of blood revealed alcohol and a variety of psychotropic medications in 44% cases. The diagnosis of cafe coronary syndrome can only be made with confidence after the clinical history and circumstances of death have been clearly established, impacted material has been demonstrated in the airway at autopsy, risk factors have been identified and other possible causes of death have been excluded [5].

Such cases may raise awareness especially in intoxicated person where the gag reflex is impaired. The diagnosis of café coronary syndrome can only be made with confidence after the clinical history and circumstances of death have been clearly established, impacted material has been demonstrated in the airway at autopsy, risk factors have been identified and other possible causes of death have been excluded.

CONCLUSION

This case highlights the need of being aware of the condition especially in the intoxicated persons 'particularly where the ability to swallow or masticate is severely impaired or those who tend to gulp food without mastication. Eating smaller portions, prior munching, crumbling of the food, avoiding gulping quickly are some measures that alcoholics/intoxicated persons must know if we are to prevent deaths from cafe coronary syndrome. However, if such situation occurs awareness of emergency treatment manures like Heimlich maneuver will save many of these lives. A large proportion of deaths occur suddenly before any possible hypoxic manifestations occurs; these fatalities must be caused by neurogenic cardiac arrest, either purely neurogenic or accelerated by excess catecholamine release from the adrenaline response. Certain groups of people are generally seen as at risk for choking: young children, the elderly, neurological patients, alcoholics, drug addicts and of course, institutionalized psychiatric patients.

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