

## Opinion

# Syncope

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## INTRODUCTION

Controlled chaos is common place in the dental setting. Having an emergent event brings chaos to a new level in terms of panic and possibly even a hospital event or a death. These events happen without warning. Many emerging events begin similarly and without the doctor being aware of what's happening initially. So, having a system that develops a diagnosis and works through the event thoroughly is critical to successfully managing these situations. Having been involved in hundreds of syncopal events in 32 years of practice, our system has worked well and even prevented syncope in some situations.

Syncope is one of the most common emergent events in both the dental setting as well as in the medical world. Most dentists have had a patient with a syncopal episode. Many dentists have hey sequence of care to help a syncopal patient that is modest to minimal at best. Often dentists treat syncope with a cold towel on the forehead and hope the patient gets better. It is vitally important that there is a team system that is regularly practiced to treat any event including syncope once a quarter (short meeting with discussion and working through events). Aspects of treating emergencies and urgencies must be in place such as: having a usable and accessible emergency kit, having practiced team roles, and most importantly having a cross trained team approach to emergencies. In speaking with doctors through the years, a general consensus to the approach to syncope is doing nothing and hoping it resolves. In today's world there's a wealth of literature at our fingertips to develop a basic framework of information to best treat the patient. Most dentists have forgotten or are minimally aware of the pathophysiology, the differential diagnosis as well as potential consequences of syncope. A syncopal episode can be defined as a transient loss of consciousness due to a decrease in brain oxygen and perfusion but with spontaneous recovery. The blood pools in the extremities. Critical blood flow is reduced to a level, which is roughly equal to the systolic blood pressure of 70mmHg. Cerebral of ischemia lasting longer than 10 minutes can lead to seizure activity. Surprisingly in rare cases, a syncopal episode can have a systolic pressure dropped to zero with periods of asystole. If the brain oxygen and the blood flow are not restored within 6 to 10 minutes, permanent brain damage can occur. Patients should be screened and monitored for other sources of syncope due to medical issues and congenital defects. In dealing with syncope in the office on a regular basis, thoughtful action as well as automatic activities best develop a favorable result during the event [1-4]. Also, having a well-trained staff that

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can recognize and begin treatment for events prior to the doctor being called to the room or area of the event can be life saving. As a matter of fact, we have had staff regularly begin to go through the sequence of care for patients with syncopal episodes. Initial treatment can begin with the **automatic activities** which allows working through the situation to be thorough even though many things can be happening at one time without understanding what is actually happening in the event.

## AUTOMATIC ACTIVITIES

1. Recognize the event
2. Stop the procedure
3. Clear the surgical site
4. Question the patient, what is happening?
5. Have the patient take 3 deep breaths
6. Give oxygen 6 to 10 liters per minute
7. Have the patient cough
8. Activate the team and or 911

## BASIC APPROACH

1. Relate to past medical history (asthma) to the sign or symptom (wheezing)
2. Start doing specific acts to work through the episode of syncope (trendelenburg, cough, contract the muscles in the arms and legs)
3. Think about other possibilities (differential diagnosis)
4. Classify the patient ASA status to do determine post event treatment
5. Work in the framework of pre-event, event, post-event
6. Think about post-event treatment and potential complications

In recognizing syncope, they're generally early signs such as feeling warm, loss of color (grayish color), perspiration, nausea, and tachycardia. The late signs can be pupillary dilation, yawning, cold hands and feet, bradycardia, and hypotension, dizziness, visual disturbances, and loss of consciousness. Many patients say that they feel like they're going to pass out prior to the event. The signs and symptoms are important to recognize because syncope can be a general indication of a much more serious medical issue especially in patients with congenital diseases, cerebrovascular diseases, and cardiovascular disease [5-7].

ASA classifying the patient is important in that it provides clues into how most safely to treat the patient including obtaining a potential medical clearance. Generally, patients that are classified as ASA III are recommended to have a medical clearance prior to treatment. Patients classified as ASA III or ASA IV have a much greater likelihood of developing a life-threatening situation relative to those patients that are ASA I or ASA II classifications. The differential diagnosis of syncope is serious and can include cardiovascular issues respiratory issues, cerebrovascular problems, hypoglycemia, and medical issues. Diabetics can have problems with syncope as well as patients with electrolyte disturbances. Congenital diseases must also be considered. Complications can occur including death after the event days to weeks or even up to a year after the event. Recent literature has shown that the patient may have blood brain barrier changes substantiating the patient having some instability after the syncopal event [7-9].

As a result some of the most important clinical factors in treating syncope are recognition of the event and getting the blood and subsequent oxygen to the brain by giving oxygen to the patient and placing the patient into the trendelenburg position with the head below the heart as quickly as possible. Elevating the legs can also help significantly to get blood to the brain. If the patient is conscious, have the patient cough. We also have the patient contract the muscles in their arms and in their legs for 3 to 5 minutes which also helps to get the blood flowing back to the brain especially at the beginning of the event when the patient says that they are feeling faint. It works well to prevent the event. Keep checking on the patient because they often stop contracting the muscles too soon. In classic syncope which has both the heart rate and the blood pressure low ie., BP 85 / 48 and a HR of 57. Contracting the muscles isokinetically or isometrically can raise the blood pressure significantly. The patient's color improves fairly rapidly. If the patient passes out completely, then place them in trendelenburg position with their legs above their heart and head below the heart. Provide the patient with oxygen 6 to 10 liters per minute and activate the team while starting to work with the automatic activities. Develop a basic approach. When the patient starts to have an apparent syncopal episode. Stop the procedure, clear the surgical site, and have the patient cough trying to get the blood to the heart and brain quickly. This specific activity inserted quickly into the automatic activity part of the framework works well in preventing a syncopal loss of consciousness. It may often avert the syncopal episode progressing beyond the feeling of passing

out, sweating and lightheaded sensations. Perform the automatic activities quickly and move to the mindset of the basic approach in treating the patient. Initially, the event is often unclear as to what is happening, however this approach will allow a thorough development and treatment of the situation. Begin working through the framework and keep in mind working the ABCD's as well while tendering treatment medications like oxygen, sugar, fluids, ammonia, and atropine. Continue to monitor the patient and work through the basic approach by considering the past medical history relative to the event. Think about the ASA classification and look for medical issues that may be related to the episode. Entertain the possibility of an alternative diagnosis beyond syncope. Past medical histories are often inadequate or inaccurate, however the patient will get very honest answering questions in or around an emergent event.

Overall, in many situations things happen very quickly and chaotically. Panic can creep in to both the doctor and team psyche to further reduce the capacity to treat and understand what is happening. Having a simple and usable basic plan that is workable in the event mentally and strategically provides the team the best possibility of success. The literature has added significantly to the topic of syncope in recent years, in terms of stratifications and categories of syncope as well as the pathophysiology. These topics are not high on our list to read in the dental world but are at our fingertips 24 hours a day [10,11].

So work the system of the automatic activities and the basic approach in the framework of the pre- event, event, and post-event. Understanding that what is happening at the beginning of an event is often unknown, and working the emergent situation in a systematic way will reveal vital information as well as allow thorough treatment of what is happening until the emergency squad arrives or the patient resolves. Keeping up with information on medical emergencies is a difficult task in today's fast-paced dental practice, nevertheless must be done. A death in the office or near death situation will be an emotional event that may be life altering for all involved. It is far better to learn from someone else's experience or from the literature than have a situation that may alter everyone's life involved. Many of these situations call handled well, especially at the beginning of the event, can be prevented from being a significant emergency. Also, the legal aspect of the event will likely take care of itself. Determine how and when to document the event in every case.

Finally, there are a few ancillary aspects in handling syncope and other emergent events that are important. A pre-op checklist that can be helpful. Human error is a frequent cause of these events. If sedation is being used, the systems and actual treatment are crucial to be ingrained in the team capabilities of treating these emergent events. If children are being treated, be regularly trained in handling emergencies for children. The 911 system has run into great difficulties across the country, so the time for the emergency squad to arrive can vary greatly. Be prepared. The ultimate goal is to best diagnose and treat until the emergency squad arrives or the patient stabilizes nonetheless post-event care must be monitored, assessed and provided. This article

describes a way to care for patients with syncope despite many ways to approach the situation. I have no conflicts of interest in writing this paper.

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