

Management of Syncope in Dental Camps

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ABSTRACT

Syncope is a transient, self-limiting, self-correcting loss of consciousness, usually leading to fall on prolonged standing. The normal circulation is restored immediately after the collapse lest the patient is suffering from any underlying diseases. Dental camps as an adjunct to public health dentistry provide awareness and treatment but lack hospital level management or emergency support system. Hence, in a dental camp, a dental practitioner should be well aware of the prevention and treatment practices to manage patients experiencing syncope with available limited resources. The present article summarizes such treatment guidelines for efficient management of syncope in dental camps till the medical emergency unit arrive thus facilitating better health care delivery.

Keywords: Syncope, management, emergency, dental camp

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INTRODUCTION

Nowadays, dental camps have become integral part of Dental curriculum. They provide an opportunity for the dental student to promote & practice oral health education & at the same time act as a reservoir to increase the number of out patients of the dental colleges. In lieu of this, handling medical emergencies in rural set-up really becomes a challenging task. Syncope is one such commonly occurring medical emergency during extractions in camps. Therefore this article plans to highlight the management of syncope in dental camps.

Syncope (Greek, 'syn' means 'with', 'koptein' means 'to cut' or 'to interrupt') is a symptom defined as a transient, self-limited loss of consciousness, usually leading to falling. The onset of syncope is relatively rapid, and the subsequent recovery is spontaneous, complete, and usually prompt. The underlying mechanism lies in transient global cerebral hypoperfusion. A decrease in systolic blood pressure to 60 mmHg is associated with syncope (1).

Fainting seems rather innocuous, not much of a medical emergency at all, but if cerebral ischemia is not corrected, perma-

nent neurologic damage or death is possible.

SYMPTOMS

The symptoms can be divided under three phases:

- **Presyncope:** the period when the body experiences lack of nutrition and oxygen by inadequate cerebral circulation. Early manifestations include a pale or ashen skin color with the skin possibly cool, and/or moist ("a cold sweat"). The victim might describe a feeling of warmth in the head and neck, lightheadedness, or dizziness; and may also feel nauseated, complain of numbness or tingling in the toes and fingers etc. Some people say they feel bad, or that everything is going dark just before losing consciousness. Fainting can occur without warning.
- **Syncope:** the period when the victim actually loses consciousness. Bradycardia, hypotension, and a weak, thready pulse is common. Unconsciousness results in muscular relaxation and the possibility of an obstructed or partially obstructed airway, due to a decrease in muscle tone that may cause the tongue to fall into the oropharynx. Another

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effect of this muscular relaxation may be fecal incontinence.

- **Postsyncope:** period that occurs as the victim returns to consciousness and the heart rate, pulse, and cerebral nutrition return to normal. During this time, the victim is more likely to reexperience syncope if raised from the supine position too quickly, or allowed to stand too soon after the episode or shown any visually disturbing triggers for example syringe, blood soaked cotton etc(2).

CLASSIFICATION

Real or apparent transient loss of consciousness can be

Syncope

- Cardiovascular diseases: arrhythmic ex: av block, sinus pauses, ventricular tachycardia
- Non arrhythmic ex: hemodynamic, hypertropic cardiomyopathy, aortic stenosis
- Non cardiovascular diseases ex: reflex mechanisms, orthostatic hypotension, psychogenic, migraine, carcinoid syndrome, and systemic mastocytosis.
- Others: syncope of unknown origin (about 50 % of all syncope origin), undiagnosed syncope, and drug induced, alcohol, illicit drugs.

Non-syncopeal

- Disorders resembling syncope without any impairment of consciousness, e.g. falls, psychogenic pseudo-syncope, etc
- Disorders with partial or complete loss

of consciousness, e.g. seizure disorders, etc (3, 4).

Common causes of syncope by patient age

Young (<35 years): Neurocardiogenic, Situational, Psychiatric, (Undiagnosed seizures), Middle-aged (35–65 years: Neurocardiogenic, Cardiac Elderly (>65 years): Multifactorial, Cardiac Orthostatic hypotension, Drug-induced, neurally mediated (3).

SYSTEMIC MANAGEMENT OF SYNCOPE PATIENT

Initial Approach

It includes careful analysis of the symptoms, clinical findings and past medical history as described by the patient or other observer. Though various clinical algorithms have been developed for syncope, a universal evaluation stratagem cannot be formulated due to its diverse presentation. Hence, physical examination and history are to be taken carefully. The attention should be directed towards:

- Characteristic and length of the episode
- Patient's and witness's accounts
- Patient age
- Concomitant disease
- Associated symptoms
- Premonitory symptoms
- Postsyncope symptoms
- Circumstances, situations surrounding the episode
- Body position, posture and emotional state, medications
- Family history (3)

- ◆ Any history of sudden death, congenital arrhythmogenic heart disease of fainting
- ◆ Previous cardiac disease
- ◆ Neurologic history like parkinsonism, epilepsy, narcolepsy
- ◆ Metabolic disorders like diabetes
- ◆ Medications like anti-hypertensive, anti-angina, anti-depressants agents (5).
- Detailed History of the attack which should include:
 - ◆ Circumstances just prior to the attack: position, activity, predisposing factors, precipitating events like fear, intense pain, neck movements etc.
 - ◆ History of onset of the attack: association of nausea, vomiting, abdominal discomfort, feeling of cold, sweating, aura, pain in the neck or shoulders, blurred vision, dizziness, palpations etc.
 - ◆ The description of attack (as per eyewitness): Way of falling (slumping or kneeling over), skin colour (pallor, cyanosis, flushing), durations of loss of consciousness, breathing pattern (snoring), movements (tonic, clonic, tonic-clonic, minimal myoclonus or automatism), durations of movements, onset of movements in relation to fall, tongue biting.
 - ◆ The end of the attack: Nausea, vomiting, sweating, feeling cold, confusion, muscle aches, skin colour, injury, chest pain, palpations, urinary or faecal incontinence.

Tabel 1: Symptoms related to syncopal spell

Nausea, diaphoresis, fear Aura Palpitations Posture-related Visual change, neurologic abnormality Headaches Chest pain Dyspnea Flushing Prolonged syncope Slow recovery Confusion Prolonged weakness Skin color	Neurocardiogenic Seizure Tachycardia Orthostatic hypotension, volume depletion, dysautonomia Stroke (unlikely presentation), seizure, migraine Migraine, intracerebral bleed Ischemia-induced arrhythmia Pulmonary embolus, pneumothorax, hyperventilation (hysteria) Carcinoid syndrome Aortic stenosis, seizure, neurologic or metabolic cause Seizure, drug, ethanol intoxication, hypoglycemia, sepsis Stroke, transient ischemic attack, intoxication, hypoglycemia Neurocardiogenic syncope Pallor – neurocardiogenic; blue – cardiac; red – carbon monoxide
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Symptom related to syncopal spell is summarized in table 1(3).

After the Initial Evaluation

The management includes:

- Positioning: no premature sitting of patient, Trendelenburg position, and supine preferred .In Pregnancy lateral decubitus preferred.
- Relief from compression on the neck. Try to Revive the Person by taping briskly.
- Evaluate and maintain Airway, breathing, circulation. If absent, begin CPR.

Call local emergency number. Continue CPR until help arrives or the person responds and begins to breathe.

- If the person is breathing, restore blood flow to the brain by raising the person's legs above heart level — about 12 inches (30 centimeters) — if possible.
- Give supplemental oxygen.
- When consciousness is regained, patient should be kept flat and reassured. If the person doesn't regain consciousness within one minute, call local emergency number.
- Once pulse and blood pressure recover, slowly raise patient to seated position. Fruit juices or glucose water can be administered orally until person recovers completely.
- Patients with significant medical problems, or when syncope is prolonged or complicated by seizure activity, should

be transferred to a hospital environment for further assessment

After the Management

If recovery from syncope takes longer than five minutes after positioning and/or if complete recovery does not occur in 15 to 20 minutes, another possible cause of unconsciousness should be considered and definitive management should be started including summoning emergency medical services. The patient is referred to the hospital under following circumstances:

- Malignant arrhythmia or cardiovascular cause suspected
- New neurologic abnormality present
- Severe injury present
- Multiple frequent episodes
- Severe orthostatic hypotension
- Uncontrolled “malignant” vasovagal syncope
- Elderly patient

- Treatment plans not possible as an outpatient(3)

The vital steps are included in Table 2 (6).

CONCLUSION

Prevention relies on using a thorough medical history to identify factors that may predispose a person to syncope. Allowing or encouraging a person to verbalize fear which is usual in dental treatments is another useful step that can be taken. Fortunately, treating patients while they are in the supine position prevents the development of cerebral anoxia with resultant syncope, and syncope during treatment is uncommon today.

The principal goals of treatment for patients with syncope are to prolong survival, mainly by decreasing the risk of sudden cardiac death, limit physical injuries, and prevent recurrences. The importance and priority of these different goals depend on the cause of syncope.

Table 2: Vital steps in management of syncope

<p>Clear the airway</p> <ul style="list-style-type: none"> ● Assess if the person is conscious / breathing ● Lay the person on his back on a hard surface ● Using a head tilt -chin lift open his airway ● Check for breathing sound ● If not breathing, start mouth-to-mouth breathing
<p>Mouth- to-mouth breathing</p> <ul style="list-style-type: none"> ● Pinch the person's nostril shut .Seal his mouth with your own ● Give the first breath, lasting one second ● Watch if chest rises ● If it rises, give second rescue breath ● If it does not rise, give a head tilt- chin lift ● Now give second rescue breath
<p>Restore circulation through compression</p> <ul style="list-style-type: none"> ● Place heel of your palm on patient's chest ● Place your other hand above first ● Keep elbows straight ● Push down using upper body weight (compress) ● Push hard and fast ● After 30 compressions, clear airway ● Give two rescue breaths ● This is one cycle ● Give 100 compressions /minute ● Continue CPR till medical help arrive
<p>Caution</p> <ul style="list-style-type: none"> ● Ribs/heart/lungs/ liver may be injured ● After CPR, medical attention should be given

REFERENCES

1. Brignole M, Alboni P, Benditt D, Bergfeldt L, Blanc JJ, Bloch PE Thomsen. Guidelines on management (diagnosis and treatment) of syncope. *European Heart Journal* 2001;**22**:1256–06.
2. Available at: http://www.adha.org/CE_courses/course2/unconscious_emergencies.htm
3. Christina Faull, Yvonne carter, Lillian Daniels. Hand book: palliative care. Second edition 2005. Blackwell publishing. Edited by Blair P, Grubb, Brain Olshansk.
4. Michele Brignole, Paolo Alboni, David G. Benditt, Lennart Bergfeldt, Jean-Jacques Blanc, Poul Erik Bloch Thomsen, *et al.* Guidelines on Management (Diagnosis and Treatment) of Syncope – Update 2004. Executive Summary. *European Heart Journal* 2004;**25**:2054–72.
5. Angel Moya, Richard Sutton, Fabrizio Ammirati, Jean-Jacques Blanc, Michele Brignole, Johannes B. Dahm *et al.* Guidelines for the diagnosis and management of syncope (version 2009). *European Heart Journal* 2009;**30**:2631–71.
6. Available at: <http://www.medindia.net/patients/firstaid-cardiopulmonary.htm>.