

Office Emergencies

Most Common Dental
Office Emergencies

Medical Emergencies in the Dental Office

- ◆ 1962 ADA survey-45 deaths for 4000 dentists
- ◆ McCarthy(1973)-1 or 2 office deaths will occur in a practice lifetime
- ◆ 10% of all deaths are sudden and unexpected

Medical Emergencies in the Dental Office

Potential increase in the number of
medical emergencies

- Patients seeking care late in life
- Life span has increased with advances in medicine and pharmaceuticals
- Dental appointments are longer

Medical Emergencies in the Dental Office

Potential decrease in medical
emergencies in the dental office

- Patients are better cared for medically
- Dentists are more aware of basic life support techniques and the management of dental emergencies
- Dentists understand medical infirmaries
- Dentists are more efficient

Dental Malpractice Claims

- ◆ Failure to act properly in an emergency
- ◆ Failure to obtain a medical history
- ◆ Failure to modify dental care in accordance with medical conditions
- ◆ Lack of proper equipment/agents to treat a medical emergency
- ◆ Ignoring standards for local anesthetic administration

Allies in a Malpractice Claim/Dental Board Inquiry

- ◆ Documentation of a medical history
- ◆ Written informed consent, especially for higher risk procedures
- ◆ Complete, legible and unaltered chart notes

Potential for Disaster-Drug Administration in Dentistry

- ◆ Local anesthetic
 - Amide solution-overdose/toxicity vs. allergy
 - Vasoconstrictor-cardiac effects
- ◆ Antibiotic
 - Penicillin like drugs-allergy
- ◆ Analgesic
 - ASA, NSAIDs-allergy

Potential for Disaster

- ◆ Latex allergy
- ◆ Stressing a medically compromised patient

Absolute Best Strategy for Managing Medical Emergencies

- ◆ Prevention
- ◆ Preparation
- ◆ Basic Life Support (BLS/ACLS)

Obtaining the Medical History

- ◆ Questionnaire
- ◆ Interview
- ◆ Chart review
- ◆ Consultation with physician



Physical Evaluation

- ◆ Vital Signs
 - blood pressure
 - pulse
 - respirations
- ◆ General physical assessment



Most Common Medical Emergencies

- ◆ Syncope
- ◆ Hyperventilation
- ◆ Hypoglycemia**
- ◆ Postural hypotension
- ◆ Angina pectoris*
- ◆ Asthma attack*
- ◆ Acute myocardial infarction*
- ◆ Seizure*
- ◆ Allergic reactions*

*= reviewed in another seminar
 **=also discussed in endocrine emergencies

Case 1

- ◆ As you are about to give an injection, the 19 year old U of M football player in your chair tells you he is feeling a little sweaty and dizzy...

Vasovagal Syncope

- ◆ Most common related to injections in younger individuals
- ◆ Parasympathetic response often followed by sympathetic response secondary to anxiety
- ◆ Warm feeling, pale, diaphoresis, "feeling faint or sick," nausea, bradycardia, hypotension, tachycardia, LOC

Management: Vasovagal Presyncope/ Syncope



Trendelenburg Position

Case 2

- ◆ An 83 year old woman who regularly comes to your office is in your waiting room . She suddenly stands, states she is dizzy, then falls to the ground unconscious.
- ◆ Review of her past medical history is significant for hypertension. She is presently on a calcium channel blocker, nifedipine and a diuretic, hydrochlorithiazide.

- ◆ Upon examination, she is unresponsive to your voice or vigorous shaking, she is breathing spontaneously at a rate of 16 breaths per minute, she has a regular heart rate of 72 beats per minute but her blood pressure is somewhat low at 98/65.

The Aged Patient

- ◆ The average life span in the U.S. has increased from 47 years in 1900 to 75 years at the end of this century
- ◆ Most dentists and dental hygienists presently treat a sizable percentage of patients who are 65 years or older

Changes as we age...

- ◆ Advanced age itself only minimizes the risk for medical and dental procedures
- ◆ Atherosclerosis, hypertension, and heart disease are more prevalent in older patients
- ◆ These systemic conditions likely play a greater role in the risk of developing an acute medical emergency during an office visit

However in an emergency...

- ◆ The affects of aging can negatively impact on the patient response to stress due to a diminished reserve capacity
- ◆ Symptoms that may be fairly innocuous in the young may be quite ominous in older individuals

Syncope in the Elderly

- ◆ Vasovagal syncope in the elderly accounts for only 1 to 5% of the cases of syncope
- ◆ Cardiac
 - acute myocardial infarction with pump failure, valvular disease (especially progressive aortic stenosis), or symptomatic dysrhythmias (atrial fibrillation, sick sinus syndrome or ventricular dysrhythmias)
 - less frequent causes include congestive heart failure or the side effects of cardiac medications
 - due to the consequences of these conditions, all episodes of syncope in the elderly patient should be treated as cardiac related until proven otherwise

Syncope in the Elderly

- ◆ Cardiac
 - Orthostatic Hypotension
 - ◆ prevalence among older individuals range from 5% to 20%.
 - ◆ light headedness, weakness, nausea, or syncope with postural changes
 - ◆ medication use is the most frequent cause of orthostatic hypotension in the elderly even if the dosage of medication is in the therapeutic range
 - ◆ frequently medications that may cause vascular or intravascular volume changes including antihypertensive agents and diuretics

Pharmacology and Aging

- ◆ trend toward an ever increasing number of medications as a person ages
- ◆ usually one or more medications regulating the cardiovascular system
- ◆ significant drug interactions and side effects can occur including interactions among common medications used in dentistry
- ◆ increased sensitivity to drugs with central nervous system actions including sensitivity to local anesthetics. Dosages of all local anesthetics should be carefully monitored to avoid toxicity

Syncope in the Elderly

- ◆ Other causes:
 - patients with COPD and a sustained cough can develop syncope
 - related to urination, defecation or after ingestion of a meal (post-prandial syncope), all related to parasympathetic nerve discharge
- ◆ Despite comprehensive evaluation, the source of syncope remains obscure in 30 to 50% of the cases

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Postural Hypotension- Management

- ◆ Slow to change position from laying to sitting to standing
- ◆ Need for change in medication? (depends on severity)
- ◆ Recent change in medication
- ◆ Rule out precipitating causes

Case 3

- ◆ A 54 year old woman is in your dental chair, she is extremely anxious and as she talks to you she is breathing faster (tachypnea) and is experiencing tingling around her mouth (perioral parasthesias)...

Hyperventilation

- ◆ increase in respiratory rate and depth beyond that required for normal metabolism
- ◆ "Hyperventilation syndrome"- most commonly seen in dental office
 - Related to anxiety/ panic
 - Associated with lightheadedness, dizziness, chest pain, dysphagia, nausea
- ◆ rule out more serious potential conditions including pulmonary (asthma, PE), cardiac (CHF), endocrine (diabetic ketoacidosis)

