

MEDICAL EMERGENCIES IN THE DENTAL OFFICE

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WARNING!

- **“Dental practitioners who employ local anesthetic agents should be well versed in diagnosis and management of emergencies which may arise from their use.**

- **Resuscitation equipment, oxygen and other resuscitative drugs should be available for immediate use”**

- **The public does not demand complete success from a resuscitation, but they expect a reasonable approach**

● **NEVER TREAT A STRANGER!**

- **Better to have it and not need it than need it and not have it**

● **The best treatment for any
emergency is**

PREVENTION

Scenario #1

- **A 37 y.o. male with mild HTN, dx with apical periodontitis from tooth #11 returns for RCTx. He has received 2 days of oral antibiotics.**
- **Anxious, quiet and somewhat pale, he remarks that while his sx has resolved, he slept poorly last night.**

- **While you administer LA (2% Lido/1:100k EPI the pt tenses, inhales briefly and utters a slight cry of pain.**
- **You finish quickly to end his discomfort, reposition the pt, and return to your recall pt.**
- **You are urgently summoned back to the operatory 1 minute later. The dental assistant is trying to arouse an unresponsive ashen-appearing pt.**

- **A radial pulse is unobtainable. You lower the chair to a supine position, and feel for carotid pulse.**
- **P (52, weak,) RR (12 bpm,) BP (88/50.)**
- **A nasal mask is applied with 6L of 100% O₂**
- **The patient is still unresponsive.**

- **1 minute after you arrive, the pt develops sudden gross, jerking movements of his legs, arms and head for 20-40 seconds. Soon after, the pt becomes limp**
- **30 seconds later, he opens his eyes and is disoriented; he tries to remove the nasal mask and roll over. Repeat v.s. have improved. BP:138/88 P:55**

- **A vague hx of several similar experiences is reported**
- **The pt says he is exhausted and is perplexed about the recent events**

DIFFERENTIAL DIAGNOSIS

- **Vasodepressor syncope**
- **Orthostatic hypotension**
- **Toxic drug reaction**
- **Allergic drug reaction**
- **Hypoglycemic reaction**
- **Cardiac syncope**
- **Seizure disorder (epilepsy)**

Scenario #1

Acute Management

- **Chair repositioned to horizontal**
- **Airway-Breathing-Circulation**
- **Oxygen by full face mask**
- **Vital signs**
- **Visual inspection**

Scenario #2

- **A 55 y.o. obese male, previously known to your office presented for acute pain secondary to dental caries.**
- **During the pulpectomy he begins to rip off the rubber dam, saying he is nauseous.**

- **Calming words are ineffective. The pt begins yelling and tries to get out of the chair, then slumps back.**
- **He is responsive to name only, and continues to mutter unintelligibly.**

Clinical Findings

- **Mild tremor**
- **Pulse: 128, BP: 155/88, RR:16, shallow**
- **Cool, sweaty skin**
- **Weakness**
- **Anxiety**
- **Uncooperativeness**

Differential Diagnosis Altered Consciousness

- **Drug Overdose**
- **Hyperventilation**
- **Hypoglycemia**
- **Hyperglycemia**
- **CVA/TIA**
- **Hyper/Hypothyroidism**

HYPOGLYCEMIA

CONSCIOUS

- **Bizarre altered behavior**
- **Upright position**
- **Oral carbohydrate Q 5-10 min**

UNCONSCIOUS

- **No oral meds**
- **50% Dextrose IV or Glucagon 1 mg IV/IM**

Scenario #3

- **A 12 year old female with multiple mental and physical disabilities is having a gross scaling during which large calculus fragments are removed. In order to limit involuntary movements a papoose is needed in addition to Nitrous oxide/Oxygen sedation**

- **During the scaling, the dentist notices a change in the patient's color. She applies the nasal hood more firmly and lifts the patients chin.**
- **The patient exhibits nasal faring, and labored, noisy breathing.**

- **Assisted spontaneous ventilation with 100% oxygen via a bag-valve-mask and pharyngeal suction**
- **Chest auscultation + distant bilateral breath sounds. Pt is slightly cyanotic**
- **VS: BP-82/38, P-136 R-28, strained.**
- **Pulse oximetry=84% oxyhemoglobin saturation**

Definitive Treatment

- **Cont. ABC's assisted ventilation**
100% O₂
- **Bronchodilator: B₂ selective**
adrenergic agonist
- **Re-examine mouth, oro-pharynx**
for secretions
- **Reassess vital signs**
- **Activate EMS (?)**

- **5 minutes later: breath sounds improve but wheezing is heard, perioral swelling and facial urticaria is observed**
- **O₂ Sat. = 90-92%, BP = 84/41, P = 136**
R = 22, strained
- **Continue ABC's**
assist ventilation (100% O₂)

- **Bronchodilator (Parenteral)**

- B₂ selective adrenergic agonist**

- Terbutaline: 0.25-0.5 mg SC**

- Epinephrine: 0.3-0.5 mg (1:1000)**

- SC/IM or 1mcg/kg IV**

- **Antihistamine: Diphenhydramine**
12.5-25 mg IM/IV
- **Steroids**
- **Continue monitoring vital signs**
- **Activate EMS (?)**

Scenario #4

- **A 44 year old female with a fear of dentistry presents for extraction of a third molar with sedation**
- **Medical History**
 - Previous alcohol abuse**
 - IV/VI SEM, Consistent with MVP**
 - (2° Alcoholic myocardial toxicity)**
 - Mild Hypertension**

- **Episodes of cardiac dysrhythmia
(PSVT, Premature ventricular beats)**
- **Nadolol (Corgard), 40 mg QID**
- **Pre-op Vital Signs: BP (135/78), P(92)**
- **Premedication: Amoxicillin/Diazepam**
- **IV Sedation: Midazolam & Meperdine
Nitrous oxide/Oxygen**

- **Local Anesthesia: 2% Lidocaine with**

 - 1:100,000 Epinephrine**

- **Within 2-3 minutes:**

 - Increased BP – 195/110**

 - Decreased P – 64**

 - PVC's noted (6-8/Min)**

Differential diagnosis

- **Intravascular Injection: Epinephrine**
- **Epinephrine – Nadolol Interaction**

Non-selective beta blockade

**Unopposed Alpha-Adrenergic
Agonist**

Reflex baroreceptor bradycardia

Inc. afterload, dec. cardiac output

- **Epinephrine – MVP stimulated PVC's**
- **Stroke**
- **Hyperthyroidism**
- **Pheochromocytoma**

Acute Management

- **Terminate procedure**
- **Assess consciousness, symptoms**
- **Pharmacologic: Nitroglycerine, 0.3 SL**
Phentolamine (Regitine), 5mg/cc IM
Nifedipine (Cardizem), 10mg/cap SL
- **Continuous monitoring-BP, ECG, RR**
- **Consider TX for PVC's**