MEDICAL EMERGENCIES IN THE DENTAL OFFICE

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• "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
- 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 patient's 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% $O_2$
- Bronchodilator: $B_2$ 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

• $O_2$ Sat. = 90-92%, BP = 84/41, P = 136, R = 22, strained

• Continue ABC’s assist ventilation (100% $O_2$)
• Bronchodilator (Parenteral)
  \[ \text{B}_2 \text{ selective adrenergic agonist} \]
  
  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
- Phenolamine (Regitine), 5mg/cc IM
- Nifedipine (Cardizem), 10mg/cap SL
- Continuous monitoring-BP, ECG, RR
- Consider TX for PVC’s