Don’t Get Lost in the Medical Maze: Providing Dental Care to Medically Complex Patients

Case #1 Hypertension
- The most common primary diagnosis in the US
- Affects 50 million Americans
- Underlies most cardiovascular diseases
- Symptoms: occipital headaches, failing vision, dizziness, tinnitus, “stocking/glove” paresthesias
- Results in end-organ damage (heart, brain, eyes, and kidneys)
- Essential hypertension: unknown cause, 95% of cases, usually older patients
- Secondary hypertension: 5% of cases, known cause, usually younger patients
- Cardiovascular risks doubles for every increase in SBP of 20mm Hg or DBP of 10mm Hg
- Target BPs (JNC 8): Age<60: <140/90; Age >60: <150/90
- Dental management: Take BPs on all patients, use proper sized cuffs, good patient rapport, consider use of anxiolysis or nitrous oxide, short AM appointments, decrease exposure to epinephrine, avoid sudden changes in chair position

Case #2 Coronary artery disease, post-stent placement
- SBE prophylaxis for stents? - only in the immediate post-placement period
- Drug eluting stents: contain paclitaxel or sirolimus, and require DAPT
- AVOID abrupt cessation of DAPT with drug eluting stents
- Avoid elective dental treatment for first 6 months after MI (increased risk of reinfarction)
- Dental management: Monitor BP, consider the use of nitrous oxide, limit amount of epinephrine, use local measures to control bleeding

Case #3 Angina pectoris
- Angina: oxygen supply demand mismatch relieved by oxygen, rest, and vasodilators
- MI: ischemia leading to death of heart cells, not relieved by rest, oxygen, and vasodilators
- Dental management: Stop treatment and position patient (head up 45 degrees or Trendellenburg for SBP<100), call 911, give 100% oxygen, reassure patient, .4mg NTG SL which should relieve pain in 3-5 minutes, suspect MI if no relief and give ASA and morphine

Case #4 Congestive heart failure
- CHF: the heart is unable to pump enough oxygenated blood to the tissues
- Causes: weakening of the heart muscle, stiffening of the heart muscle, oxygen demands beyond what the heart can provide
- Prevalence increases with age to 5% at age 75
- Left sided CHF: can be systolic or diastolic
- Systolic- left ventricle with decreased force of contraction
- Diastolic- left ventricle is stiff and unable to fill completely during diastole
Right sided CHF- right ventricle has difficulty pumping blood to the lungs leading to vascular congestion, and fluid accumulation in the extremities, abdomen and lungs. Functional assessment: Metabolic equivalent of tasks (Mets)

Dental management: based on the degree of compensation, keep short appointments, beware of patient positioning, limit the amount of epinephrine

Another pearl: When you hear atrial fibrillation think of anticoagulation

Case #5 TIAs and Anticoagulation

Anticoagulation used in: Atrial fibrillation, prosthetic valves, DVTs, PE, stroke, dialysis, and hypercoagulable states

Older anticoagulants: heparin, enoxaparin, Coumadin and aspirin

Vitamin K dependent factors- II, VII, IX, an X

Literature on Anticoagulant Therapy:

- Dual antiplatelet therapy: combination of aspirin and plavix, dabigatran, or rivaroxiban
- Management of bleeding: pressure, gelfoam, surgical, burnishing, bone wax, cautery, topical thrombin, tranexamic acid

Case 6 Asthma

Obstructive lung disease: normal lung volumes, air can get in easily but has trouble getting out

Asthma types: mild intermittent, mild persistent, moderate persistent, and severe persistent

Differential diagnosis for acute respiratory distress: asthma, bronchospasm, laryngospasm, foreign body airway obstruction, CHF

Asthma signs and symptoms: sudden dyspnea, wheezing and productive cough, rapid breathing with prolonged expiration, cyanosis, anxiety, confusion, fatigue, normal to increased BP, rapid pulse

Management: eliminate precipitating factors, patient positioning, oxygen, beta 2 agonists, activate EMS, epinephrine .3mg subcutaneous Q 10-15 minutes x3

Other COPDs- bronchitis, emphysema
- COPD symptoms: increasing cough and changes in sputum, hyperinflation of the lungs, prolonged expiration, wheezing
- Dental management tip: AVOID nitrous oxide

Case #7 Diabetes mellitus
- DM: group of metabolic disorders that lead to an increase in blood glucose levels and develop due to inadequate insulin production or respond to the insulin produced improperly
- DM symptoms: polyuria, polydipsia, polyphagia with unexpected weight gain or weight loss
- Diagnosis: random blood glucose >200, fasting blood glucose >126, or HbA1c >6.5
- Type 1 DM: autoimmune destruction of pancreatic islet cells, thin stature, DKA
- Type 2 DM: insulin resistance secondary to obesity, obese stature, hyperosmolar, non-ketotic coma
- HbA1c: glycated hemoglobin, (hemoglobin bound to glucose) provides a 3 month average glucose concentration
- Keeping diabetic patients “sweeter” better than less sweet
- Slow or poor healing is not unusual
- Dental management: AM appointments, short appointments, watch for rapid progression of periodontal disease, check FSBS before treating, consult PCP

Case #8 Osteoporosis
- Age >45, Female>Male, increase in fibro-fatty bone marrow
- Think about bisphosphonates immediately
- Oral bisphosphonates: Fosamax, Actonel, Boniva
- Potency: 1000-10,000 greater than etidronate
- Key for dental management: length of bisphosphonate therapy to date, is it >3 years?
- References for the use of CTX blood test:

Case #9 Multiple myeloma
- In patients with multiple myeloma, breast cancer, prostate cancer, or lung cancer who have received chemotherapy, think about IV bisphosphonates
- IV Bisphosphonates: Boniva, Aredia, Zometa, Reclast
- Potency 100-100,000 greater than etidronate
- Indications for IV bisphosphonates: bone metastasis from lung, prostate or breast cancer, hypercalcemia of malignancy, multiple myeloma, or paget’s disease
- Bisphosphonates are quality of life drugs and do not increase the patient's life expectancy

Case #10 Cancer Radiotherapy
- Tissue response to radiation: 3H tissue (hypocellular, hypovascular, and hypoxic)
- Radiation effects are cumulative in nature
- Oral radiation results in xerostomia, and smooth surface dental caries
- Overlying skin may become hypopigmented, with loss of hair
- Prevention of osteoradionecrosis utilizing hyperbaric oxygen therapy
- Marx protocol: 20 presurgical dives/10 postsurgical dives