Resource view

Resource name	GENERAL MEDICINE IN DENTISTRY
Resource description	This is a lecture on general medicine in dentistry.
Resource content	

GENERAL MEDICINE

1.

Contents:

1. Respiratory Systems

2. Cardiovascular System

3. Endocrinology

4. Rheumatology

5. Infectious Diseases

6. Hematology

7. Gastrointenstinal System

8. Nervous System

9. Psychiatry

10. Medical Emergencies

RESPIRATORY SYSTEM

Normal Respiratory rate:

Adults: 12/ min

Children: 25/min

URTI: (upper respiratory tract Infection):

Infection of the upper respiratory tract from nose to the larynx

These include infections of the nose, **SINUSES**, pharynx and larynx.

The following are the variations:

- Rhinitis

- **SINUSITIS**
- Nasopharyngitis
- Pharyngitis
- Epiglottitis
- Tracheitis/Laryngotracheitis

Treatment: No medical treatment required

Sinusitis:

Inflammation and/or infection of the paranasal sinuses is sinusitis.

Can be acute or chronic.

The etiology could be allergic or infectious.

Types of sinusitis:

- Maxillary sinusitis

- Frontal sinusitis

- Sphenoidal sinusitis

- Ethmoidal sinusitis

Signs & symptoms:

- Headache, facial pain

- Pain worsens on bending forward

- There may be thick/purulent nasal discharge

- Halitosis

- Postnasal drip

Diagnosis & treatment

CT scan is the investigation of choice.

Non-medical treatment with steam inhalation and gargling

Medical treatment

- decongestants (oxymetazoline/ Xylometazoline)

- antibiotics if bacterial infection

ASTHMA

Asthma is a chronic allergic inflammatory hypersensitivity type 1 disease characterised by paroxysmal and reversible obstruction of the airways.

It is increasingly understood as an inflammatory condition combined with bronchial hyper-responsiveness giving rise to wheeze, dry cough and shortness of breath

Signs & symptoms:

Intermittent expiratory wheeze, cough, shortness of breath

Mediated by IgE, mast cells and basophils

Increased mucous secretion and laryngeal oedema

Precipitated by cold air exposure /allergens & with exercise

Types:

- Acute severe asthma
- Chronic asthma

Acute exacebation of Asthma

1). Mild - Moderate Exacerbation of Asthma usually presents with wheeze,cough and shortness of breath.

2). Severe asthma:

Inability to complete sentences in 1 breath

HR >110/min

RR >25/min

3). Life threatening Asthma

RR <8/min

HR <50/min

Cyanosis

Exhaustion, confusion, decreased level of conscious levels.

Diagnosis & treatment:

Assess **ABC**

Sit-up position

Airway- If patient is talking then airway is patent

Oxygen 15L/min - high flow via a non-rebreathing mask

Salbutamol up to 10 inhaler activations

Repeat salbutamol

If no improvement/ severe symptoms- CALL AMBULANCE & keep monitoring

NSAIDs, aspirin, beta blockers are contraindicated.

For those who have asthma with bronchitis, systemic steroids and hospitalisation

COPD (Chronic obstructive pulmonary disease):

It is a common progressive disorder characterized by airway obstruction which is partially reversible & it includes

2 Types:

- Chronic bronchitis
- Emphysema

Signs & Symptoms:

Chronic bronchitis	**Emphysema**
Clinically smoker	Histologically enlarged air spaces distal to terminal bronchioles & alveoli coalesce.
Blue bloaters	Pink puffers
Cough, sputum on most days > 3 months of 2 successive years	

Smokers- passive/ active	Smoker/non smoker
Wheeze	Wheeze

Investigation

CXR which shows hyperinflation and flat hemi-diaphragm

Management

Advise smoking cessation

Mucolytics - To clear sputum

Bronchodilator -Short acting B2 agonist e.g Salbutamol

Long acting B2 agonist e.g Salmeterol

Steroids (Beclomethasone or oral prednisolone)

Long term Oxygen Therapy (LTOT)

PNEUMOCONIOSIS

The term 'pneumoconiosis' refers to a group of lung diseases caused by the inhalation and retention of dust in the lung.

This causes a range of granulomatous and fibrotic changes.

SILICOSIS

Caused by inhalation of silica particles

Occupational exposure:

- Metal mining
- Stone quarrying
- Sand blasting
- Pottery/ceramic

Signs & symptoms:

Progressive dyspnea due to progressive fibrosis of lung

Egg-shell calcifications on CXR

Avoid exposure to silica further

FEV1/FVC: normal or increased. As it is restrictive lung disease.

OBSTRUCTIVE VERSUS RESTRICTIVE PATTERN

Character	Obstructive lung disease	Restrictive lung disease
Conditions	• chronic bronchitis • emphysema	• lung fibrosis • all pneumoconiosis like silicosis asbestosis
FEV1/FVC	decreased	normal/increased

CARDIOVASCULAR SYSTEM

ACUTE CORONARY SYNDROME (ACS)

ACS includes Unstable angina, ST Elevation Myocardial infarction (STEMI) and Non ST elevation Myocardial infarction (NSTEMI)

Signs & symptoms:

Crushing central chest pain, radiating to the left arm or throat

Nausea and vomiting

Shortness of breath

Fast & slow heart rates

Increased respiratory rate

Low blood pressure

Management:

First stop treatment

Put in Sit up position & reassure

Check ABC

High flow oxygen 15/min via non breathing bag

Sub-lingual 0.4 mg GTN

Dispersible Aspirin 300mg chewed or dissolved (If MI is suspected)

Repeat GTN

Monitor & call 999

HEART FAILURE

Heart failure occurs when the heart is unable to pump sufficiently to maintain blood flow to meet the needs of the body. i.e. the Cardiac output and BP are inadequate for the body's requirement.

There are two types of Heart failure

1) Left heart failure: Signs & symptoms:

Shortness of breath in supine position

Patient prefers propped up position: sleeps over 3-4 pillows

Shortness of breath on exertion.

Awake from sleep with a coughing bout

Right heart failure: Signs & Symptoms:

Swelling in the legs

Liver enlargement

Ascites

Swellings in the ankles

Investigations:

CXR (Chest X-Ray)

Echocardiography

ENDOCRINOLOGY

DIABETES MELLITUS

It is a clinical condition where there is deficiency of Insulin secreted by the pancreas or there is diminished effectiveness of the Insulin.

- Types of Diabetes Mellitus

  - Type I: Insulin Dependent Diabetes Mellitus (IDDM)
  - Type II: (NIDDM) Non Insulin Dependent Diabetes Mellitus.

Diagnosis of diabetes:

Fasting plasma glucose > 7 mmol/l

Random plasma glucose > 11.1 mmol/l

character	IDDM	NIDDM
AGE OF ONSET	Children/adolescent	Older patients
INSULIN DEPENDENCE	Strictly insulin dependent	Initially not dependent on insulin
ASSOCIATED WITH	Weight loss	Mostly associated with weight gain
COMPLICATIONS	Diabetic ketoacidosis (DKA)	Hyperosmolar non ketotic coma (HONK)
TREATMENT	Insulin	Oral medication: metformin and glitazone Later on insulin

DIABETES INSIPIDUS

This is the passage of large volumes (>3L/ day) of dilute urine due to impaired water reabsorption by the kidney, because of reduced ADH secretion from the hypothalamus (cranial DI), or impaired response of the kidney to ADH (nephrogenic DI).

Types:

Central DI (hypothalamus) ⇒ deficiency of ADH (anti-diuretic hormone)

Nephrogenic DI (kidney) - impaired response of the kidney to ADH

Signs & symptoms:

Polyuria

Polydypsia

Dehydration

Diagnosis & treatment:

Cranial DI : Desmopressin

Nephrogenic DI: Bendroflumethiazide

CUSHING'S SYNDROME:

It is a clinical condition with chronic corticosteroid excess either from the adrenal gland or ectopic ACTH production or ACTH production from the pituitary gland.

Also can be due to prolonged usage of steroid. When there is excess ACTH production from the pituitary gland then it is known as Cushing's disease.

Signs & symptoms:

Weight gain, moon face

Weakness

Buffalo hump

Purple abdominal striae

High plasma cortisol

Diagnosis & treatment:

Gradually stop the steroid treatment

Selective surgical removal of the source of the hormone.

THYROID DISORDERS

HYPOTHYROIDISM:

It is a clinical condition of thyroid hormone deficiency.

Note: In hypothyroidism all are lowered except menstruation (excess bleeding in menstruation)

Note: In hyperthyroidism all are increased except menstruation (hypo-amenorrhoea)

DIFFERENCES BETWEEN HYPO AND HYPERTHYROIDISM

character	hypothyroidism	hyperthyroidism
Thyroid hormone	deficiency	excess
Weight	• Gain • Round puffy face • Double chin obese	• Loss
Heart rate	Reduced (bradycardia)	Increased (tachycardia)
Bowels	constipation	diarrhoea
Reflexes	Reflexes react slowly	hyperreflexia
Temperature preference	• Cold intolerant • Prefer warm rooms & weather	• Heat intolerant • Prefer cold rooms & weather
Eye signs	Not seen	• Exophthalmos • Eye lids lag behind.
Menstrual cycle	Excess bleeding (menorrhagia)	Hypo-amenorrhoea
Skin	Cold hands, dry	Moist and warm hands
Treatment	Thyroxine supplementation	• Anti-thyroid medication

		(propyl thiouracil, carbimazole) • Radioiodine ablation • Thyroidectomy

GROWTH HORMONE DISORDERS

ACROMEGALY

Acromegaly is due to excess secretion of Growth hormone (GH) from a pituitary

tumor in >99% of cases,

and is rarely associated with ectopic production of GH-releasing hormone eg from a carcinoid tumor.

Signs & symptoms:

Increase in growth of hands, jaw & feet.

Coarse facial features, wide nose

Macroglossia

Widely spaced teeth

Obstructive sleep apnoea

Deep burrows on the tongue

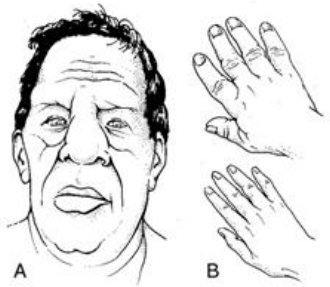
Increased shoe and ring size

Diagnosis & treatment:

MRI of pituitary fossa

Trans-sphenoidal surgery

Picture of gigantism & acromegaly:









ADDISON’S DISEASE

Adrenal insufficiency leads to a reduction in the output of adrenal hormones, ie glucocorticoids and/or mineralocorticoids.

There are two types of adrenal insufficiency:

- Primary insufficiency - there is an inability of the adrenal glands to produce enough steroid hormones (Addison's disease is the name given to the autoimmune cause of this insufficiency).

  Other causes:

  T.B

  Metastasis

  Glucocorticoid and often mineralocorticoid hormones are lost.

- Secondary insufficiency - there is inadequate pituitary or hypothalamic stimulation of the adrenal glands

Signs & symptoms:

Postural hypotension

Collapse due to hypotension

Tanned, tired

High Potassium(Hyperkalemia)

Flu-like myalgias and arthralgias

Pigmented palmar creases

Diagnosis & treatment:

low Na+, high K+ due to mineralocorticoid deficiency

low glucose due to cortisol deficiency (Addison crisis)

Treatment:

steroids/ hydrocortisone

RHEUMATOLOGY

RHEUMATOID ARTHRITIS

Rheumatoid arthritis (RA) is a common chronic inflammatory autoimmune disease characterised by an inflammation of the synovial joints

There is increased morning stiffness which improves by the end of the day leading to joint and periarticular tissue destruction, as well as a wide variety of extra-articular features. It usually affects small joints.

Female:male ratio is 2:1

Articular Features

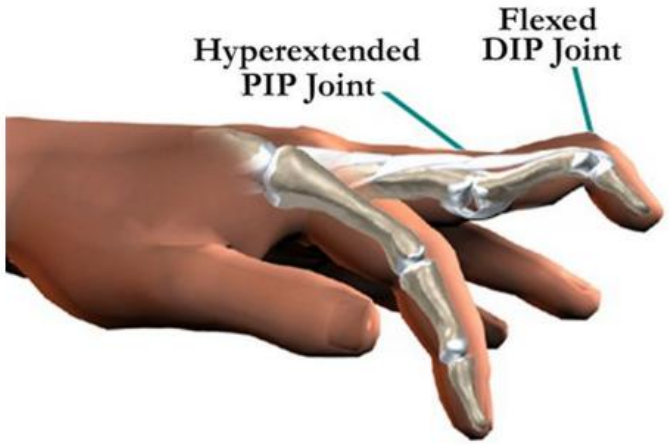
1. Painful swollen hands and feet especially small joints but larger joints can also be involved
2. Ulnar deviation
3. Dorsal wrist subluxation
4. Swan neck deformity
5. Boutonniere deformity
6. Z-deformity of the thumb
7. Wasting of intrinsic muscles and accentuation of extensor tendon
8. Most difficulty in brushing the teeth

Ulnar Deviation

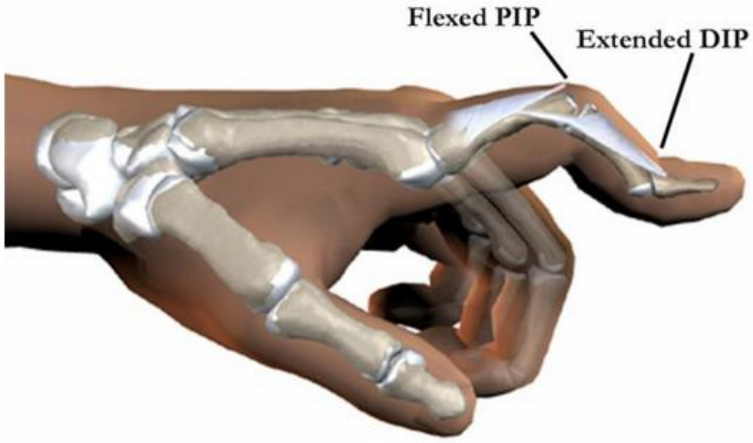




SWAN NECK DEFORMITY



Boutonniere Deformity



Extra-Articular features

1. Anemia of chronic disease
2. Vasculitis
3. Episcleritis, scleritis, keratoconjunctivitis sicca
4. Pleurisy & pericarditis
5. Pulmonary fibrosis

Investigations

1. X- ray will show increased soft tissue swelling, decreased joint space, bony erosions in the late stages, with or without subluxation

2. Blood test - increased ESR, CRP & platelets, decreased Hb, WCC.

3. Rheumatoid factor is +ve in 70%

4. ANA is +ve in 30 %

5. Anti-CCP (anti-citrullinated protein antibody) is more specific than rheumatoid factor

Treatment of Rheumatoid Arthritis:

1. Physiotherapy

2. Intra-articular steroid

3. Surgery to relieve increased pain (joint replacement)

4. Oral drugs: NSAIDS (avoid on Warfarin)

5. Oral steroid with proton pump inhibitor for gastric protection

6. Disease Modifying Drugs (Sulfasalazine, Methotrexate, Gold, Cyclosporine, Azathioprine, Penicillamine, Hydroxychloroquine)

OSTEOARTHRITIS

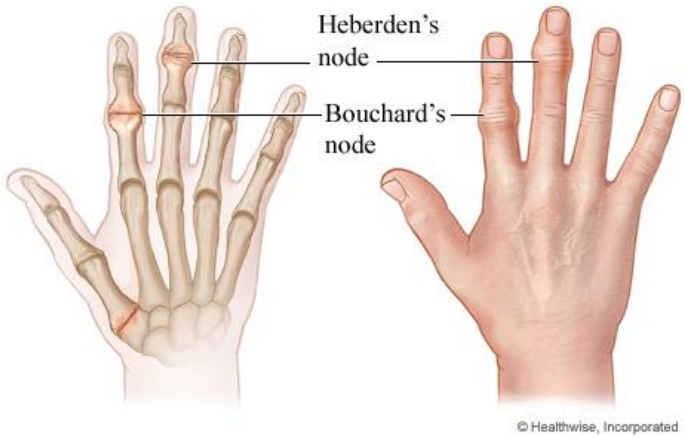
Osteoarthritis (OA) is a clinical syndrome of joint pain accompanied by varying degrees of functional limitation and reduced quality of life.

It is the most common form of arthritis, and one of the leading causes of pain and disability worldwide.

- Female:male ratio is 3:1 - usually >50 years
- Also called degenerative joint disease (DJD)
- Progressive cartilage destruction
- Weight bearing joints like Hip and Knee joints.
- Usually affects big joints, joint pain is worse by the end of the day, it usually affects one joint (monoarthritis) e.g Knee, Hip

Signs & symptoms:

- Single joint usually affected, with pain on movement
- Worsening by the end of the day accompanied by stiffness and joint instability
- **Bouchard's nodes.** PIP (proximal interphalangeal joints)
- **Heberden's nodes.** DIP (distal interphalangeal joints)



Diagnosis

- X-ray will show subchondral sclerosis, joint space narrowing, bone cysts and marginal osteophytes

Treatment:

- Do exercise and keep active and physiotherapy
- Regular paracetamol + topical NSAIDS

- Intra-articular joint steroids
- Weight reduction
- Physiotherapy and walking aids

Joint replacement in end stage osteoarthritis

SLE: systemic lupus erythematosus

Systemic lupus erythematosus (SLE) is a chronic inflammatory disease that has protein manifestations and follows a relapsing and remitting course.

More than 90% of cases of SLE occur in women, frequently starting at childbearing age.

Female:male ratio is 9:1

Seen usually in pregnancy, in Afro-Caribbeans and Asians around the age of 30-40, associated with HLA-B8, DR2, DR3, has remitting & relapsing course

Signs & symptoms:

Malar rash/ discoid rash/ butterfly rash

Photosensitivity, oral ulcers

Arthritis

Kidney: proteinuria

Anemia

Diagnosis

Anti-smith antibodies positive 20-30 %

Anti nuclear antibodies positive 95%

Anti- Ds- DNA antibodies are very specific for SLE

Treatment

Refer to rheumatologist

NSAIDS

Suncreams

Steroids

Immunosuppressants

SCLERODERMA

Systemic sclerosis (SSc) is a multisystem autoimmune disease in which there is increased fibroblast activity resulting in abnormal growth of connective tissue.

This causes vascular damage and fibrosis. Fibrosis occurs in skin, the gastrointestinal (GI) tract and other internal organs.

Types:

Limited cutaneous systemic sclerosis/ limited scleroderma (LcSS)

Diffuse cutaneous systemic sclerosis (dcSS)

Limited systemic sclerosis	**Diffuse systemic sclerosis**
Affects face, forearms & lower legs up to the knee CREST syndrome **C**alnicosis **R**aynaud's syndrome **E**sophageal dysmotility **S**clerodactyly **T**elangiectasia	Also involves skin Usually a more rapid onset, with skin thickening and Raynaud's phenomenon occurring together or within a short interval
• Generally a milder disease, with less skin involvement, slow onset and slow progression.	• Skin changes can remit after several years, with softening of the skin and significant improvement in mobility.
• The slow onset may mean that symptoms are relatively unnoticed until internal complications occur.	• Internal organ involvement is more common.



Diagnosis

- Anti-centromere antibody (ACA) - seen almost only in patients with lcSSc, and is associated with increased risk of pulmonary hypertension

- Anti-topoisomerase/Anti-Scl70 - associated with dcSSc and especially with kidney involvement.

Treatment

1. Cyclophosphamide
2. Oral steroids e.g. prednisolone
3. Nifedipine for Raynauds phenomenon

SJOGREN'S SYNDROME:

There is lymphocytic infiltration of exocrine glands, producing the main symptoms of xerophthalmia (dry eyes), xerostomia (dry mouth) and enlargement of the parotid glands.

The disease is called primary if it develops in isolation and secondary if it occurs with other autoimmune diseases - usually Rheumatoid Arthritis, SLE or Scleroderma.

Signs & symptoms:

- Dry eyes due to decreased tear production
- Keratoconjunctivitis sicca
- Decreased salivation.

GIANT CELL ARTERITIS/ TEMPORAL ARTERITIS

Giant cell arteritis (GCA) is a systemic immune-mediated vasculitis affecting medium-sized and large-sized arteries, particularly the aorta and its extra cranial branches.

Signs & symptoms:

1. Common in elderly or Adult > 50 years
2. Unilateral headache worse when the patient combs hair & chewing
3. Weight loss
4. Temporal artery and scalp tenderness
5. Jaw claudication

6. Sudden loss of vision (usually irreversible)

Diagnosis

- Initial = ESR
- ESR is increased and then do -
- Temporal Artery Biopsy

Treatment

IV methylprednisolone for 2-3 days to prevent blindness and then arrange temporal artery biopsy.

TREAT ASAP and not wait for temporal artery biopsy. If not treated patient may lose the other eye

Once diagnosis of giant cell arteritis has been confirmed start patient on long term high dose oral prednisolone for 2-3 years.

INFECTIOUS DISEASES

COMMUNICABLE DISEASES TO BE INFORMED

Mainly HIV, Hepatitis, Tuberculosis, Syphilis should be informed along with the following list.

NOTIFIABLE DISEASES

Box 21.2 Notifiable diseases

- Anthrax
- Cholera
- Diphtheria
- Dysentery
- Encephalitis
- Food poisoning
- Haemorrhagic fever
- Hepatitis
- Leprosy
- Leptospirosis
- Malaria
- Measles
- Meningitis
- Meningococcal septicaemia
- Mumps
- Ophthalmia neonatorum
- Paratyphoid
- Plague
- Poliomyelitis
- Rabies
- Relapsing fever
- Rubella
- Scarlet fever
- Smallpox
- Tetanus
- Tuberculosis
- Typhoid
- Typhus
- Whooping cough
- Yellow fever

RHEUMATIC FEVER

Rheumatic fever is an inflammatory disease that may develop after an infection with group A *Streptococcus* bacteria (such as Strep throat or Scarlet fever). The disease can affect the heart, joints, skin, and brain.

Signs & symptoms:

- A sore throat --followed after about 3 weeks --acute febrile illness
- With pain flirting from one joint to another (migratory arthralgia)
- Pain in the large joints, but heals without permanent damage in about 3 weeks.
- Cerebral involvement → involuntary movements (Sydenham chorea, St Vitus dance)
- Characteristic rash (erythema marginatum);
- Lung involvement and subcutaneous nodules (usually around the elbows).

Diagnosis & treatment:

Diagnostic criteria

Major	Minor
Carditis	Pyrexia
Polyarthritis	Arthralgia
Chorea	Previous rheumatic fever
Erythema marginatum	ESR & CRP rise
Subcutaneous nodules	Characterictic ECG changes

TUBERCULOSIS

Tuberculosis is a chronic bacterial infection caused by Mycobacterial tuberculosis. Most commonly seen in tropical countries. (Asian, African, Afro-Caribbean)

Immune-compromised individuals (people on chemotherapy. Immunosuppressive agents & HIV affected patients) are easily prone to this condition

Signs & symptoms:

Chronic cough >3 weeks
Weight loss
Night sweats
Fever (evening rise in temperature)

The main differential diagnosis is Lymphoma

History of tuberculosis
Travel to countries where TB is prevalent (Southeast Asia and Africa)
Conditions where tuberculosis is reactivated: (immunocompromised)

Recent infection/ young age

HIV or immunosuppression

Alcohol or drug abuse

Cancer

Chronic kidney disease

Diabetes

Gastric bypass/ gastrectomy

Leukemia

silicosis

Anti-TNF alpha drugs

Diagnosis & treatment:

ATT (anti tubercular treatment)

Table 15.11 Antitubercular therapy		
Drug	Use	Main adverse effects

Ethambutol[a]	Initial therapy[b]	Ocular damage
Isoniazid	Initial therapy[b]	Peripheral neuropathy Hepatotoxicity
	Continuation therapy[c]	Hepatotoxicity
Pyrazinamide	Initial therapy[b]	
Rifampicin	Initial therapy[b] Continuation therapy[c]	Enhanced liver P450 drug-metabolizing enzymes Urine and saliva turn red Bullous lesions Hepatotoxicity Nephrotoxicity
Streptomycin[a]	Initial therapy[b]	Vestibular nerve damage Circumoral paraesthesiae

SARCOIDOSIS:

This is a granulomatous condition in which there is lip swelling, gingival and palatal nodules.

Treatment is steroid.

It is primarily a lung disease which is characterised by shortness and erythema nodosum on the shin.

X-ray will show bilateral hilar lymphadenopathy.

INFECTIVE ENDOCARDITIS :

Infective endocarditis (IE) is an infection of the endocardium of the heart.

Streptococcus viridans is the most common cause (in the UK).

The other causes are staph aureus/epidermidis. HACEK organisms

H-Haemophilus

A-Actinobacillus

C- Cardiobacterium

E-Eikenella

K-Kingella

Most frequent sites of endocarditis:

1. Mitral valve

2. Aortic root

Signs & symptoms:

Duke's criteria are the diagnostic criteria for Infective endocarditis:
2 major OR 1 major + 3 minor OR 5 minor.

Major Criteria
Positive blood cultures Typical pathogens from at least two separate cultures
Evidence of endocardial involvement by echocardiography Endocardial vegetation, perivalvular abscess, new partial dehiscence of prosthetic valve, new vavular regurgitation

Minor Criteria	
Predisposition Heart condition or IV drug use	**Fever** Greater than or equal to 38°C
Microbiologic evidence Single positive blood culture (except for coagulase-negative staphylococcus or an organism that does not cause endocarditis)	**Vascular phenomena** Arterial emboli, mycotic aneurysm, septic pulmonary infarcts, conjunctival hemorrhages, Janeway lesions
Echocardiographic findings Consistent with endocarditis, but does not meet major criteria	

Septic signs (fever, rigors, malaise)

Splinter haemorrhages (nail beds)

Roth spots (retinal haemorrhages)

Osler's nodes (painful nodes on finger tips)

Janeway lesions (painless palmar lesions)

Box 5.11 Patients at highest risk from infective endocarditis

- Prosthetic valves
- Previous infective endocarditis
- Complex cyanotic congenital heart disease – e.g. tetralogy of Fallot, TGA (transposition of great arteries) or Gerbode defect
- Surgically constructed systemic–pulmonary shunts or conduits
- Mitral valve prolapse with regurgitation or thickened leaflets

INFECTIOUS MONONUCLEOSIS:

Epstein–Barr virus (EBV) causes infectious mononucleosis

(IM; classic **glandular fever**).

Pfeiffer's disease in young adults

Transmission is basically via saliva

EBV also has epidemiological associations with

- **Burkitt's lymphoma**
- nasopharyngeal carcinoma
- sialadenitis in immunocompromised patients
- hairy leukoplakia

Signs & symptoms:

- in young adults
- Flu like symptoms, malaise
- Intra oral lesions
- Sore throat

- Posterior cervical lymphadenopathy
- Splenomegaly

Diagnosis & management:

- Serological - heterophile antibody test **--Paul–Bunnell test**
- Heterophile antibodies are IgM antibodies that agglutinate sheep and horse red blood cells.
- The Paul–Bunnell test uses sheep erythrocytes but more rapid methods are available to detect heterophile antibodies to horse red blood cells by detecting agglutination on a glass slide**--Monospot test.**
- Rash appears when treated with amoxicillin or ampicillin

SYPHILIS

Caused by the spirochete bacterium called – Treponema palladium.
It is a sexually transmitted disease. It has 4 stages.

Signs & symptoms:

1. PRIMARY SYPHILIS: hard painless ulcer on the genital organs (chancre)

   a. Firm painless ulcerated nodule at site of inoculation: lip/tongue

   b. Highly infectious

   c. Treponema can be easily isolated

2. SECONDARY SYPHILIS: 6 weeks-6 months from stage 1

   a. Rash on oral mucosa- superficial grey, sloughy - **mucous patches/ snail-track marks- highly contagious**

   b. Also on trunk, face, **palms & soles.**

   c. Lymphadenopathy

   d. Treponema can be easily isolated

   e. Condylomata lata (flat papules around genitalia)

3. TERTIARY SYPHILIS: > 2yrs Gummas

a. Necrotic granulomatous reaction- palate/ tongue

b. Lesions are non infectious

c. Syphilitic leukoplakia classical in this stage

4. QUATERNARY SYPHILIS: Vascular/ neurological lesions

5. Congenital Syphilis: due to vertical transmission

a. Saddle nose

b. Frontal bossing

c. Hutchinson incisors (peg-shaped with notch)

d. Mulberry molars (moon)





NOTE: Syphilis is not seen in developed countries but still prevailing in developing & underdeveloped countries (ASIA)

Diagnosis & treatment:

Syphilis serology or dark field microscopy

IM Benzylpenicillin or doxycycline

HAEMATOLOGY

RBC:

Anemia- Low hemoglobin concentration

Low RBC count

Low Hb

Men <13.5 g/l

Women <11.5 g/l

Anemia could be because of:

a. destruction of RBC e.g Haemolytic anemia

b. reduced production of RBC e.g Aplastic anemia

CLASSIFICATION

Microcytic anemia	Normocytic anemia	Macrocytic anemia
Causes: • Iron deficiency • Thalassemia • sideroblastic . Sickle cell anaemia	• acute blood loss • Anemia of chronic disease (RA, hypothyroidism) • Renal failure	• B12 deficiency • Folate deficiency • Alcohol excess • Antifolate drugs (phenytoin)

Low MCV < 76 fl	Normal MCV (76-96 fl)	High > 96 fl
In iron deficiency anemia • Ferritin levels:low • TIBC high • Koilonychia	Koilonychia + ulnar deviation = RA	

Sickle cell disease is an inherited condition that affects the blood causing episodes of sickling of the red cells.

It is common in Afro-caribbean people

Sickle cell disease causes microcytic anaemia.

Investigation:

Sickling test

Hb Electrophoresis

WBC

Leukemia: This is a malignancy of blood.

Leukaemia can either be myeloid (myeloblastic) or lymphoid (lymphoblastic for acute)

QUICK TIP:

Acute Leukemia common in children and adults less than 40 years

Blast cells (lymphoblast cells, myeloblast cells)

Chronic - old (middle & elderly) usually more than 40 years of age

Matured cell (myelocytes & lymphocytes)

General Symptoms

Anaemia

Coagulopathy

Infections

ALL (Acute lymphoblastic leukemia)

Most commonly affects young children <9 years

Can occur in other ages but rare

Worst prognosis in other age group

Signs and Symptoms

- Anaemic symptoms - fatigue, dizziness

- Bone pains
- Unexplained fever
- Menorrhagia, Epistaxis, unexplained bruising
- Gum hypertrophy
- Testicular swelling

Treatment

- Chemotherapy (cytotoxic drugs)
- Bone marrow transplantation if chemo fails

AML (Acute myeloblastic leukemia)

Most common adult leukemia

Gingival hyperplasia

CML- Chronic myeloid leukemia

Proliferation of myeloid cell line

>40 years age group

Philadelphia chromosome 9:22

Signs and Symptoms

- Anaemic symptoms - fatigue, dizziness
- Night sweats
- Weight loss
- Abdominal pain (LUQ) pain

CLL- Chronic lymphocytic leukemia

Men > women

Elderly

Signs and Symptoms

- Anaemic symptoms - fatigue, dizziness
- Lymphadenopathy
- Liver enlargement
- Splenic enlargement
- Bleeding

Treatment

- Radiotherapy
- Chemotherapy

Prognosis better than ALL

Lymphoma: HL & NHL

Hodgkin's lymphoma & Non Hodgkins lymphoma.

They are malignant proliferation of lymphocytes.

They accumulate in lymph nodes causing lymphadenopathy and also circulate in peripheral blood & infiltrate different organs.

Hodgkin's lymphoma:

Lymph nodes are

- Enlarged
- Painless non tender
- Rubbery
- Cervical (70%) or inguinal & axillary lymph nodes are involved

Signs & symptoms:

- Cachexia

- Anemia
- Hepato-splenomegaly

- **Diagnosis & treatment:**
  - Lymph node biopsy- histopathology: **reed sternberg cell**
  - Chemo / Radiotherapy

Non-Hodkin's lymphoma

- All other lymphomas without reed sternberg cells on histopathology
- Extra nodal involvement is seen like Gut, small bowel.
- The lymph nodes involvement is not contiguous
- Treatment depends on the involvement. It carries a poorer prognosis as compared to hodgkin's lymphoma

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Multiple myeloma

It is a plasma cell dyscrasia where plasma cells of single clone proliferate leading to secretion of Ig (immunoglobulins) IgG-50%, IgA-25%

- This immunoglobulin (Ig) is accumulated in different organs esp kidney.
- On serum electrophoresis it is seen as M band (monoclonal band)
- Osteolytic bone lesions.
  - malignant cells release factors
  - which activate the bone destruction process
  - hypercalcaemia
  - punched out lesions
  - **Amyloid deposition on oral soft tissue- macroglossia**

Signs & symptoms:

- Osteolytic bone lesions
- Anemia (pallor, malaise)
- Neutropenia (recurrent infections)
- Thrombocytopenia (petechial haemorrhages)
- Kidney impairment (due to light chain of Ig(monoclonal antibody) deposition)

Diagnosis & treatment:

- FBC
- High ESR
- Serum & urine electrophoresis
- Urine BJP (bence jones protein)
- Chemotherapy, corticosteroids.
- Addition of bisphosphonates

CLOTTING FACTORS

Haemophilia type A & B

Character	Haemophilia A	Haemophilia B
Clotting factor deficiency	FACTOR VIII	FACTOR IX
Mode of inheritance	X linked recessive	X linked recessive
Incidence	80% of haemophilias	20 % of haemophilias

Normal Platelet count: 150 - 400 x 10^9/L

- **Minimum platelet count required for tooth extraction: 50 x 10^9** /L

Blood transfusion:

Indication in anemia: If there is more than 20% of blood loss then blood transfusion should be considered/done

Idiopathic thrombocytopenic purpura (ITP): This is an idiopathic (autoimmune disease) in which the number of platelets is reduced (thrombocytopenia).

It usually follows upper respiratory tract infection (viral) in children. ITP is common in children.

The common symptom is nose bleeds. It may also present with bruises and purport. In adult ITP does not present after URTI.

Investigation:

Full blood count or platelet count.

Treatment: Steroid (medication)

GASTROINTESTINAL SYSTEM

GORD: Gastro-oesophageal reflux disease

GORD is a common condition where reflux of stomach contents >2 heartburn episodes/week. If reflux is prolonged it can lead to oesophagitis.

Signs & symptoms:

- Heart burn
- Discomfort after meals
- Increase in pain after lying, stooping, straining, bending downwards, relieved by antacid

Diagnosis & treatment:

- Clinical history and endoscopy
- Antacids
- Proton Pump Inhibitors (PPI) e.g Omeprazole, Lansoprazole

HIATUS HERNIA:

- It is herniation or protrusion of the upper portion of stomach into the thorax through tear/weakness in diaphragm

Hiatus Hernia



Normal *Sliding hiatus hernia* *Paraesophageal hiatus hernia*

- **Dentist Presentation**

The symptoms usually mimic heartburn and chest tightness or GORD depending on the type and extent.

- Simple antacids or PPI (omeprazole. lansoprazole)
- Surgery if required

PYLORIC STENOSIS

This is a congenital abnormality in which there is a stenosis of the pyloric outlet of the stomach.

This condition is characterised by hypertrophy of the muscles of the antrum of the stomach.

The main symptom is vomiting . It is usually diagnosed at the age of 6 weeks. The child is usually hungry.

Investigations:

Ultrasound Scan

Treatment: Pyloric Surgery

CELIAC DISEASE: Inflammation of small bowel in reaction to gluten

- An autoimmune disease
- Genetic predisposition
- Antibodies against gluten protein found in wheat, barley and rye
- Affects small bowel causing,
  - failure to thrive,
  - anemia,
  - diarrhoea or constipation
  - malnutrition, weight loss
  - vitamin & other deficiencies- megaloblastic anaemia
    - B12, and other B complex deficiency
    - folate,
    - calcium

- vitamin D
- Vit K

- IgA deficiency owing to more respiratory & GI infections

- Dermatitis herpetiformis

- **Diagnosis:** Anti-gliadin antibodies on serology

- **Treatment:**

G Gluten- free diet

- Avoidance of wheat and barley containing products
- Encourage Gluten free diet

COLONIC POLYPS:

- Mucosal/ fleshy growth of the lining of the colonic wall
- Single/ multiple
- Benign/ malignant

- **Clinical features:**
  - **Peutz-Jegher's syndrome:** child (9 yrs) presents with pigmentation on lip, buccal mucosa
    - Also on hands, feet, genitalia
    - Muliple polyps in GI tract

- **Diagnosis & treatment:**
  - Fecal occult blood test
  - Flexible sigmoidoscopy/ colonoscopy
  - Surgical intervention is required

INFLAMMATORY BOWEL DISEASE (IBD)

IBD INCLUDES CROHN'S DISEASE AND ULCERATIVE COLITIS (UC).

Crohn's disease is an inflammatory disease of any part of GIT characterised by granulomatous and transmural inflammation.

Presentation:

-Chronic diarrhoea 80%

-Abdominal pain, weight loss(70%), fever

-Rectal bleeding 50%

Extra-intestinal manifestation:

- Aphthous ulceration(20%) : More common in Crohn's disease than ulcerative colitis

- Erythema nodosum(5%)

- Acute arthropathy(8%)

- Eye complications(5%) like conjunctivitis, uveitis

- Pyoderma gangrenosum

Examination:

Nutritional status and for evidence of malabsorption. Examine for evidence of intestinal obstruction.

Ulcerative Colitis is a chronic inflammatory disease of the colon of unknown etiology. It always affects the rectum and extends proximally to variable extent of colon. Per rectal bleeding is more common in Ulcerative Colitis

Presentation:

- Gradual onset of progressively more severe symptoms.

- Diarrhoea is dependant on disease activity and extent. Mucus, pus or blood mixed in with stool.

- Occasional abdominal pain.

Extra-Intestinal manifestation

-Aphthous ulcers(Ask about recent cessation of smoking)

-Erythema nodosum

-Peripheral arthropathy

NERVOUS SYSTEM

FACIAL PAIN: The commonest source of pain in jaw and face is tooth pulp.
The following are the causes of facial pain which are not related to the teeth & jaws.

The most common neurological facial pain is Trigeminal neuralgia

Other next common causes of facial pain are glossopharyngeal neuralgia, Temporal arteritis, migraine, glaucoma, etc.

TRIGEMINAL NEURALGIA:

Age: >50

- **Sex: female >** male
- **Clinical features**: Shooting electric shock like pain
  - Rapid onset
  - Affects one side of face in trigeminal distribution
  - Patient may refuse to shave/wash the area as it stimulates the pain
- **Diagnosis**: clinical history + pain decreases on injection of LA

- **Treatment:** Carbamazepine (Anti-Epileptic medication)
  - For intractable cases:
    - radiofrequency ganglionolysis
    - Decompression of trigeminal nerve intracranially

TEMPORAL ARTERITIS/ GIANT CELL ARTERITIS: Refer to Rheumatology

ATYPICAL FACIAL PAIN:

70% of middle-aged women come with atypical facial pain.

- Classically their symptoms are unrelated to nerve distribution & no known pathology
- May be psychiatric history/ undiagnosed depression
- 50% are depressed or hypochondriacal
- Alternatively patient may be simply overreacting to minor discomfort
- Pain is described grossly and in a bizarre way
- Sleeping and eating are not affected
- **Diagnosis:** all investigation normal
  - Diagnosis of exclusion

- **Treatment:** antidepressant- dosulepin

DEMENTIA:

Progression decline in cognition and memory. Memory loss is the main feature. The commonest cause of dementia in the UK is Alzheimer's disease.

RAMSY HUNT SYNDROME:

This is a 7th nerve palsy secondary to herpes zoster virus. It is marked by vesicles in the ear.

Treatment: Acyclovir oral tablets

BELL'S PALSY:

Is an idiopathic cranial nerve 7 palsy characterised by temporary facial muscle weakness which resolved after few months.

It commonly occurs after a viral illness (Simple Cold)

Treatment: Steroids - prednisolone.

MIGRAINE:

An intense unilateral pulsatile headache usually in young female associated with nausea and vomiting.

May present with visual aura (any type of visual loss) or sensory aura in form of tingling and numbness in the hand.

It is more common in females.

It is precipitated by combined oral contraceptive pills (COCP).

Acute: High dose aspirin

Prophylaxis:1. Beta blockers like propranolol
2. Amitriptylline

TENSION HEADACHE:

This presents as band-like headache, associated with stress and usually worse as the day progresses.

It is a very common cause of headache.

Treatment: Treat with Analgesia e.g aspirin, paracetamol.

CLUSTER HEADACHE:

This is unilateral headache which radiates to the forehead, common in men. usually causes a red eye and discharge from the eye.

Usually occurs in the early morning.

It occurs in clusters (periods) i.e. few months of headache and then few months of no headaches.

It may be precipitated by alcohol.

Treatment: Sumatriptan

PSYCHIATRY

DEPRESSION:

Depression refers to both negative affect (low mood) and/or absence of positive affect (loss of interest and pleasure in most activities) and is usually accompanied by an assortment of emotional, cognitive, physical and behavioural symptoms
Can be neurotic or psychotic.

Classification:

Mild, moderate and severe depression.
In severe depression the patient can present with

Anhedonia (loss of pleasure in event which were previously enjoyed)

- Anorexia weight loss
- Tearfulness
- Loss of concentration
- Guilt
- Suicidal ideas

Early morning wakening: Treatment : TCA - Amitriptylline

Poor sleep (Insomnia)

Loss of appetite

Low energy

Memory loss

Treatment:

Anti-depressant: i) SSRI - Fluoxetine
Citalopram
Paroxetine

PHOBIA: generation of fear or anxiety out of proportion to the stimulus.

The following are the numerous stimuli

- **Social:** fear of other people or social situations.

- **Specific:** fear of spiders, heights, water, snakes etc.

- **Agoraphobia:** fear of an open space, leaving home or other specific safe areas e.g fear of market place.

- **Claustrophobia:** fear of closed spaces e.g lifts, MRI Scan.

- **Arachnophobia-** This is a fear of spiders.

SCHIZOPHRENIA:

A disorder where the victims live in an incomprehensible world full of vivid personal significance.

It is a common chronic/relapsing condition often presenting in late teens/early adulthood with psychotic symptoms, disorganization symptoms (mood incongruence, abnormal speech), negative symptoms (apathy, self-neglect) and sometimes cognitive impairment.

Psychotic features can present as:

- **Delusions** - this is having a strong belief which other people do not agree with
- **Thought insertion** - a feeling that other people are putting thoughts into your head
- **Thought broadcasting** - a feeling that other people know what you are thinking

Thought withdrawal - a feeling that other people are removing thoughts from your head

Visual and auditory hallucinations - this is seeing or hearing things which other people cannot appreciate

T Treatment: Anti- Psychotic medication e.g Haloperidol

BULIMIA NERVOSA:

Bulimia nervosa is an eating disorder characterised by repeated episodes of uncontrolled overeating (binges)

followed by compensatory weight loss behaviours such as vomiting induction, laxatives use, over exercise due to pre-occupation with control of body weight.

Presentation: The main signs of bulimia are binge eating and purging. There are a number of physical complications associated with bulimia. These include as follows:

Dental problems- Persistent vomiting can cause gastric acid to damage the enamel of teeth which may lead to tooth decay, excessive vomiting can also cause bad breath and a sore throat.

Treatment: The great majority of patients with bulimia nervosa can be treated at

self support health groups.

The main treatment is Cognitive Behaviour Therapy

ANOREXIA NERVOSA:

People with anorexia nervosa have extreme weight loss due to a compulsive need to control eating.

In spite of this, they believe they are fat and are terrified of becoming what is, in reality, a normal weight or shape.

- Usually young women
- Associated weight loss
- Obsessive food avoidance

- Presentation:

Amenorrhoea

- Laxative abuse
- Dental erosion

Treatment: Cognitive Behaviour Therapy

OCD/ obsessive compulsive disorder

- Patients have purposeless, stereotyped ideas/ words that come into mind, originated from within the patient and are although perceived as nonsensical yet compels the patient to perform senseless, repeated rituals known as compulsions.

Example: Patient having an obsession of everytime washing his hands after touching anything and if resisted evokes anxiety.

Treatment:

Individual Cognitive Behavioural Therapy (CBT) plus exposure and response prevention.

In severe cases SSRIs may be needed.

ANXIETY: frequently co-exists with depression. These patients often have physical symptoms for which there is no physical explanation.

Typical symptoms are shortness of breath, chest tightness, SOB, hyperventilation, a feeling of impending doom.

They have a feeling that they are having a stroke or heart attack.

HYPOCHONDRIASIS: These patients present themselves to the doctor with constant complaints of having a fear of a fatal illnesses despite no actual problem e.g HIV or Cancer

- All investigations- normal
- Visit many doctors and if they are not satisfied change their doctors

- Medical history shows frequent visits with specialists

SOMATIZATION: Multiple recurrent, medically unexplained symptoms usually starting in early life.

MEDICAL EMERGENCIES

Always use the ABC approach when encountered with a medical emergency question.

A- Airway +C spine (secure airway)

B- Breathing - Give Oxygen 15L/min (high flow oxygen) via non breathing mask.
Certain positions improve breathing.
The patient should sit up in a chair (Asthma and chest pain, angina or MI).

In anaphylaxis, you can sit patient up in a chair if there is shortness of breath or wheeze.

C- Circulation- In dental surgery, you have limited measures for circulation i.e in vasovagal syncope, anaphylaxis and adrenal insufficiency, lie the patient flat. This will improve circulation.

In vasovagal and adrenal insufficiency, you should raise the leg of the patient

1. ANGINA or Myocardial infarction

Signs & symptoms:

- Chest pain/ chest tightness
- Shortness of breath
- Fast & slow heart rates
- Increases respiratory rate
- Low blood pressure

Management:

- Stop treatment

C Check ABC

- Sit up & reassure

Hi High flow oxygen 15L/min via non rebreathing bag

Aspirin 300 mg orally/chewed or crushed

- Sub-lingual 0.4 mg GTN
- Repeat GTN
- Monitor & call 999

2. ADDISONIAN CRISIS:

- Low cortical in the blood system usually due to suppression by steroid medication. (negative feedback) or absence of adrenal glands
- Patient on steroid medications prednisolone, dexamethasome any route inhalers or oral.
- Patient undergoing a procedure or having an illness

CAUSES:

Addison's disease

Chronic use of steroid e.g patient with asthma or autoimmune diseases or with Addison disease on steroid medication (prednisolone, dexamethasone any route inhalers or oral)

Addison disease is commonly caused by autoimmune or TB.

Signs & symptoms:

- Tachycardia
- Peripheral cold
- Pallor
- Sweating
- Hypotension
- Weakness
- Confusion
- Loss of consciousness

Oral manifestation: Hyperpigementation of oral mucosa.

Management:

- Assess ABCDE
- Call ambulance
- Lay flat
- Oxygen
- Monitor
-

Ambulance personnel will administer:

- Hydrocortisone 200mg IM

- IV 1 litre dextrose
- Check blood glucose
- BM<3 mmol/l --- 50ml of 50% dextrose

3. ASTHMA:

A chronic inflammation of the airways due to allergic reaction leading to bronchospasm presenting as wheeze, dry cough and shortness of breath

Severe asthma

- Inability to complete sentences in one breath
- HR >110/min
- RR >25/min

Life threatening

- RR <8/min
- HR <50/min
- Cyanosis
- Exhaustion, confusion, decreased level of conscious level

Pathology:

- Mediated by IgE
- Intrinsic response to allergens
- Reversible constriction of airway
- Increased mucous secretion
- Oedema

Management:

- Assess ABC
- Sit up
- Salbutamol (upto 10 activations)
- Oxygen
- Repeat salbutamol(if needed every 10 min)
- No improvement/severe symptoms
- CALL AMBULANCE
- Monitor

4. **HYPOGLYCAEMIA**: This is glucose less than or equal to 3 mmol/l.

Symptoms of hypoglycaemia:

- Shaking and trembling

- Sweating, pins and needles sensation in the lips and tongue

- headache

- slurred speech

- change in behaviour

- loss of consciousness.

Treatment: Oral glucose (glucogel) if conscious or IM glucagon 1mg if patient unconscious

5. EPILEPTIC SEIZURE

Symptoms of an epilepsy:

- fits/seizures

- urinary or faecal incontinence

- tongue biting

- **Precipitating factors:**
  i. Flashing lights
  ii. Lack of Sleep

Management:

1. Make sure it is safe to approach

2. Give oxygen

3. Give oral midazolam 10mg buccal if seizure last more than 5 minutes if you are in a community dental sugary.
If seizure stops, Place patient in recovery position.

In hospital seizures are treated with diazepam or lorazepam.

6. CHOKING CHILD:

Common problem in dentistry. Symptoms of choking is cough, stopping breathing.

MANAGEMENT:

If child has effective cough encourage to cough

If cough is ineffective then offer 5 back blows and 5 abdominal thrust (heimlich maneuver) alternatively until the foreign body is out.

In children less than 1 year, instead of the abdominal thrust, perform chest thrust with 2 fingers. (Index and middle finger)

7. ADULT BASIC LIFE SUPPORT:

1. Check for danger

2. check response

3. Shout for help

4. Airway- Check for obstruction: i. If Foreign body- Remove
   ii. If vomiting - Suction

5. Perform Head tilt and chin lift then Look , feel and listen for breathing for 10 secs

6. call 999 and ask for an ambulance

7. Connect an AED and begin CPR

N.B- Place hands on the lower 1/3 of the sternum. Compressions should be at a rate of 100-120 per minute at a depth of 5-6 cm

8. VASOVAGAL

Is due to overactivity of the parasympathetic system via vagus nerve causing bradycardia and then collapse due to low supply of blood to the brain.

Treatment: lie the patient down and raise the legs and Offer reassurance

9. ANAPHYLAXIS:

It is a type hypersensitivity reaction.

The commonest cause in medical practice is penicillin allergy. Other things include latex.

Symptoms of anaphylaxis:

shortness of breath

wheeze

collapse

abdominal pain

rash

urticaria

facial or tongue or neck swelling.

Treatment: Adrenaline 0.5mg (0.5ml) IM 1:1000 . Always call 999 for an ambulance. IM give it on the antero-lateral aspect of the thigh.

MEDICAL EMERGENCIES - DRUGS

To manage the more common medical emergencies encountered in general dental practice, the following drugs should be available

- Glyceryl trinitrate (GTN) spray (400 microgram/dose) Sublingual
- Salbutamol aerosol inhaler (100microgram/actuation)
- Adrenaline injection (1:1000, 1mg/ml) I.M
- Aspirin dispersible (300mg) Orally chewed or crushed
- Glucagon injection (1mg) I.M
- Oral glucose solution/tablets/gel/powder 10g, Orally
- Midazolam (10 mg (buccal)
- Oxygen cylinder that must supply oxygen at least for 30minutes

MISCELLANEOUS:

OBESITY: Is simply defined as excess weight with BMI >30mgM2.
Normal BMI is 18.5-25.
BMI 25-30 is called overweight

How to calculate BMI: BMI =weight divide by height (meters) squared.

Neurofibromatosis (NF, Von Recklinghausen' disease)

This is an autosomal dominant disease which characterised by:

1) Cafe-au-lait-spots: These are flat, coffee-coloured patches of the skin in the first year of life which increase in size and number with age.

2) Freckling: Typically in skin folds (axilla, groin, neck base, submammary area)

3) Dermal neurofibromas: small nodules.

4) Nodular neurofibromas: Arise from the nerve trunks.

PYLORIC STENOSIS:

This is a congenital disease which is usually seen at 6 week of age in an infant.

The main symptom is vomiting after feed.

It is usually projectile vomiting.

The baby remains hungry.

The main pathology is narrowing of he stomach outlet.

There is usually hypertrophy of the muscles of the pyloric outlet.

Investigation: Ultrasound scan

Treatment: Pyloric surgery.

RADIOLOGY in dentistry

- CT scan
  - Orbit and eye ball
  - Assessing extensive trauma or assess pathology before planning surgery
- MRI :
  - For Tempo-mandibular Joint (TMJ)
- ULTRA SOUND: to assess blood supply to tissues
- SIALOGRAPHY: imaging of major salivary glands and can show radiolucent obstructions
- X-RAY: facial soft tissue foreign body

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