GASTROINTESTINAL SYSTEM DISORDER

Session Out Line

i. Anatomy physiology overview
ii. Assessment
    - History
    - Physical examination
    - Radiological examinations
    - Laboratory tests
iii. GI disorders

Objectives

After completion of this topic you will be able to:

- Explain Anatomy and Physiology of GIT
- Assess patients with GIT disorder
- Give best management for patients with different GIT disorder

Anatomy physiology overview

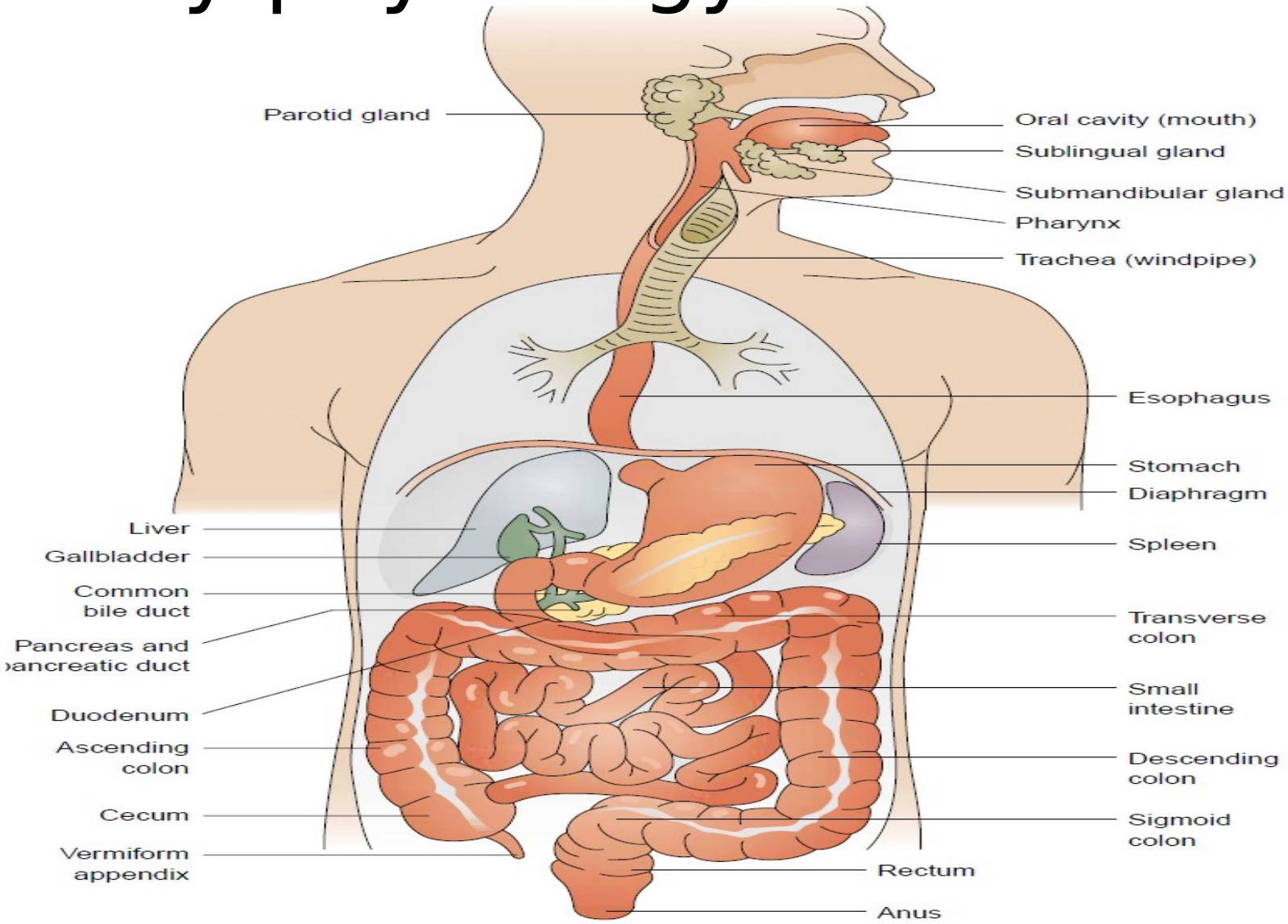
The Gastrointestinal (GI) tract

- Is a hollow muscular tube that extends from the mouth to the anus.

The Four major activities of the GI tract are:

- Secretion of electrolytes, hormones and enzymes to be used in the break down of the ingested materials.
- Movement of ingested products.
- Digestion of food and fluids.
- Absorption of products into the blood stream.

Anatomy physiology overview



Anatomy physiology overview

The Gastrointestinal tract is also composed of four layers.

- Mucosa (inner layer) ▭ sub mucosa ▭ Muscularies ▭ Serosa.
- Muscularies(longitudinal and circular)
- The largest serosa is peritoneum
- Most of abdominal organs are covered by peritoneum

Anatomy physiology overview

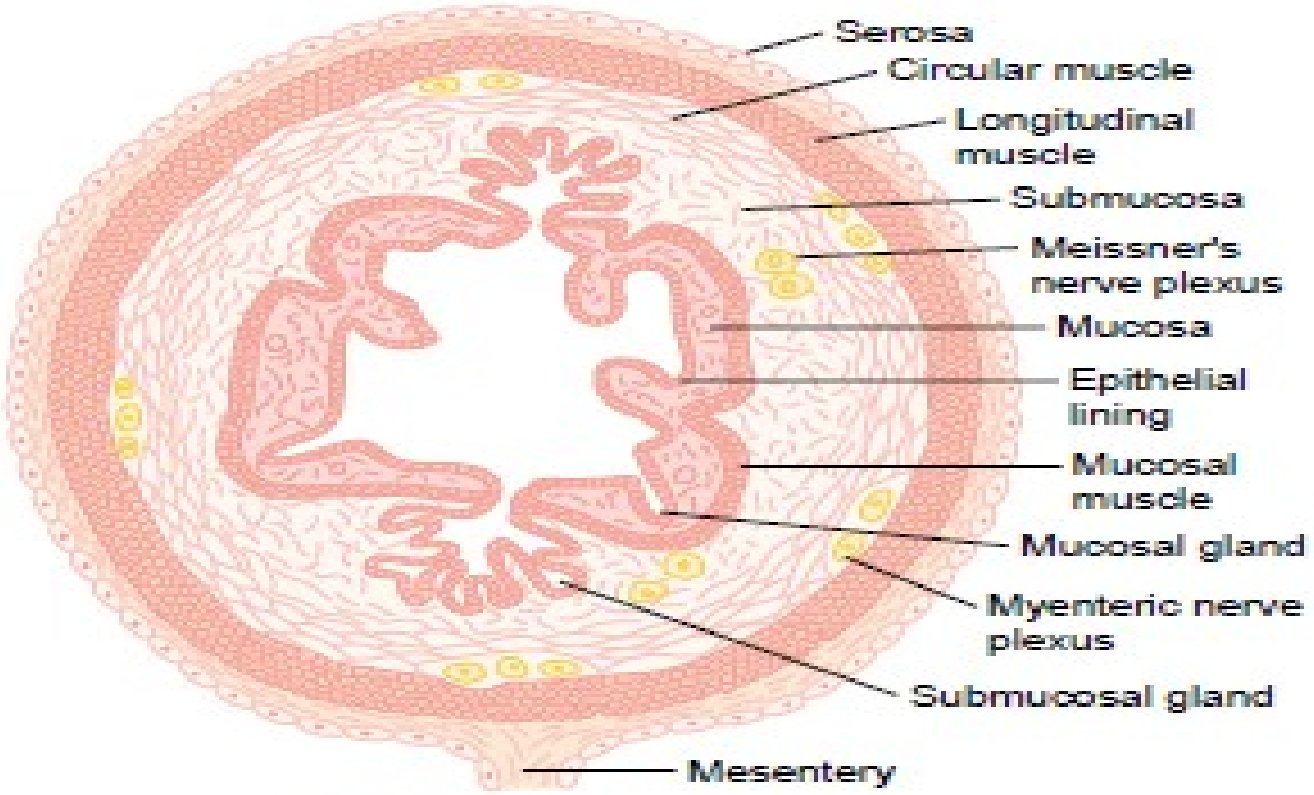


Figure 62–2

Typical cross section of the gut.

Anatomy physiology overview

Blood Supply of GIT

- From arteries which originate from thoracic & abdominal aorta. These arteries are:-
  - Gastric artery:- oxygen & nutrient supply to stomach.
  - Superior & inferior mesenteric arteries – intestine.
  - Portal vein drains blood & nutrient from intestines to liver

Anatomy physiology overview

Nerve supply of GIT

- It is innervated by both sympathetic & parasympathetic portion of the ANS
    - Sympathetic nerves exert an inhibitory effect on the GI tract. ex:- decrease gastric secretion & motility.
    - Parasympathetic nerve stimulation causes peristalsis to occur & increases secretary activities
- The only portions of the tract under voluntary control are the upper esophagus & the external anal sphincter

Assessment

SYMPTOMS OF GIT disease

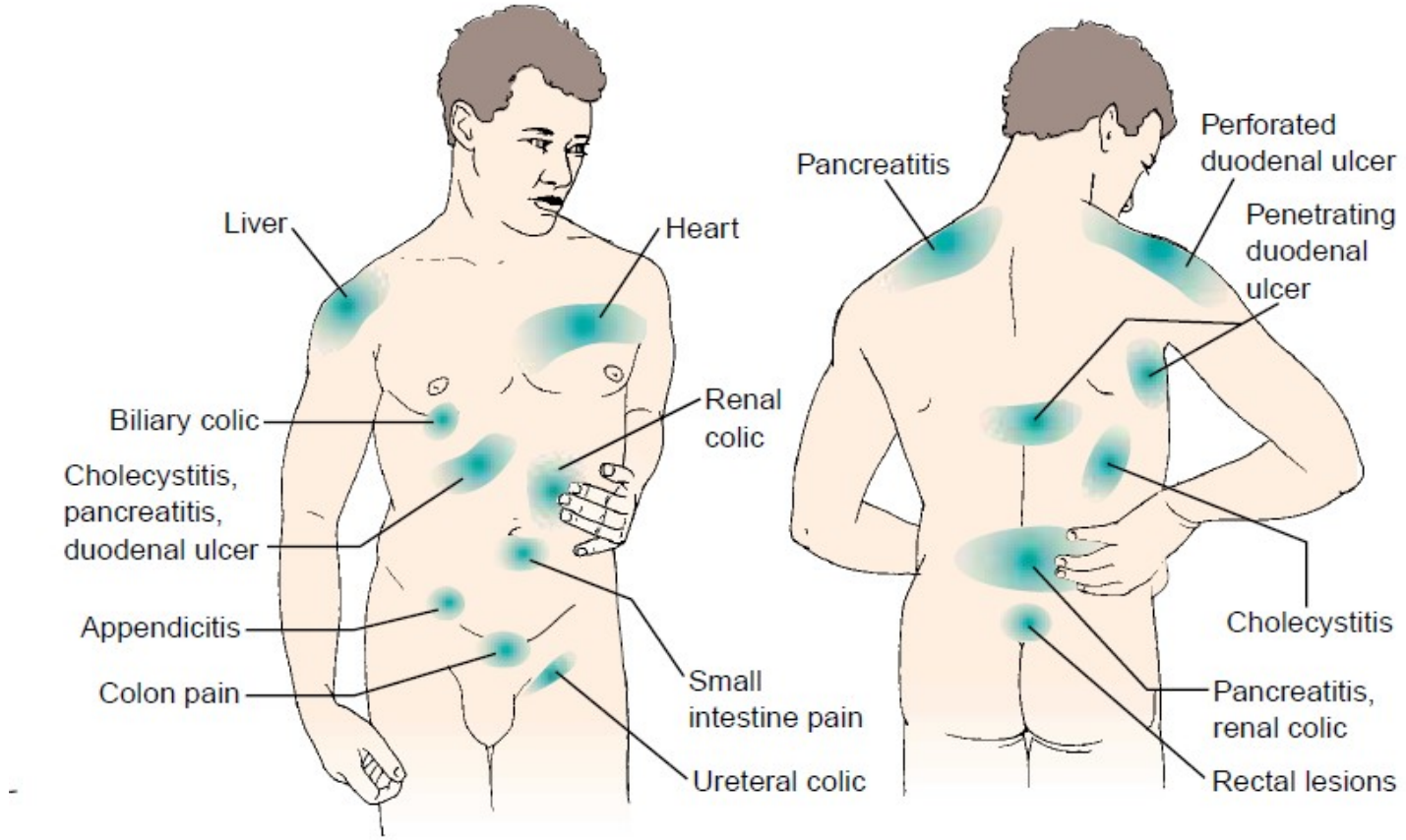
- Dysphagia and Odynophagia
- Heartburn and reflux
- Indigestion
- Flatulence
- Vomiting
- Anorexia

Assessment cont’d

Pain

- Pain can be a major symptom of GI disease.
- The character, duration, pattern, frequency, location, distribution of referred pain
- Time of the pain greatly depending on the underlying cause.
- Other factors, such as meals, rest, defecation, and vascular disorders, may directly affect this pain.

Assessment cont’d



Assessment cont’d

- Alteration of bowel pattern
- Abdominal pain
- Abdominal distension
- Weight loss
- Haematemesis
- Rectal bleeding
- Melaena
- Jaundice
- Itching

Physical examination

Inspection-auscultation- palpation- percussion

Inspection.

- **Inspect contour of the abdomen**

✓Is it Flat, Scaphoid, Distention.

✓The five F’s that causes distention, fluid, flatus, feces, fat, fetus

✓Normally the flanks are concave but convex in distention

Assessment cont’d



Inspecting the abdomen



Auscultating the abdomen



Palpating the abdomen



Percussing the abdomen

FIGURE 34-4 Examination of the abdomen includes inspection, auscultation, palpation, and percussion.

- **Inspect the umbilicus**
  - Inspect the umbilicus for, it position, sign of inflammation, Hernia,.
- **Inspect abdominal skin**.
  - Inspect : prominent superficial veins, ,stretch marks, scar, rashes and lesions
- **Look for *prominent superficial veins***,
  - Thin veins over the costal margin
  - Caput medusae

- **Inspect Scars:-**
- **The groins** for swelling, hernia (if hernia is present, ask patient to cough)
- **Symmetry:**

  Observe the abdomen for symmetry, checking for lumps, bulges or masses.

Assessment cont’d

Auscultation:

- Information about bowel motility

- For detecting bowel sounds and vascular bruits.

- ✓Normal- high-pitched, irregular gurgles with frequency of 5 to 35 times/mint
- ✓ Document the frequency of the sounds, using the terms
  - ***normal*** every 5 to 35/minutes),
  - **Hyperactive- in case of early onset of intestine obstruction.**
  - **Hypoactive-in case of peritonitis**
  - **Absent-incase of generalized peritonitis -**bowel activity rapidly disappears and a state of **paralytic ileus**

- Occasionally you may hear *borborygmi*—long prolonged gurgles of hyperperistalsis-
- Confirm bowel sounds in each quadrant, listen for up to 5 mint to confirm the absence of bowel.
- **Vascular Sounds**: use the bell to auscultate vascular sounds.
  - Normally there is no bruit

Percussion

Helps you

- To assess the amount and distribution of gas in the abdomen
- To identify possible masses that are solid or fluid filled
- Estimating the size of the liver and spleen
- Percuss all four quadrants to assess the distribution of ***tympany*** and ***dullness***.

- **Percussion notes**: normally- tympanic over bowels, Stomach, Empty bladder.

- **Dull percussion note** will be heard over liver, spleen, pancreas, kidney, uterus, distended bladder, fluid and tumor.

Palpation

- Tell the patient to relax as best they can and to breathe quietly

- **Light Palpation-** to detect tenderness , superficial masses and Involuntary rigidity (muscular spasm)
  - ✓ Using the finger tips, and compress to a depth of 1cm.

- Involuntary rigidity (muscular spasm) typically persists despite these maneuvers. It **indicates peritoneal inflammation**

Types of tenderness

- **Murphy’s sign (inspiratory)**
- **Rebound tenderness**
- **Direct tenderness**

Deep Palpation:-

- ✓ Compress to maximum depth 5 to 6cm, perform bimanual palpation if you encounter resistance or to assess deeper structures
- ✓ To detect masses and size of organs (organomegaly, liver, spleen).
- ✓ If mass is identified, the exact, site has to be delineated (location), size, mobility, shape, surface (smooth, nodular), edge, consistency(ex, hard incase malignancy), tenderness, pulsation

Diagnostic Tests

- **Diagnostic Tests**

- Used to locate the nature and the level of the problem

- General methods of diagnosis include:-

Laboratory tests

- Complete Blood Count

- Red blood cells-

  - 4.2 to 5.4 million/mm3 (women)

  - 4.5 to 6.2 million /mm3 (men)

Diagnostic Tests...

Stool for ova and parasites.

Stool cultures – no unusual growth.

- Presence of pathogens may indicate, shigella, salmonella, staphylococcus aures, bacillus.

Stool for lipids

- Normally 2 to 5gm/24h(Normal diet)

- **Disease of the mouth & related structures**

Disease of the mouth…

Periodontal Disease

- Periodentum is the tissue that surrounds & supports the teeth
- Periodontal disease includes :-
  - Gingivitis
  - Periodontitis
  - Periapical Abscess / Dento-alveolar Abscess/
  - Stomatitis
  - Dental Caries
  - Parotitis
  - Trauma of the Mouth & Jaw

Gingivitis:-

Defn: - It is an inflammation of gum

- It is the earliest form of periodontal disease.
- Most common infection of oral tissue.

Causes: -

- Poor oral hygiene: food debris, bacterial plaque

Gingivitis…

C/M: - Painful, inflamed, swollen gums, usually the gums bleed in response to light contact.

- Inflammation causes the gingival to separate from the teeth surface &pockets formed in the gingival that can collect bacteria, foods particles & pus.

Gingivitis…

Nursing MX

- Brush teeth using a soft toothbrush at least 2 times daily
- Avoid alcohol & tobacco products
- Maintain adequate nutrition & avoid sweets

Medical MX-

- Periodic professional dental cleaning

Periodontitis

Defn: -It is an inflammation of the tissue around teeth.

Cause

- untreated gingivitis
- Poor dental hygiene

C/M

- May have bleeding
- Infection
- Loosening of teeth
- Loss of teeth /late/

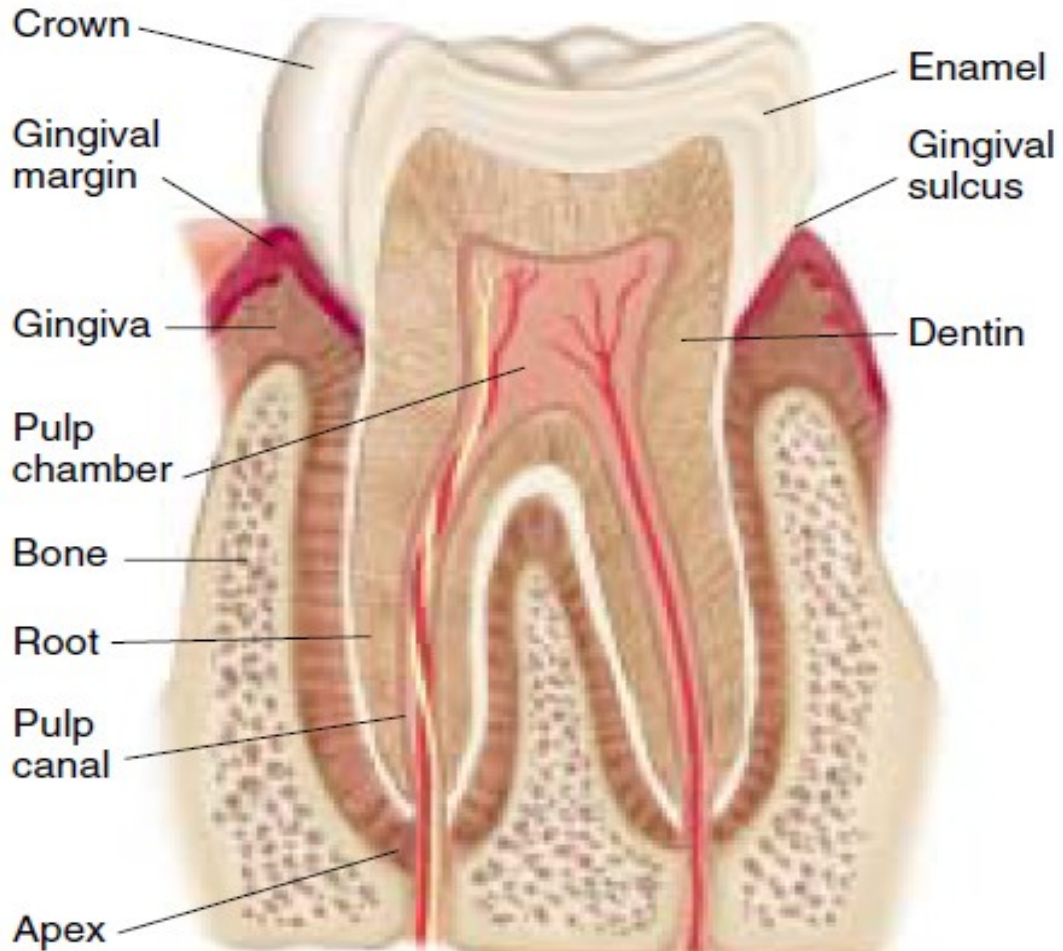
RX: -

- Instruction of patient in proper oral hygiene.
- antibiotic
- analgesics

Periapical Abscess / Dento-alveolar Abscess/

Def.:-

- pus collection around the apex of the teeth
- Abscessed tooth
- Involves the collection of pus in the apical dental periosteum & tissue surrounding the apex of the tooth.
- It can be a cute or chronic



adult teeth (16 in each jaw) are identified below.

Periapical Abscess…

Acute periapical abscess

- It is usually secondary to a suppurative pulpitis (a pus producing inflammation of the dental pulp) that arises from an infection extending from dental caries

C/M

- dull, gnawing , continuous pain,
- Cellulites, edema of adjacent structures
- Swollen check
- Fever, malaise

Mx:-

- Incision & drainage
- Antibiotic

Periapical Abscess…

Chronic Periapical abscess

- It is slowly progressive infections process
- This can progress to a fully formed ‘’blind dental abscess’’ without the patient’s knowing it

DX: -

- x – ray

Mx:

- Teeth extraction or root canal therapy, with apicectomy / excision of the apex of the tooth root.

Stomatitis

Def:-

- It is the inflammation of the mucosa of the oral cavity

Cause: -

- Minor trauma, and allergies
- Associated with HIV infection / virus/, bacteria / such as, syphilis & streptococcal/ and fungus moniliasis

Stomatitis…

C/M:

- shallow ulcers with white gray center & red border
- Seen in the inner side of lip & cheek or on the tongue
- It begins with a burning sensations & slight swelling, painful
- Usually heals without a scar.

MX:

- proper oral hygiene
- Antibiotic
- Clotrimazole paint
- Gentian violet application

Dental Caries

Def: -

- A gradual pathologic disintegration & dissolution of the tooth & dentin, with eventual involvement of the pulp

Etiology: -

- It is the interaction of three factors. These are:-
  - A susceptible tooth surface
  - proper microflora / streptococcus mutans, Actinomyces Viscosus & lactobacillus/
  - a suitable substrate for the microflora / carbohydrate/

Dental Caries…

Predisposing factors:-

- root exposure, lack of fluoride, inadequate personal hygiene

Mx:-

- removal of decay.
- Restoration
- tooth extraction

Parotitis

Defn

- inflammation of the parotid gland
- Most common inflammatory condition of the salivary glands

Cause: -

- Virus in children
- Staphylococcus aureus (except in mumps)

Risk factors:-

- Elderly, acutely ill & debilitated people with decreased salivary flow due to general dehydration or medication

Parotitis

C/M:

- Fever
- Swelling, tenderness & tense gland
- Pain is felt in the ear & swelling gland interfere with swallowing
- Overlying skin soon becomes red & shiny

Parotitis

Medical MX: -

- Antibiotic (cloxacillin 500Mg Po Qid for 7 days)
- Massage
- Analgesics
- Incision & drainage (I&D) of the glands if antibiotic therapy is not effective.

Nursing Intervention

- Administer ordered medication
- Reassure the patient
- Tepid sponge bathes.