Sheet no. : 9

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**Chronic gingivitis**

Affect most people (99%) during their lifetime

**Definition:** inflammation of the PMA (papillary, marginal and attached gingiva) that needs time to be established ,slowly progressive,painless.

**Etiology** (initiative factor): bacterial plaque which starts depositing on the tooth surface and when it matures it starts the disease

**Enhancing factors :**

1-local

2- systemic

3-drugs

4-malnutrition

**Types:**

1- with Modifying factors (local contributing factors that enhance the disease and keep it for a longer time which actually impair the patient's oral hygiene): 1- overhang restorations 2- crowding 3- malocclusion 4- cavities 5-

Removal of the causing factor(bacterial plaque) is called: scaling and polishing of the tooth

If we remove the plaque without managing the modifying causes we will end up enhancing the disease by hindering the patient from practicing a good oral hygiene , so we must always manage both ;the plaque and any modifying cause.

99% of cases are called chronic papillary and marginal gingivitis because it only affects the papillary and marginal gingiva, and once the disease extends apically to the attached gingiva it’s called PMA (diffused chronic gingivitis)

2-without modifying factors: simple chronic gingivitis (only plaque)

Managing this patient is done by scaling and polishing with oral hygiene instructions and the condition will be reversed.

**Systemic factors**

1-Endocrine diseases (DM,pregnancy,puberty)

During puberty even in the absence of dental plaque some changes occur in the gingiva(redness, swelling etc) . but any patient who already had chronic gingivitis before puberty ,the disease will become more profound when reaching puberty.

2- blood diseases (for example: leukemia)

**Drugs**

 3 types: (cause gingival enlargement which impair the patient's oral hygiene)

1- phyntoin :used in epilepsy management

2-CCBs : nifidipine(Adalat®)

3- Cyclosporines (immunosuppressants)

So, in top of the gingival enlargement caused by the plaque itself, these drugs will lead to even more gingival enlargement.

Tx:

1- gingivectomy because the tissue that grows is fibrotic not resilient

2- Reinforcement of oral hygiene to slow the rate of growth.

Aspirin: causes chemical burn if used directly on the affected tooth.

**Malnutrition** especially vitamin C deficiency

Not common in our region

**Now we will talk about our main subject : Plaque-induced gingivitis**

It is an Ubiquitous ( common) disease ( the most common form of gingival diseases)

**Definition :** bacterial elicited inflammation of the marginal gingiva.

If we stop brushing our teeth for:

 4 days : clinical manifestations of chronic gingivitis will start to appear

4days-1 week : even more evident clinical manifestations

Up to 2 weeks : mature established chronic gingivitis.

**Classification according to the distribution of the disease in the oral cavity**

1- Localized to one tooth in which the patient brushes his teeth regularly but can't reach a certain tooth due to mechanical difficult caused by something like malalignment ,roughness.

2- generalized (more common)

**Clinical findings:**

1- gingival bleeding upon gentle probing is an objective sign that's why it’s the diagnostic sign we depend on. (this also may be a sign of a serious disease other than gingivitis like leukemia which may cause profuse bleeding as a first sign and may be hard to stop)

-other causes of gingival bleeding upon gentle probing : enlargement of the capillaries extending near the epithelial surface, ulcers .

In patients with established gingivitis, once you open the cavity, we immediately notice redness(subjective) , swelling(subjective) and bleeding upon probing(objective).

**notes**

-after 2 weeks ; redness and swelling become more obvious and bleeding become spontaneous.

-bleeding upon brushing our teeth which happens to a lot of people may be a good thing as it provoke them to seek dental consult.

-normal color of the healthy gingiva is coral pink. Any change from the normal color may be due to : racial pigmentation( now called excessive pigmentation) , hyperemia due to engorgement of the capillaries ,metal pigmentation(bismuth found in gutta percha, lead, mercury), tobacco smoking.

-Sometimes the endodontic –treated teeth gets discolored due to the material used in the cementation of GP and GP itself.

-Workers in battery or paint factories may have green pigmentation of their gingiva.

Normal gingival: is firm and resilient **, resilient** means: amenable to treatment

Like : any gingivitis which is not fibrotic>> remove the cause it will respond to treatment= amenable to treatment

In destructive phases : spongy, Buffy , soft ,because of exudates degeneration of connective tissue epithelium>> meaning : in any destructive stage when gingivitis is left untreated for along time it will remain for life unchanged it didn’t transform from gingivitis to periodontitis.

So gingival starts resilient > red> swelling>spongy appearance( very old standing chronic gingivitis)

**In reparative phase**: firm , leathery due to long stand chronic inflammation

Explanation : any one inhales smth may end up with allergy, here you need antigen antibody rxn to resist the disease, similarly , when plaque allowed to be deposit on the cervical margin of the teeth, this is a foreign body and the immunity has to resist, and the first defense mechanism appears which is the nuetrophil , after period of time if the accumulation is maintained lymphocyte will be released, then plasma cells, and so on

If all this is left for along time lets say for 2 weeks>> gingival was trying to repair itself and during this repair period > gingival may change from resilient into fibrotic( long standing disease) here the treatment is scaling, polishing, oral hygiene instruction, and the gingival here is fibrotic so it will not shrink >> we do excision > the same case as in drug induced hyperplasia

Loss of stippling due to edema in underlying connective tissue

Stippling is part of the gingiva: the absence or presence of **stippling has no relation to health and disease**

Like if a patient has gingivitis the stippling will disappear , after treatment **its not necessary** for it to appear again

Stippling : as the gingiva becomes swelled >> its pixel will decrease, stippling disappears

So when the gingiva swells as a result of hyperemia and fluid p > stippling is lost

But the loss of stippling is a sign of health and disease, but the absence doesn’t mean the gingival is not healthy

Radiographic findings: no evidence of bone loss , because the chronic gingivitis is limited to attached and marginal papillary gingival, doesn’t spread more than this if left untreated

So we will not reach the osteoclasting stage, this will happen only when it changes from gingivitis into periodontitis

So in gingivitis there is no bone loss evident radio graphically

Attachment loss : sulcus depth is normal

Attachment loss: either increase in sulcus depth ( more than 3mm),recession below the CEJ

So pocketing and recession are called CAN > clinical attachment loss or TAN > total attachment loss

Pics notes:

The distance btw the gingival margin and the depth of the sulcus should be up to 3mm

As we said > as we allow plaque to deposit > we will have defense mach. And exudates and blood cells that pushes the junctional epithelium upwards, then the depth of the sulcus will increase >> called psuedopocket that means : the base of the sulcus didn’t change only we have coronal migration of the gingival due to swelling>> psuedopocket or gingival pocket,or

False pocket

If we allow the disease to continue for longer time>> more enlargement, but the base here is in its same position

Clinical pic

First ; shows healthy gingiva >> pink , stippling, knife edged, mucogingival junction and the attaché gingival is above it

Redness and swelling at the beginning of the disease is subjective>> because for beginners like us we will miss such a swelling and redness

Types of gingivitis :

Mild , moderate, sever

**Mild gingivitis** : its from the time we allow the plaque to accumulate on healthy gingival up to 2 weeks till the gingivitis is established>> means : slight redness on the margins

Treatment ; reinforcement of oral hygiene practice of the pnt

In the mild type we have bleeding but the amount is mild

The cause of bleeding is plaque >> find it using disclosing die

(erythrosine 120) is accepted by who

**Moderate gingivitis** : in the pic the cause is crowding as local etiological factor, but plaque is the primary etiological factor

Here we have redness, swelling, bleeding is more excessive but not profound but more than mild form

We walk the perio prob in the sulcus from one side to another, wait 30 sec to allow the blood to go from sulcus to the surface then we can tell if we have bleeding or not, we cant diagnose this immediately

**Sever gingivitis** : plaque and calculus occupying places in the gingiva , gingival is swelled cuz of plaque induced gingivitis , but the interdental papilla enlarges first, cuz usually once the plaque deposit this will start at the interdental papilla, then start to spared to other places

So the infl. Is older in the papilla

2 types of gingival enlargement

1) plaque induced inflammatory gingival enlargement

To differentiate this type from the second 2) drug induced hyperplasia that the last is like a cornflower has stems but the first type is smooth ,shiny ,Buffy, not composed of parts or stems

Pic:

Mouth breather pnt >> it affects as a cofactor the gingivitis by xerostomia , but it never initiates gingivitis

Once we sleep >> diminish in saliva which contains AB and IGs, only in pnt who don’t brush there teeth and have gingivitis>> mouth breathing increase and progress the disease more rapidly = exaggerate unexsisting condition

Treatment : is scaling, polishing, oral hygiene ,

It has been proven that for all ages >> brushing before bed time is more important than in the morning

Other types : pyogenic granuloma in males = , pregnancy tumor in female

**Histopathological level of the disease**

If the plaque is allowed to be deposited on healthy gingiva from 0-4 days at histo- level we will see nuetrophils and extravasculity >> means the fluid comes out fro the blood vesicles and migrate and penetrate the junctional epith. Get inside the gingival>> **chemo tactic stage**

Chemotactic= locomotive= fluid stage

If plaque allowed to be deposited more than 4 days up to 7 days the body starts to secrete differentiated immune cells which is lymphocyte>> so we have sub clinically nuetrophils and lymphocytes= **sensitivity stage >>** cuz lymphocytes are sensitive cells

Gingivitis here is in the acute stage, cuz of the response of nuetrophil and lymphocytes

If plaque is left from 7-14 days

More differentiated cells appear like plasma cells

At this stage we don’t have acute stage cuz after 14 days it will become clinically evident disease >> swelling ,redness, bleeding on probing

If gingivitis is not treated even for along time , there is no evidence that it should transform to periodontitis, no body knows when it will become periodontitis

Chemotactic stage at histopathological level is called initial stage>> 0-4d

4-7 d >> sensitivity ( lymphocyte)>> early stage > early from the appearance of signs and symptoms

7-2w >> established

Id gingivitis becomes periodontitis >> we will have a new cell >> OC >> osteoclasting activity>> bone resorbtion>> advanced stage

In ortho the whole principle is dependant on the osteoclasting and osteoblasting activity

Using of butterfly weight >>30 g to move the teeth resorbtion on one side ,deposition on the other

In perio disease its only about osteoclasting activity

 Good luck ☺