AIDS AND PERIODONTIUM

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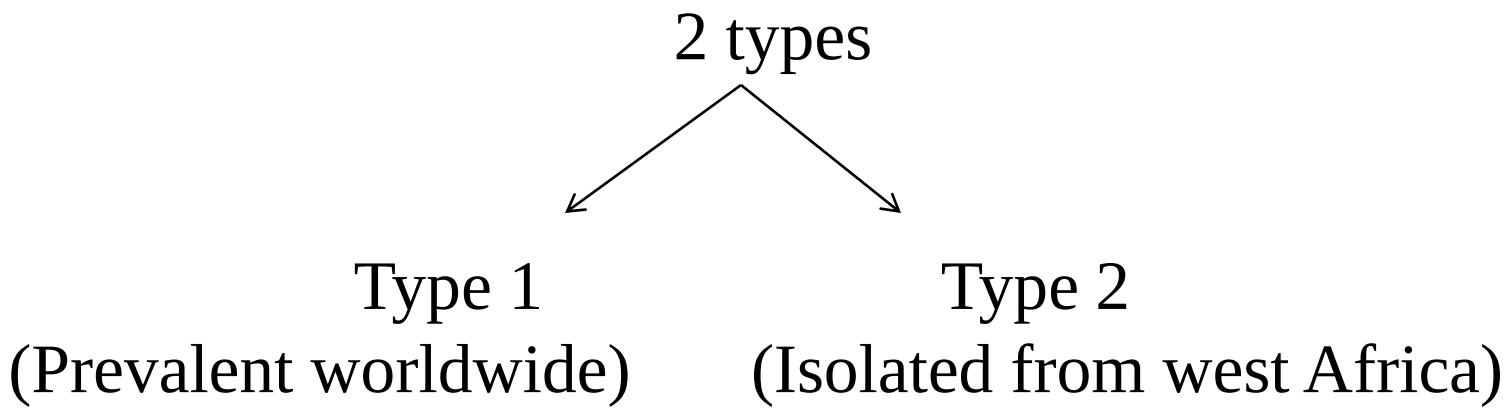
MDS

- It is defined by occurrence of any of more than 20 opportunistic infections or HIV-related cancers & when CD4+T lymphocytes count is less than 200/mm^3 or <14%.

- Most serious medical crisis in world history.
- Profound impairment of immune system
- First reported in 1981
- HIV was identified in 1984



Modes of transmission

- Sexual contact
- Illicit use of injection drugs
- Exposure to blood/blood products
- Human bites(rarely reported)
- Mother to baby: transplacental, at birth, after birth,breast milk
- Shared needles & razors.
- Saliva(rarely reported)

Pathogenesis

- Affinity for immune system cells carrying CD4 cell surface receptor molecule.
- Thus helper T lymphocytes (T4 cells) affected the most.
- Monocytes, macrophages, Langerhans cells, & some neuronal & glial brain cells may also be involved.
- Chemokine receptor type 5 (CCR5) found on the surface of CD4 cells often serves as a point of entry for HIV into the cell.
- Once into the cell, viral replication starts.

- Viral replication occurs continuously in the lymphoreticular tissues of lymph nodes, spleen, gut-associated lymphoid cells, and macrophages.

Altered function of T4

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B cell dysregulation, Altered neutrophil function.

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risk of malignancy & disseminated infection

CDC Surveillance Case Classification: (1993)

Category A	Category B	Category c
acute symptoms or asymptomatic, patients with persistent generalized lymphadenopathy with or without malaise, low-grade fever, fatigue	symptomatic conditions like candidiasis, HPZ,OHL, idiopathic thrombocytopenia, or constitutional symptoms of fever, diarrhea, weight loss	outright AIDS, manifested by life threatening conditions, CD4+T lymphocytes <200/mm^3 and/or a CD4 percentage < 14%

Tests for HIV infection

- ELISA
- Western-Blot

Oral Manifestations

Strong Association	Less strongly associated
Oral Candidiasis	Melanotic hyperpigmentation
Oral Hairy Leukoplakia	Mycobacterial infections
Atypical Periodontitis	Necrotic Ulcerative Stomatitis
Oral Kaposi's Sarcoma	Herpes Simplex Infection
Oral Non-Hodgkins Lymphoma	Herpes Zoster
	Bacillary angiomatosis
	Recurrent aphthous stomatitis

Fungal

e.g: Candidiasis

Viral

e.g: Herpes Simplex,
Herpes Zoster,
Oral Hairy Leukoplakia

Bacterial

e.g: Periodontal diseases,
Bacillay Angiomatosis

Neoplastic Lesions

e.g: Kaposi's Sarcoma

Lymphoma

e.g: Non-Hodgkins Lymphoma

ORAL CANDIDIASIS

Most common oral lesion in HIV.

90% patients with AIDS

Four clinical presentations.

Pseudomembranous candidiasis "thrush"

-Painless/ slightly sensitive

-Yellow white curd-like, readily scrapable

-Hard/ soft palate & buccal/labial mucosa: most common

Erythematous candidiasis

Red patches on buccal/ palatal mucosa

Depapillation of tongue

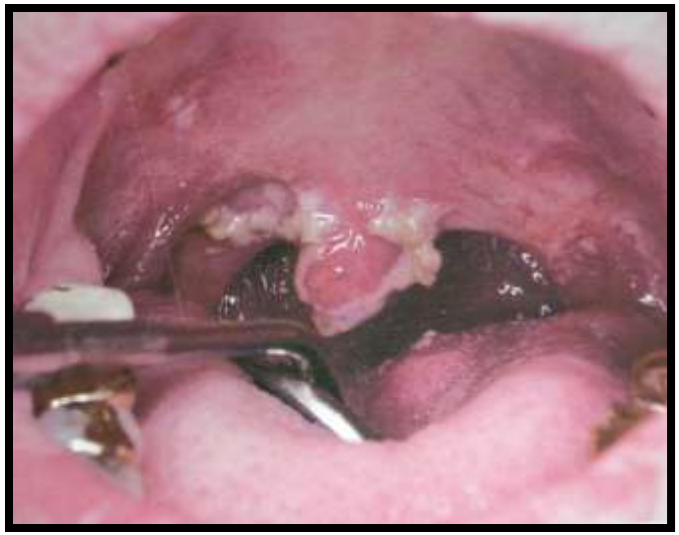
On gingiva (d/d: desquamative gingivitis)

Hyperplastic candidiasis

Least common

Buccal mucosa, tongue, uvula

More resistant to removal



Angular cheilitis

Commissures of the lips appear erythematous

Surface crusting/fissuring

Treatment

-Systemic &/or topical antifungal therapy

-Recurrence after discontinuation

e.g) Topical: clotrimazole: 10mg tablets

Miconazole 2% Ointment

Amphotericin B Oral rinse

Systemic:Ketoconazole(200mg tab)

Fluconazole(100 mg tab)

ORAL HAIRY LEUKOPLAKIA

-Almost exclusively on the lateral border of the tongue

-Usually bilateral

-May extend to the dorsum/ventrum of the tongue.

-Also reported on buccal mucosa, floor of the mouth, retromolar area & soft palate.

-Asymptomatic, keratotic, poorly demarcated, corrugated, vertical striations

-Few mm to several cms

-Surface appears shaggy & “hairy” when dried

-Lesion does not rub off

-Originally believed to be associated with HPV, but now evidenced to be associated with EBV

Treatment

- No vigorous Rx
- Antiviral agents like acyclovir, foscarnet.
- Topical application of Retinoids, podophyllin, interferon
- Lasers, conventional therapy
- Tends to recur when therapy is discontinued

KAPOSI'S SARCOMA

- Most common oral malignancy associated with AIDS
- HIV +ve with Kaposi's Sarcoma = AIDS defining
- Gingiva & palate are most common sites.
- Rare, multifocal, vascular neoplasm.
- HHV-8
- Initially as a red- purple macules that progresses to nodular form that are usually brown, blue or purple.
- On occasion, expansion of gingival lesions may result in bone resorption, tooth mobility & tooth loss.

Treatment

-Oral hygiene improvement

-Antiretroviral agents, lasers, cryotherapy,

radiation, intralesional injection, interferon-α, or sclerosing agents.

Kaposi's sarcoma

Kaposi's sarcoma resulting in gingival enlargement

NON-HODGKIN'S LYMPHOMA

- Second most common malignancy associated with HIV
- NHL in HIV+ve patients = AIDS defining.
- Inappropriate B lymphocyte proliferation
- Erythematous, painless enlargements that may ulcerate due to trauma.
- Bone involvement may occur
- Commonly affects gingiva, palatal & alveolar mucosa.

Treatment

-Requires management of HIV-related opportunistic infections.

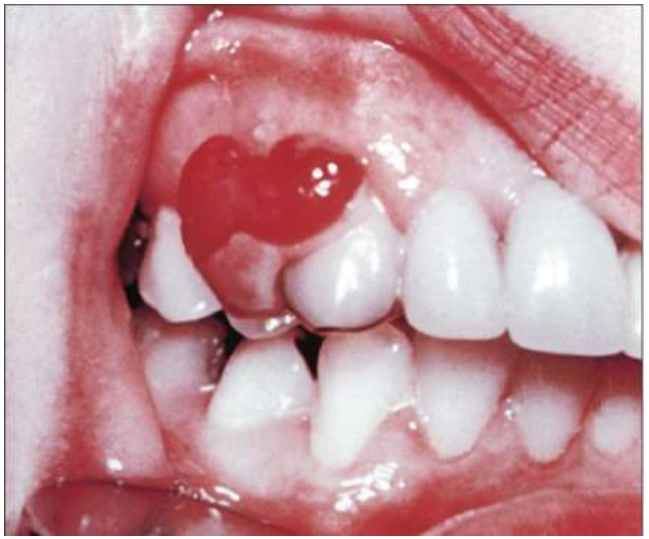
-Radiations

-Corticosteroids

Bacillary (epitheloid) Angiomatosis

-Vascular proliferative disease

-Caused by rickettsia- like organisms. E.g)B.Henslae(Cats are the primary host)



-C/F: red, purple/blue edematous soft tissue lesion that may destroy bone & PDL

Diagnosis

- Based on biopsy: “epitheloid” proliferation of angiogenic cells accompanied by an acute inflammatory cell infiltrate.

D/d

KS, angiosarcoma, hemangioma, pyogenic granuloma.

Treatment

Broad spectrum antibiotics

E.g: Erythromycin/doxycycline alongwith conservative periodontal therapy with excision of gingival lesion if required

Oral hyperpigmentation

As spots / striations on buccal mucosa, tongue, palate, gingiva

Causes: prolonged use of various drugs

adrenocorticoid insufficiency

Pneumocystis carinii, CMV

Zidovudin- pigmentation on skin, nails

Atypical Ulcers

- Atypical, large, persistent, non-specific & painful ulcers.
- Multiple etiologies like Lymphoma, Kaposi's Sarcoma, squamous cell carcinoma.
- Treatment: Topical/systemic steroids

Recurrent apthous stomatitis

- An immunologic disorder
- In severe cases may involve oropharynx, esophagus or other parts of GIT.
- Treatment: topical/intralesional corticosteroids, Chlorhexidine, Antimicrobial rinses, Oral tetracycline rinses.

Sialadenitis & Xerostomia

Salivary gland enlargement

Parotid: most commonly involved

Lymphocytic infiltration of gland

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saliva producing cell suppression

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Xerostomia

Candidiasis due to reduced salivary flow.

Treatment: not definitive; symptomatic

Gingival & Periodontal Disease

Linear gingival erythema

- Persistent, linear, easily bleeding, erythematous gingiva.
- Not proportionate to the amount of plaque
- No ulceration, pocketing or attachment loss
- May be localized/generalized
- May be limited to

-Marginal tissue

-Extend into attached gingiva

in a punctate or diffuse erythema

or extend into alveolar mucosa

Treatment

- Scaling & Polishing
- Subgingival irrigation with Chlorhexidine or 10% Povidone- iodine.
- Patient educated for meticulous oral hygiene.
- Re-evaluation after 2-3 weeks.
- If fungal etiology suspected systemic antifungal agents such as Fluconazole for 7- 10 days
- Careful monitoring of the pt. for developing more severe forms of periodontal conditions.
- 2-3 month recall maintenance

Necrotizing Ulcerative Gingivitis (NUG)

-Increased incidence in HIV positive individuals

-localized/generalized ulceration

-necrosis &/or destruction of interdental papillae covered with fibrinous slough

-Red & swollen gingiva with yellowish-grayish marginal areas of necrosis with loss of interdental papillae.

-May be extremely painful

Necrotizing Ulcerative Periodontitis

- Soft tissue necrosis, rapid periodontal destruction, and interproximal bone loss
- Localized/generalized
- Bone is often exposed, resulting in necrosis and subsequent sequestration
- severely painful
- patients may undergo spontaneous resolution of the necrotizing lesions, leaving painless, deep interproximal craters that are difficult to clean and may lead to conventional periodontitis

Necrotizing Ulcerative Stomatitis

- Occasionally reported
- Necrosis of significant areas of oral soft tissues and underlying bone

Treatment

- Application of topical anaesthetic
- Debridement with cotton pellet soaked in peroxide.
- Repeated every day/alternate day for 1st week.
- After initial healing- scaling & root planing.
- Chlorhexidine(0.12%) should be prescribed.
- Avoid tobacco, alcohol.
- Systemic antibiotics in case of severe tissue destruction or systemic symptoms.
- Metronidazole is the drug of choice
- Prophylactic antifungal medication can be given.
- Revaluation of periodontium after 1 month.

Periodontal Treatment Protocol

- Safe & effective management

Health Status

- Determined from history, physical evaluation & consultation with patient's physician.
- Healthy & asymptomatic patient- routine dental procedures including surgical procedures can be done.

Infection Control

- Universal or standard infection control precautions should be carried out.

-hand-washing,

-effective barrier precautions,

-appropriate cleansing and sterilization of instruments and dental equipment & other surfaces,

-safe handling and disposal of sharp instruments.

- **Goals of therapy**
- Primary goal – restoration & maintenance of oral health, comfort & function.
- Conservative non-surgical periodontal therapy is the treatment option
- Elective surgical periodontal procedures with informed consent & medical consultation.

- **Maintenance Therapy**
- Patient should maintain meticulous oral hygiene
- Recall visits – 2-3 months
- Regular blood & other laboratory tests
- Regular consultation & co-ordination with patient's physician is necessary.

THANK YOU