Oral Signs of Systemic Disease

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Why do you need to know?

- AHA! I diagnosed your systemic disease – less likely
- Helping your patients with known systemic diseases - more likely

Normal or Abnormal?

- The hardest part of oral pathology

Clinical description

- Type of abnormality (shape)
- Number
- Colour
- Consistency
- Size - measure accurately
- Surface texture
- Location
Vocabulary

- Ulcer
- Vesicle/Bulla
- Macule
- Patch
- Plaque
- Polyp- sessile or pedunculated

Clinical description

- Type of abnormality (shape)
- Number
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Differential Diagnosis

- Erythema multiforme
  - How long has it been present?
  - Any skin lesions?
- Primary herpes
  - How long has it been present?
  - Any other symptoms – malaise, fever?
  - Have you ever had a cold sore?
- Mucous membrane pemphigoid
  - Any genital or eye lesions
  - Any blisters?
- Pemphigus vulgaris
  - Any skin lesions?
  - Any blisters?
- Lichen planus
  - Any skin lesions? – Itchy red bumps?
  - Any lacy white lines?

What information will help you narrow down this list?
Most likely diagnosis

- Pemphigus vulgaris

Pemphigus Vulgaris

- Autoimmune vesiculobullous (blistering) condition of mucous membranes and skin
- Rare, but important
- Average age – 50-60
- Women = men
- Chronic condition

To Diagnose

- Usually refer to Oral Path/Oral Med, or Dermatologist or Oral Surgeon to biopsy and do blood tests

- Need 2 biopsies
  - One in formalin for regular histo exam
  - One in Michel's medium for immunofluorescence (IF) histological examination
  - Needle test for pemphigus (IF)
- The IF tests can only be done at some labs
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Treatment

- Usually systemic treatment needed by Dermatologist
  - Systemic steroids
  - Steroid sparing medication (mycophenolate, azothiaprine)
  - Maybe Rituximab (monoclonal Ab against B lymphocytes)
  - Topical steroids not very effective, but may help a little

Description

- Entire tongue
- Red (erythematous)
- Smooth surface (loss of papilla)
- Fissures (may have been before)
- 2-3 small ulcers? or erosions?

Differential Diagnosis of atrophic glossitis

- Iron deficiency anemia
- Vitamin B deficiencies
  - B12, B9 (folate)
- Atrophic candidiasis
- Xerostomia?
- Variation of normal?
- Burning tongue syndrome?
Differential Diagnosis of atrophic glossitis
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- Vitamin B deficiencies – B12, B9 (folate)
- Atrophic candidiasis
- Xerostomia?
- Variation of normal?
- Burning tongue syndrome? NO tongue appears normal looking

How to diagnose?
- Iron deficiency anemia
- Vitamin B deficiencies – B12, B9 (folate)
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Anemia vs Candidiasis?
- Ask patient to see MD to rule out anemia
- Treat with nystatin oral suspension:
  - Rinse for 1 minute with 5 mls of nystatin suspension, and then spit out.
  - Use four times a day for 1 week.
  - Dispense 200 mls

Anemia
- Decrease in # of red blood cells or decrease in hemoglobin
- Many causes, eg.
  - Blood loss
  - Iron deficiency
  - B12 deficiency
  - Other B vitamins (eg. folate) deficiency

Oral signs of Anemia (iron def)
- Usually none
- Occasionally (rare in North America)
  - Pale mucosa
  - Bald tongue (loss of papilla) also known as atrophic glossitis, diffuse or patchy
  - Sore tongue or burning tongue
  - Angular cheilitis
  - Candidiasis
- Other Symptoms – none or fatigue, lightheaded, headaches, palpitations, SOB

Diagnosis
- Generally diagnosed by MD
- If you think it is possible from oral appearance and symptoms
  - Suggest pt see MD and get blood tests for anemia. CBC (includes hemoglobin), iron, TIBC, ferritin.
  - Covered by provincial health insurance if done by MD
- Most dentists cannot order blood tests

Iron Deficiency Anemia
- Causes
  - Excessive blood loss (menstr, ulcer)
  - Up to 1% of women of childbearing age
  - Decreased iron intake
  - Decreased absorption of iron
- Tmt
  - MD to find out cause and treat
  - Dietary iron supplements usually reverse the anemia, may take months
Angular chelitis - trmt
- Nystatin ointment
- Dispense: 30 gms
- Apply small dab to corners of mouth qid (after meals and before bedtime).

Description
Generalized gingival enlargement
- Dark red, and some dark pink areas
- Smooth surfaced
- On attached gingiva & onto alv mucosa
- Abundant plaque
- Possibly bleeding

Differential Diagnosis
- Drug induced gingival overgrowth
- Hyperplastic gingivitis
- Leukemia

What information will help you narrow this list down?

Diagnosis
- Med Hist
  - Drugs
  - Current state of health
  - Duration of the problem
  - Other signs and symptoms
    - Fatigue, easy bruising, unusual bleeding

Drug induced gingival overgrowth
- What would you expect?

Leukemia
- Leukemia - too many WBC
- Leukemic infiltrate in gingiva most often in AML (acute myeloid leukemia)
- Acute – rapidly progressive
AML
- Fever
- Lethargy and fatigue
- Shortness of breath
- Pale skin
- Frequent infections
- Easy bruising
- Unusual bleeding, such as frequent nosebleeds and bleeding from the gums

Leukemia
- Acute myelogenous leukemia
  - Can present as swollen red-purple gingiva
  - Localized or generalized
  - If present, associated with malaise, fatigue, and bruising
- Why?
  - Gingival enlargement is not common
- Do you need to diagnose this?

Diagnosis of AML
- Do not biopsy gingiva
- Get patient to a physician quickly to get CBC – complete blood count
- If not sure – could refer to Oral Surgeon, Oral Medicine, Oral Pathologist, or Periodontist, but quickly

Treatment
- AML treated by oncologist, admitted, and get chemo right away
- AML gingiva – as dentists how can we help?

Description
[Image of gingiva]

Differential Diagnosis
- Lichen planus
- Lichenoid reaction to ??
- Lupus
- Graft vs host disease (GVHD)

How can we tell the difference?

Treatment
- AML treated by oncologist, admitted, and get chemo right away
- AML gingiva – how do you treat?
  - “10 foot pole”
  - No scaling, no prophy, no touching
  - Gentle chlorhexadine (no alcohol) rinse
  - The treatment is chemotherapy by the oncologist

Two weeks after chemo started, gingiva much better, no dental treatment!

Diagnosis
- History to see if patient has a diagnosis of
  - Lichen planus
  - Lupus
  - History to see if pt had a bone marrow transplant (for GVHD)
- If not, refer for:
  - Biopsy (lichen planus vs lupus)
  - Blood test for systemic lupus (not usually positive in chronic cutaneous lupus eryth.)
**Lupus erythematosis**
- Autoimmune condition
- Mucocutaneous (can affect skin and mucous membranes) +/- systemic
- Common
- Average age onset – 30
- Women much > men
- Chronic condition

**Lupus – oral signs**
- Looks like lichen planus but:
  - Less common
  - Not common to be the first presenting sign of lupus
  - More common on hard palate than lichen plaques
  - White areas "feathery" rather than "lacy"
  - May be seen on lower lip
  - Different skin lesions

**Treatment**
- Oral lesions usually respond to the systemic treatment for systemic lupus
- Oral steroids for oral lesions if necessary
  - Only if symptomatic
  - Start with OraCort
    - 5 gms tube, apply small dab to sore area tid for 2 weeks and taper off
- Stronger treatment by rheumatologist if needed

**Description**
- Yellow colour of mucosa, more in soft palate
- Shallow ulcer on side of tongue

What is your differential diagnosis?
Jaundice
- Yellow colour of mucosa, more in soft palate, lingual frenum
- Yellow colour to skin
- Yellow colour to sclera of eye

Differential Diagnosis
- Jaundice
- Normal
- Hypercarotenemia

Differential Diagnosis
- Jaundice — yellow skin, mucous membranes, and sclera
- Hypercarotenemia — orange skin and mucous membranes
- Bad spray on tan — yellow or orange skin only

Jaundice
- Too much bilirubin in the bloodstream settles in the tissues.
- Bilirubin from breakdown of Hb in RBCs
- Non-specific — can be due to
  - Excessive breakdown of RBCs
  - Damaged liver can’t process bilirubin
  - Blocked bile ducts — bilirubin can’t be excreted

Jaundice
- Excessive breakdown of RBCs
- Hemolytic anemia
- Damaged liver can’t process bilirubin
- Infections (e.g., Hepatitis)
- Toxins (alcohol or other drugs)
- Cirrhosis
- Blocked bile ducts
- Gall stones, less common — cancer
- Immature liver not processing bilirubin
- At birth

Diagnosis
- Do not do dental treatment if jaundiced and reason not known.
- Refer to MD to determine cause and treat.
- If jaundice due to cirrhosis, and urgent dental treatment needed, refer to hospital dental clinic or Oral Surgeon.

Cirrhosis
- Fibrosis of the liver (& abnormal regen)
- Caused by high alcohol, Hep C or other
- May have bleeding problems
- Ask if increased bleeding or bruising
- Need to consult with MD.
Differential Diagnosis
- Lymphoma
- Leukemic gingiva
- Kaposi’s sarcoma
- Hemangioma

How to diagnosis
- Ask about malaise, fatigue, bleeding or other systemic symptoms (for leukemia)
- Ask about medical history (HIV?)
- How long has it been present (hemangiomas are present soon after birth)
- If leukemia and hemangioma ruled out – likely refer for biopsy

Kaposi’s Sarcoma
- Malignant tumour caused by human herpes virus 8 (HHV8 or KSHV)
- In North America mainly seen in HIV positive patients
- Multiple or single red – purple macules at first, then nodules
- Skin of face, legs, or oral
- Oral – hard palate, gingiva and tongue

Kaposi’s sarcoma - treatment
- By HIV physician
- Usually shrink with antiretroviral therapy
- Occ intraleional chemo injected into lesions

Differential Diagnosis
- Gingivitis
- Plasma cell gingivitis
- Lichen planus
- Mucous membrane pemphigoid
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Differential Diagnosis
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- Plasma cell gingivitis
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- Erythema multiforme
Differential Diagnosis

- Lichen planus
- Mucous membrane pemphigoid
- Pemphigus vulgaris

What else can you ask to help narrow it down?

2015-08-29

Differential Diagnosis

- Mucous membrane pemphigoid most likely
- Can have eye lesions or genital lesions, but often have only oral lesions.

How do you confirm the diagnosis?

Mucous Membrane Pemphigoid

- Autoimmune vesiculobullous (blistering) condition of mucous membranes
- Uncommon, maybe 5 X as common as pemphigus vulgaris
- Average age – 50-60
- Women > men
- Chronic condition

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Diagnosis

- Refer for biopsy with IF
  - Difficult to biopsy

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Diagnosis

- Refer for biopsy with IF
  - Difficult to biopsy
- Blood test to rule out pemphigus vulgaris
- After diagnosis
  - refer to dermatologist
  - refer to ophthalmologist

2015-08-29

Treatment

- Difficult
- Oral - topical steroids
  - Strength depends on severity
  - Paste or gel, or ointment or rinse, trays
  - Amount varies
  - Excellent oral hygiene
  - If this is not enough – refer to dermatologist for systemic medications

2015-08-29

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- Variation of normal

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- Iron deficiency anemia
- Vitamin B deficiencies
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- Atrophic candidiasis
- Geographic tongue (erythema migrans)
- Variation of normal

Diagnosis
- Look for the classic appearance of geographic tongue
- Treat for candidiasis
- Ask MD to check for anemia, iron, ferritin, B12 and folate

Diagnosis
- Generally diagnosed by MD
- If you think it is possible from oral appearance and symptoms
- Suggest pt see MD and get blood test for hemoglobin and B12
- Covered by provincial health insurance if done by MD
- Most dentists cannot order blood tests

Oral signs of B12 anemia
- None or
- Occasionally
  - Bald tongue (loss of papilla) – patchy or diffuse
  - Red tongue (due to loss of papilla)
  - Other red mucosa irrotationally
  - Burning tongue
  - Burning lips, buccal mucosa
- Symptoms – none or fatigue, weakness, SOB, lightheaded, headache, pallor

B12 deficiency
- Causes
  - Diet low in B12 (found in meat, eggs, milk)
  - Chronic alcoholism
  - Inability to absorb B12 (pernicious anemia)
- Trmt
  - MD to find cause and treat
  - Oral supplements of B12 occasionally work
  - B12 injections monthly if pernicious anemia

Description
- Crohn’s disease
  - Inflammatory bowel disease
  - Occ can see oral lesions
  - Usually teenagers when symptoms start
  - Abdominal cramping, pain, nausea and diarrhea

Crohn’s disease
- Linear ulcers in buccal vestibule
- Leaf-like soft tissue folds in vestibules
- Patchy red macules and papules on gingiva
- Cobblestone appearance of mucosa
- Possibly aphthous ulcers
- Commonly seen in Crohn’s patients, but uncommon to be the first signs
If Crohn’s disease is suspected from oral lesions, refer to Oral Path or Oral Surgeon to biopsy (rare).

If known Crohn’s disease, treatment is usually systemic medication given by GI specialist.

**Differential Diagnosis**
- Gingivitis
- Mucous membrane pemphigus
- Lichen planus
- Pemphigus vulgaris
- Allergic reaction/plasma cell gingivitis
- Leukemia

**Diagnosis**
- Look elsewhere in mouth for lacy white (lichen planus)
- Look elsewhere in mouth for blisters (pemphigoid or pemphigus)
- Look on skin for skin blisters (pemphigus vulgaris)
- Look for eye lesions, or ask about other mucous membrane (pemphigoid)
- Biopsy with immunofluorescence, blood tests

**Lichen planus**
- Fairly common, chronic condition affecting skin or mucous membranes
- Immunologically mediated condition
- Oral lichen planus affect approx .2% to 2% of population
- Usually middle aged
- Women > men

**Diagnosis**
- Clinical diagnosis if classic
  - Age
  - Appearance
  - Locations
- Biopsy
  - If not classic
  - If not responding to treatment
  - If need to rule out other conditions (PV, MMP)

**Treatment**
- No trmt if asymptomatic
- OraCort if symptomatic
- If stronger steroids needed- refer to specialist

**Treatment**
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- OraCort if symptomatic
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Acromegaly
- Excess of growth hormone
- Usually due to adenoma in pituitary gland
- Usually takes years to diagnose
- Treatment is removal of the adenoma

Do you have a tendency to bleed or bruise easily?
- No
  - Then continue with medical history
- Yes

If yes, ask- do you have
- Excessive bleeding after operations?
- Excessive bleeding after dental treatment?
- Excessive bleeding in relatives?
- Spontaneous bleeding?
- Excessive bruising?
- Spontaneous bruising?
- Diagnosis if known
- Medications
Differential Diagnosis

- On blood thinner
  - Eg. Coumadin, Pradax, Eliquis, etc
- Low platelets
  - Eg. From cirrhosis, leukemia
- Clotting disorder
  - Eg. Hemophilia
- Other

R.O.S. for known bleeding problem

- Type of bleeding problem
- Date of diagnosis
- Name, info of MD
- Review of other systems, eg GI system for liver disease, CV system
- Medications
- Monitoring eg. INR for warfarin

Differential Diagnosis

- Candidiasis
- Hairy leukoplakia
- Tongue biting
- Lichen planus
- Leukoplakia

Diagnosis

- Medical history (HIV)
- Ask if pt chews on tongue
- Look elsewhere in the mouth for lichen planus
- Look elsewhere in the mouth for candidiasis
- If none of the above – consider sending to MD for HIV test, and refer for biopsy

Hairy Leukoplakia

- Caused by Epstein Barr virus in immunocompromised pt (usually HIV, but also some transplant patients)
- Not usually treated

Oral signs seen in HIV pts

- Kaposi’s sarcoma
- Hairy leukoplakia
- Candidiasis (but not usually)
- Other infections – condyloma
  - Herpes
  - Deep fungal