

Importance Of Oral Pathology In Clinical Dentistry

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ABSTRACT-

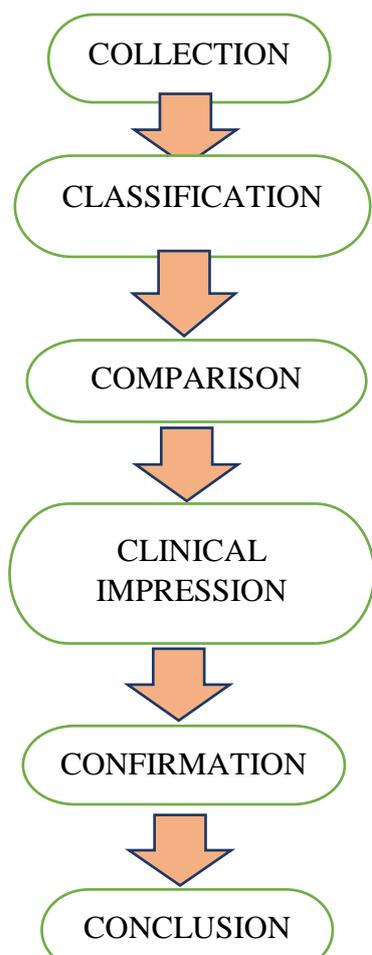
Dentists usually comes across hard and soft lesions of the oral cavity. Most commonly these conditions do not have a diagnostic crisis for a dental surgeon. Still the dentistsare sometimes annoyed with a lesion because of not only the challenging diagnosis but also about the choice of treatment. This review article gives a systematic and logical approach for diagnosis of oral lesions which we come across in dental practise.

Key words: *Dental clinician, differential diagnosis, History, oral pathology.*

INTRODUCTION

An oral pathologist needs a good knowledge about the oral lesions and conditions since it is a fundamental requirement for a successful dental clinician. Usually majority of dentists detects caries or periodontitis which are the two most common lesions of the oral cavity. Based on the diagnosis, treatment is planned. Treatment plan becomes critical sometimes,because if reversible and irreversible pulpitis or a benign and a malignant neoplasm were not distinguished properly. Role of pathology is imperative for diagnosing premalignant lesion graded as mild, moderate or severe dysplasia and carcinoma in situ.¹Preliminary diagnosis in dental practice is based upon comprehensive and methodical history taking and observation of clinical features. Clinician sometimes confirms the diagnosis through biopsy or other methods since they should never give a diagnosis depending on insight or guesswork.

STEPS FOR DIAGNOSIS (six 'C's)



STEP 1: COLLECTION

Information is collected through thorough history taking, which is usually neglected. It is a professional responsibility for every clinician to know patient's complete medical history since it may affect dental treatment. Another important thing is to take medication histories in order to prevent medication errors and related risks to patients and also to detect drug-related clinical and/or pathological changes.² Although diagnosis appears to be self-evident by inspection alone, existing diseases might be undetected and untreated.³ History taking promotes a good doctor-patient relationship and it also saves the necessity for expensive laboratory procedures.

STEP 2: CLASSIFICATION

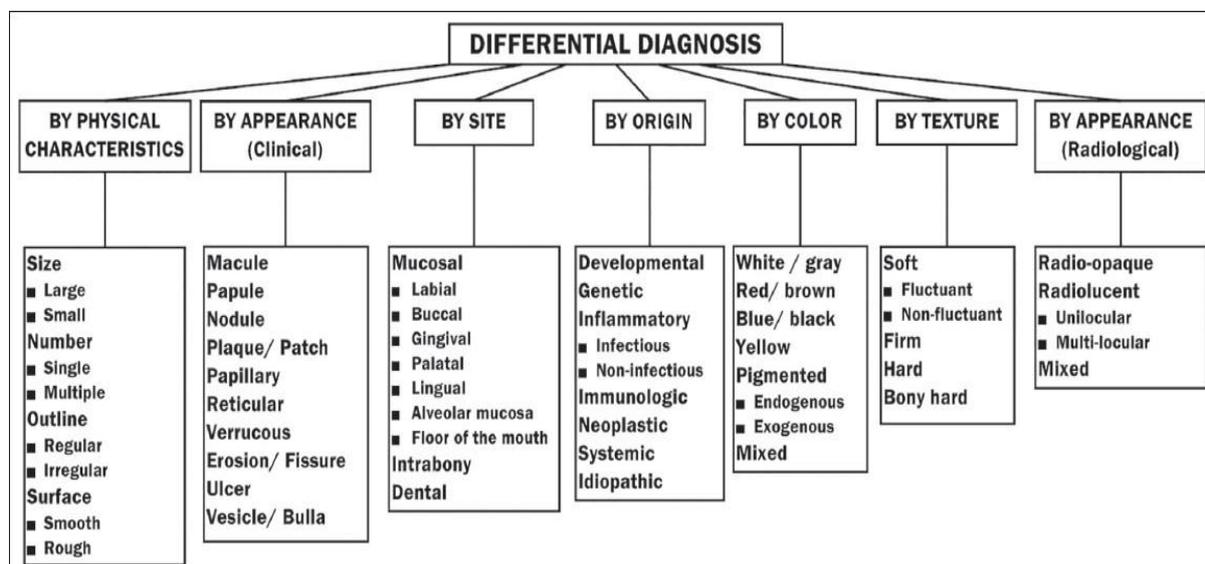
Oral lesions are categorized based upon:

- Colour change (white, red, blue, pigmented or combined),
- Loss of integrity of the mucous membrane (erosion, fissure, or ulcer, which may be primary or secondary),
- Growth or swelling,
- Lesions involves tooth and/or bone, either alone or combined with other soft tissue lesions,
- Syndrome

When an oral lesion is detected by a dentist, he/she should first try to categorize the lesion based on any of these categories.

STEP 3: COMPARISON

Differential diagnosis plays a major role in diagnosing an oral lesion. Following factors are considered for differential diagnosis:



- Clinical appearance might predict the nature of the lesions.
- Certain sites are common for some lesions e.g., Pyogenic granuloma is commonly seen in gingiva and unlikely to be observed on floor of the mouth; Ranula is usually observed on the floor of the mouth and is not on gingiva.
- Palpation of the lesions provide an indication of the nature of the lesions.

- Colour of the lesion is very useful for detecting a lesion e.g., Leukoplakia (homogenous white lesion) can be observed in persons who have tobacco consuming habit; Amalgam tattoo (pigmented lesion in the gingiva due to faulty Class II amalgam restoration).
- Radiographs are necessary for intrabony lesions for detecting whether it is radiolucent (for, e.g., ameloblastoma, keratocyst), radiopaque (for, e.g., osteoma, odontoma) or mixed (for, e.g., Pindborg tumor, Gorlin cyst). Certain lesions have a specific radiographic characteristic which helps in diagnosis e.g., cotton wool appearance of Paget disease, moth-eaten feature of osteomyelitis, sun-ray manifestation of osteosarcoma, and ground glass appearance of fibrous dysplasia.
- However, a dental clinician should not come to a diagnosis based on radiographic appearance only because e.g., cotton wool appearance is not limited to Paget disease but can also be observed in condensing osteitis.

STEP 4: CLINICAL IMPRESSION

A dental clinician must correlate with history, age, gender, clinical characteristics (appearance, site, location, signs and symptoms), radiological appearance and other possible causes before arriving to a definite diagnosis.

EXAMPLES:

- A white line on the buccal mucosa along the occlusal level is undoubtedly linea alba and it does not need either investigations nor treatment.
- Leukoedema - a bilateral white lesion on the mucosa which disappears while stretching buccal mucosa. does not offer any difficulty in diagnosis. However, diagnosis is not always that simple.

Following flowchart gives a logical approach to a white lesion of the oral mucosa and diagnostic criteria for a gingival growth or swelling.

Figure 1: Logical approach to a white lesion of the oral mucosa

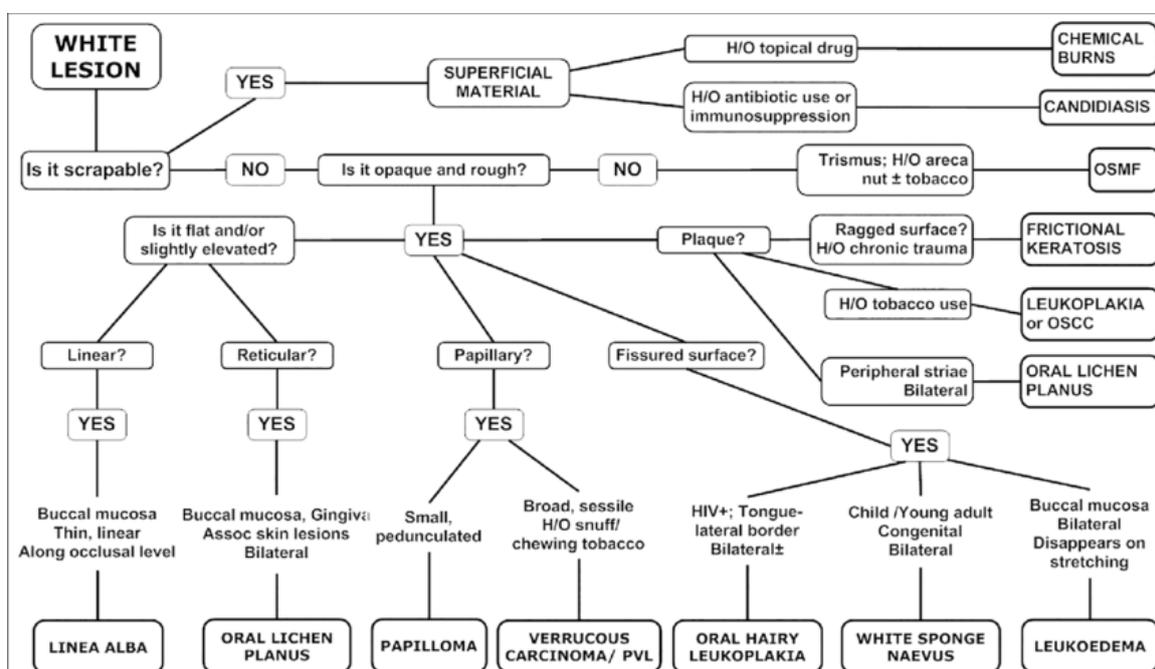
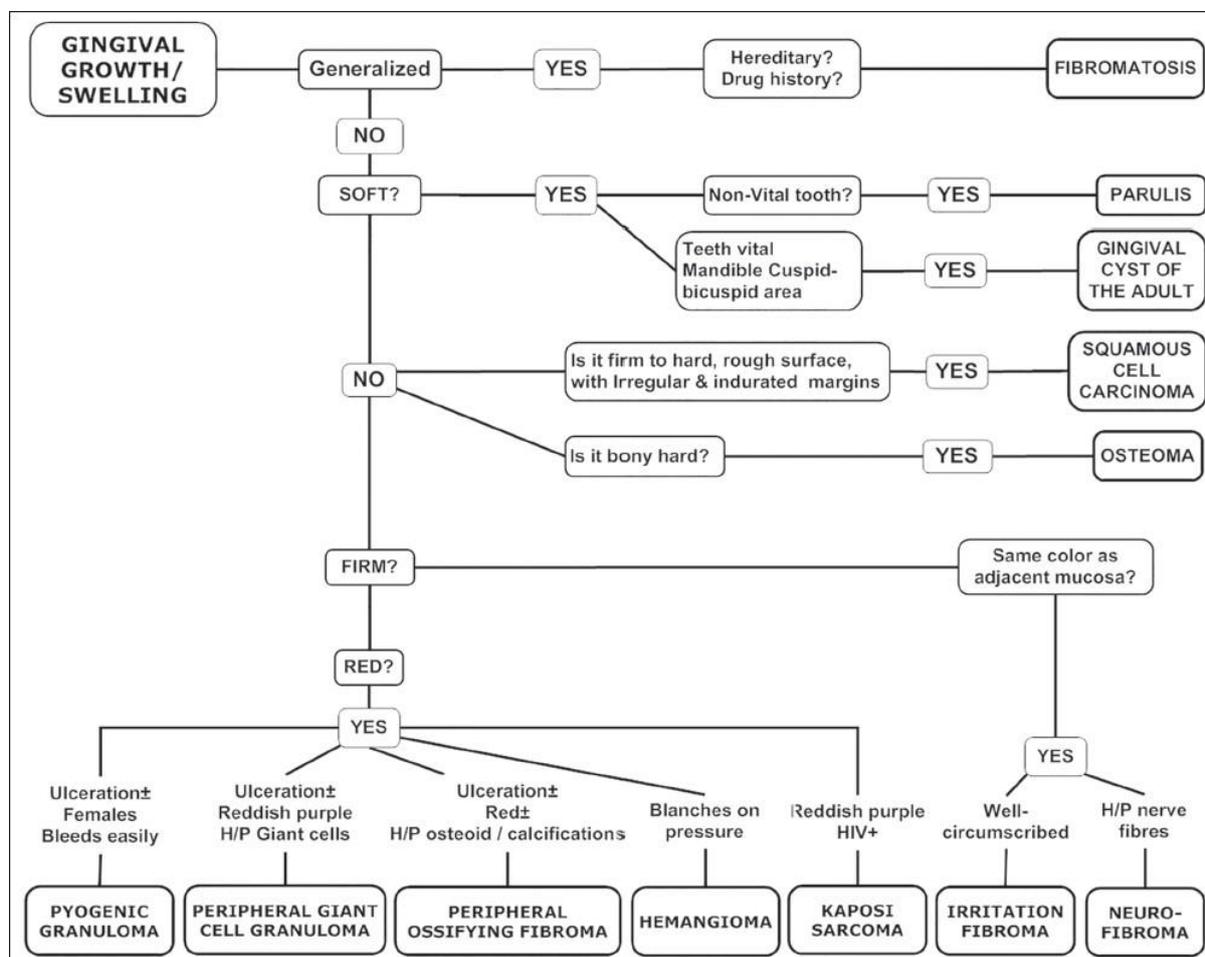


Figure 2: Gingival growth or swelling



STEP 5: CONFIRMATION

- For some lesions even though the dental clinician are definite about clinical diagnosis, confirmation is necessary.
- In certain situation, radiographs (intra oral periapical, orthopantomogram, or computed tomography scan etc..) or laboratory investigations (HIV testing, serum Ca and alkaline phosphatase levels, haemoglobin estimation) or exfoliative cytology or biopsy are required for confirmation.
- Dental Clinician may accomplish procedures like punch biopsy on their own. The following Table tabulate oral lesions suitable for biopsy in general dental practice.

Table 1: ORAL LESIONS SUITABLE FOR BIOPSY IN GENERAL DENTAL PRACTICE

<ul style="list-style-type: none"> • Fibroma (fibroepithelial polyp, fibrous epulis, inflammatory fibrous hyperplasia, irritation fibroma) • Pyogenic granuloma • Peripheral giant cell granuloma • Papilloma Mucocele (with care not to rupture it) • Lichen planus (if diagnosis is unclear)

- Larger lesions or suspicious malignancies need an incisional biopsy but smaller lesions < 1 cm should be excised completely.
- Tissue for biopsy should be collected carefully from a particular site of the lesion and it is placed in a wide-mouthed container with 10% buffered formalin for fixation.
- If it is a bloody specimen, then it must be washed in saline before placing in the fixative; the fixative volume should be at least 10 times the volume of the specimen for optimal and rapid fixation.⁴
- Saline is not an alternative for formalin fixation. Some studies have expressed that if tissue for biopsy is placed in saline for 1 hr, and then placed in formalin fixative, tissue distortion (cell vacuolization in basal layer of epithelium and decreased cohesiveness of collagen fibres in the connective tissue) occurs. Hence diagnosis appears to be problematic.⁵
- In case of immunofluorescence, two tissue samples are necessary for vesiculobullous lesions and/or autoimmune disorders:
 - One in formalin for routine staining and
 - Other in Michel's solution for direct immunofluorescence.⁶
- Container must be compactly sealed and properly labelled with patient's name, age, gender and site. In case biopsy has been taken from multiple sites, different bottles are used denoting the site (right or left sides).
- Then specimen should be handed over to an oral pathologist with relevant documents.

STEP 6: CONCLUSION

Dentistry is an art. Earlier diagnosis depends upon the history and clinical features. The dental clinician should concentrate several causative factors and possible diagnostic factors – where clinician may require collection of more information and in-depth clinical examination. At certain times, when there is no correlation between clinical diagnosis and etiological factors or the laboratory results or radiological investigations, the pathology (biopsy report) issues the final diagnosis.

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