

Periodontal Examination and Diagnosis

((Proper diagnosis is essential to intelligent treatment))

Periodontal diagnosis should first determine whether disease is present. It should then identify the disease, and its severity and extent. Finally, it should provide an understanding of the underlying pathologic processes and their causes.

1-Health history ((Most of the medical history is obtained in the first visit))

The importance of the health history should be clearly explained, because patients often forget information that they cannot relate to their dental problems.

The health history should include reference to the following:

1. If the patient is under the care of a physician, the nature and duration of the problem and its therapy should be discussed.
2. Details regarding hospitalizations and operations, including the diagnosis, the type of operation, and any problematic events (e.g. Anesthetic, hemorrhagic, or infectious complications) should be provided.
3. All medical problems (e.g., cardiovascular, hematologic, endocrine), including infectious diseases, sexually transmitted diseases, high-risk behavior for human immunodeficiency virus infection, and possible occupational disease, should be questioned.
4. Abnormal bleeding tendencies, such as nosebleeds, prolonged bleeding from minor cuts, spontaneous ecchymosis, a tendency toward excessive bruising, and excessive menstrual bleeding, should be cited. These symptoms should be correlated with the medications that the patient is taking.
5. Information is needed for females regarding the onset of puberty, menopause, menstrual disorders, pregnancies, and miscarriages.
6. A list of all medications being taken. All of the possible effects of these medications should be carefully analyzed to determine their effect. Special inquiry should be made regarding the dosage and duration of therapy with **anticoagulants and corticosteroids**. Patients who are taking any of the family of drugs called **bisphosphonates** (e.g., Actonel, Fosamax, Boniva, Aredia, Zometa), which are

often prescribed for osteoporosis, should be cautioned about possible problems **related to** osteonecrosis of the jaw after undergoing any form of oral surgery involving bone.

7. The patient's allergy history should be taken, including that related to hay fever, asthma, sensitivity to foods, sensitivity to drugs (e.g., aspirin, codeine, barbiturates, sulfonamides, antibiotics, procaine, laxatives), and sensitivity to dental materials (e.g., latex, eugenol, acrylic resins).

8. A family history should be taken, including that of bleeding disorders, cardiovascular disease, diabetes, or periodontal diseases.

9. Detailed information on current and history of alcohol, recreational drugs, and tobacco use, and desire to quit should be elicited.

What is the relevance of a patient's medical history to periodontal care?

- Medical problems can increase susceptibility to periodontal diseases (e.g., **diabetes and HIV**).
- Medical problems can have periodontal and other oral manifestations (e.g., **leukaemia and mucocutaneous disorders**).
- Prescribed and non-prescribed medications can have oral and periodontal side effects (e.g., **calcium channel blocker or phenytoin**).
- Precautions to be taken to avoid complications during or after treatment (e.g., **antibiotic prophylaxis and patients on certain medications such as anticoagulants**).
- Treating certain conditions may present additional risk to the dental team (e.g., **communicable diseases**).

2-Dental History

1. Visits to the dentist should be listed, including their frequency, the date of the most recent visit, the nature of the treatment, and oral prophylaxis or cleaning by a dentist or hygienist, including the frequency and date of most recent cleaning.

2. The patient's oral hygiene regimen should be described, including tooth brushing frequency, time of day, method, type of toothbrush and dentifrice, and interval at

which brushes are replaced. Other methods for mouth care, such as mouthwashes, interdental brushes, other devices, water irrigation, and dental floss, should also be listed.

3.Any orthodontic treatment, including its duration and the approximate date of termination, should be noted.

4.If the patient is experiencing pain in the teeth or in the gingiva, the manner in which the pain is provoked, its nature and duration, and the manner in which it is relieved should be described.

5.Note the presence of any gingival bleeding, including when it first occurred; whether it occurs spontaneously, on brushing or eating, at night.

6.A bad taste in the mouth and areas of food impaction should be mentioned.

7.If the patient has any difficulty chewing, and whether there is any tooth mobility.

8.Note the patient's general dental habits, such as grinding or clenching of the teeth during the day or at night ,tobacco smoking or chewing, nail biting.

9.Discuss the patient's history of previous periodontal problems, including the nature of the condition, and, if it was previously treated, the type of treatment received (surgical or nonsurgical).

10.Note whether the patient wears any removable prosthesis.

11.Does the patient have implants to replace any of the missing teeth

3-Social history

1) Details of habits such as tobacco use, including smokeless tobacco and alcohol consumption.

2)A social history may also give information about the patient's occupation that is both useful for interacting with the patient and may indicate specific dental issues.

4-Casts

Casts from dental impressions are useful adjuncts during the oral examination which show the :-

- The position of the gingival margins (recession).

- Indicate the position and inclination of the teeth.
- The proximal contact relationships.
- The food impaction areas.
- In addition, they provide a view of the lingual–cuspal relationships.
- Casts are important records of the dentition before it is altered by treatment.
- Finally, casts also serve as visual aids during discussions with the patient, and they are useful for pre-treatment and post-treatment

5- Intraoral Radiographic Survey

The radiographic survey should consist of a **minimum of 14 intraoral films and 4 posterior bite-wing films. Panoramic radiographs** are a simple and convenient method of obtaining a survey view of the dental arch and the surrounding structures. They are helpful for the detection of developmental anomalies, pathologic lesions of the teeth and jaws, and fractures as well as for the dental screening examinations of large groups. They provide an information about the distribution and severity of bone destruction with periodontal disease.

6-Clinical Photographs

Color photographs are useful for recording the appearance of the tissue before and after treatment.

Oral Examination

1)Oral Hygiene

The hygiene of the oral cavity is assessed in terms of **the extent of accumulated food debris, plaque, and tooth surface stains. Disclosing agent** may be used to detect plaque that would otherwise be unnoticed. The amount of plaque detected, however, **is not necessarily related** to the severity of the disease present. **For example**, aggressive periodontitis is a destructive type of periodontitis in which plaque is minimal. Qualitative assessments of plaque are more meaningful.

2) Oral Malodor

Which is also termed **fetor ex ore, fetor oris, or halitosis**, is a foul or offensive odor that comes from the oral cavity. Halitosis may be a diagnostic significance, and their origin may be either oral or extraoral.

3) Examination of the Oral Cavity

- ❖ The entire oral cavity should be carefully examined.
- ❖ The examination should include the lips, the floor of the mouth, the tongue, the palate, and the oropharyngeal region as well as the quality and quantity of saliva.
- ❖ Although findings may not be related to the periodontal problem, the dentist should detect all pathologic changes that are present in the mouth.

4) Examination of the Lymph Nodes

- ☒ Because periodontal, periapical, and other oral diseases may result in lymph node changes, the diagnostician should routinely examine and evaluate the lymph nodes of the head and neck.
- ☒ Lymph nodes can become enlarged as a result of an infectious episode, malignant metastases, or residual fibrotic changes.
- ☒ Inflammatory nodes become enlarged, palpable, tender, and fairly immobile. The overlying skin may be red and warm. Patients are often aware of the presence of “swollen glands.”

Primary herpetic gingivostomatitis, necrotizing ulcerative gingivitis, and acute periodontal abscesses may produce lymph node enlargement.

- ☒ After successful therapy, lymph nodes return to normal in a matter of days to weeks.

5) Examination of the Teeth and Implants

- ❖ The teeth are examined for caries, poor restorations, developmental defects, anomalies of tooth form, wasting, hypersensitivity, and proximal contact relationships.
- ❖ The stability, position, and number of implants and their relationship to the adjacent natural dentition are also examined.

Peri-implantitis:- Can create pockets around implants. Probing is important in diagnosis. To prevent scratching the implant surface we should use plastic instrument.

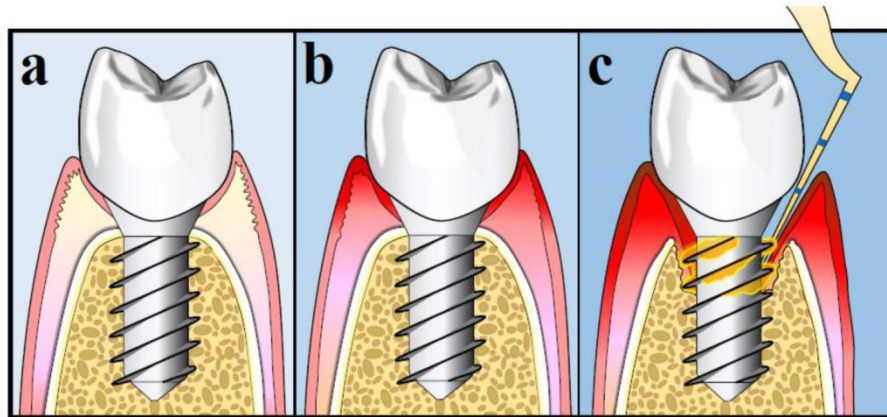


Fig. Peri-implant status, a. Healthy peri-implant tissue, b. Peri-implant mucositis, c. Peri-implantitis.

Wasting Disease of the Teeth

Wasting is defined as any gradual loss of tooth substance characterized by the formation of smooth, polished surfaces.

The forms of wasting are: **Erosion, Abrasion, Attrition & Abfraction.**

Erosion: also called corrosion, is a sharply defined wedge-shaped depression in the cervical area of the facial tooth surface. The surfaces are smooth, hard, and polished. Erosion generally affects a group of teeth. In the early stages, it may be confined to the enamel, but it generally extends to involve the underlying dentin, as well as the cementum. The etiology of erosion is **not known**. Decalcification by acidic beverages, or citrus fruits, combined with the effect of acid salivary secretion are **suggested causes**.

Abrasion: Refers to the loss of tooth substance induced by mechanical wear. Abrasion results in saucer-shaped or wedge shaped indentations with a smooth, shiny surface. Abrasion starts on exposed cementum surfaces rather than on the enamel and extends to involve the dentin of the root. A sharp “ditching” around the cemento-enamel junction appears to be the result of the softer cemental surface, as compared with the much harder enamel surface. Tooth brushing with an abrasive dentifrice, Aggressive tooth brushing and hard tooth brush **are the most common**

causes. Horizontal brushing at right angles to the vertical axis of the teeth results in the **severest** loss of tooth substance.

Attrition: Is occlusal wear resulting from functional contacts with opposing teeth. Such physical wear patterns may occur on incisal, occlusal, and approximal tooth surfaces. A certain amount of tooth wear is physiologic, but accelerated wear may occur when abnormal anatomic or unusual functional factors are present. Occlusal or incisal surfaces worn by attrition are called **facets**.

The angle of the facet on the tooth surface is potentially significant to the periodontium:-

**** Horizontal facets** tend to direct forces on the vertical axis of the tooth, to which the periodontium can adapt most effectively.

****Angular facets** direct occlusal forces laterally and increase the risk of periodontal damage.

Abfraction: Results from occlusal loading surfaces causing tooth flexure and mechanical microfractures and tooth substance loss in the cervical area.

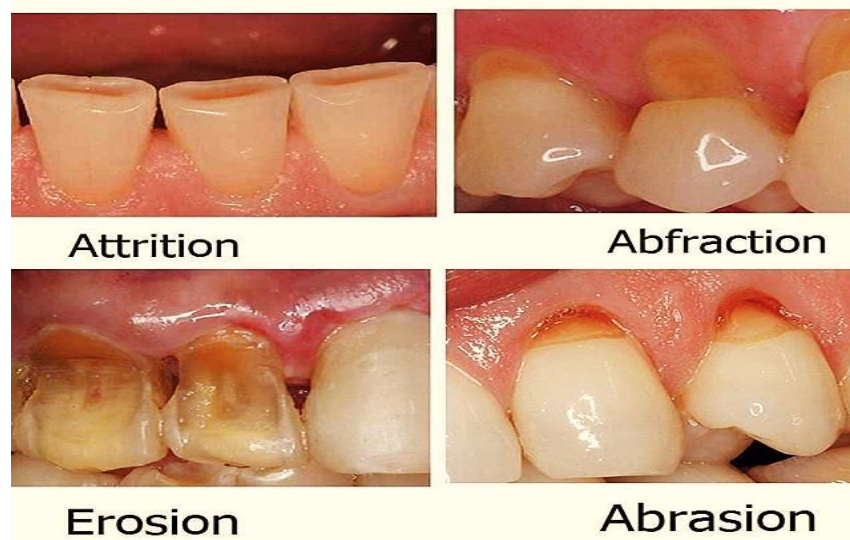


Fig. Wasting disease of the teeth

Dental Stains

Dental stains are pigmented deposits on the teeth. They should be carefully examined to determine their origin.

Hypersensitivity

Root surfaces exposed by gingival recession may be hypersensitive to thermal changes or tactile stimulation. Patients often direct the clinician to the sensitive areas. These may be located by gentle exploration with a probe or cold air.

Tooth Mobility

All teeth have a slight degree of **physiologic mobility**, which varies for different teeth and at different times of the day. It is **greatest** when arising in the morning, and it progressively decreases. The increased mobility in the morning is attributed to slight extrusion of the tooth as a result of limited occlusal contact during sleep. During the waking hours, mobility is reduced by chewing and swallowing forces, which intrude the teeth in the sockets. These 24-hour variations are less marked in persons with a healthy periodontium than in those with occlusal habits such as bruxism and clenching.

***Single-rooted teeth have more mobility than multi-rooted teeth, with incisors having the most mobility.**

Mobility is scored according to the **Miller Index** as follows:

Grade I: is the mobility of the crown 0.2-1 mm in horizontal direction.

Grade II: mobility of the crown of the tooth exceeding 1mm in horizontal direction.

Grade III: mobility of the crown of the tooth in horizontal and vertical direction & the tooth becomes even depressed in its socket

Increased mobility is caused by one or more of the following factors:

1. Loss of tooth support (bone loss) can result in mobility

The amount of mobility depends on the severity and distribution of bone loss at individual root surfaces, the length and shape of the roots, and the root size as compared with that of the crown. A tooth with short, tapered roots is more likely to loosen than one with normal-size or bulbous roots with the same amount of bone loss.

2. Trauma from occlusion (i.e., injury produced by excessive occlusal forces or incurred as a result of abnormal occlusal habits such as bruxism and clenching)

3. Extension of inflammation from the gingiva or from the peri-apical into the periodontal ligament results in changes that increase mobility.
4. Periodontal surgery temporarily increases tooth mobility immediately after the intervention and for a short period.
5. Tooth mobility is increased during pregnancy, and it is sometimes associated with the menstrual cycle or the use of hormonal contraceptives.
6. Pathologic processes of the jaws that destroy the alveolar bone or the roots of the teeth can also result in mobility. Osteomyelitis and tumors of the jaws belong in this category.

Pathologic Migration of the Teeth.

Alterations in tooth position should be carefully noted, particularly with a view toward identifying abnormal forces, a **tongue-thrusting habit**, or other habits that may be contributing factors. **Premature tooth contacts in the posterior region** that deflect the mandible anteriorly contribute to the destruction of the periodontium of the maxillary anterior teeth and to pathologic migration. **The loss of posterior teeth** can lead to the facial “flaring” of the maxillary anterior dentition. This is due to the increased trauma that the mandibular anterior dentition places against the palatal surface of the maxillary anterior dentition. Pathologic migration of the **anterior teeth in young persons** may be a sign of localized aggressive (juvenile) periodontitis.

Sensitivity to Percussion.

Sensitivity to percussion is a feature of acute inflammation of the periodontal ligament. Gentle percussion of a tooth at different angles to the long axis often helps with the localization of the site of inflammatory involvement.

Examination of the Periodontium

The periodontal examination should be systematic, starting in the molar region in either the maxilla or the mandible and proceeding around the arch. It is important to detect the earliest signs of gingival and periodontal disease.

Plaque and Calculus

There are many methods available for assessing plaque and calculus accumulation. The presence of supragingival plaque and calculus can be directly observed, and the amount can be measured with a calibrated probe. For the detection of subgingival calculus, each tooth surface is carefully checked to the level of the gingival attachment with a **no. 17 explorer**. Warm air may be used to deflect the gingiva and to aid in the visualization of the calculus. Although radiographs may sometimes reveal heavy calculus deposits interproximally and even on the facial and lingual surfaces.

Plaque Index:

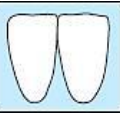

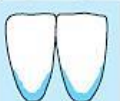
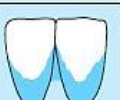
which was introduced by **Silness and Loe** in 1964


Used on all teeth (28, wisdom teeth are excluded) or selected teeth (6 teeth) .

No substitution for any missing tooth.

Used on all surfaces (4)(M, B, D, L).

This index measures the thickness of plaque on the gingival one third of the teeth.

| | | | |
|------------|---|---|--|
| Grade 0 | No Plaque |  | |
| 1 | Thin plaque layer at the gingival margin, only detectable by scraping with a probe |  | |
| 2 | Moderate layer of plaque along the gingival margin; interdental spaces free, but plaque is visible to the naked eye |  | |
| 3 | Abundant plaque along the gingival margin; interdental spaces filled with plaque |  | |



Abbreviation Grade

PI 0-3

Calculus Index (CI)

Calculus is mineralized material on the tooth surface. The calculus index refers to the amount of calculus on a tooth.

CI 0 — No observable calculus.

CI 1 — Supragingival calculus covering not more than 1/3 of the exposed tooth surface.

CI 2 — Supragingival calculus covering more than 1/3 but not more than 2/3 of the exposed tooth surface or presence of flecks of subgingival calculus.

CI 3 — Supragingival calculus covering more than two-thirds of the exposed tooth surface or a continuous heavy band of subgingival calculus around the cervical portion of the tooth.

Gingiva

The gingiva must be dried before accurate observations can be made. Light reflection from moist gingiva obscures detail. In addition to visual examination and exploration with instruments, firm but gentle palpation should be used to detect pathologic alterations in normal resilience as well as to locate areas of exudate. Features of the gingiva to consider include color, size, contour, consistency, position, ease of bleeding, and pain.

Clinically, gingival inflammation can produce two basic types of tissue response: **edematous and fibrotic.**

Edematous tissue response is characterized by a smooth, glossy, soft, red gingiva. With the **fibrotic tissue response**, some of the characteristics of normality persist; the gingiva is more firm, stippled, and opaque; it is usually thicker, and the margin appears rounded.

Gingival Index (GI) (Loe, 1967)

Measures the degree of gingival inflammation. Tissues surrounding each tooth divided into 4 gingival scoring units: distal facial papilla, facial gingival margin, mesial facial papilla, lingual gingival margin.

Score of gingival index

Score 0 Normal gingiva

Score 1 Mild inflammation — slight change in color, slight edema. **No bleeding on probing**

Score 2 Moderate inflammation — redness, edema and glazing. **Bleeding on probing**

Score 3 Severe inflammation — marked redness and edema. Ulceration. **Tendency to spontaneous bleeding**

The GI may be used for the assessment of prevalence and severity of gingivitis in populations, groups and individuals.

Gingival bleeding

Gingival bleeding varies in severity, duration and the ease with which it is provoked. Bleeding on probing is easily detectable clinically and therefore is of great value for the early diagnosis and prevention of more advanced gingival inflammation. **Gingival bleeding on probing is one of the earliest visual signs of inflammation.** It can appear earlier than color changes or any other visual signs of inflammation. **Gingival bleeding on probing** also helps us to determine whether the lesions are in an **active or inactive state.**

Bleeding on probing (BOP)

A periodontal probe is inserted to the bottom of the gingival/periodontal pocket by applying light force and is moved gently along the tooth (root) surface. If bleeding is provoked upon retrieval of the probe, the site examined is considered **positive BOP** and, hence, is inflamed.

Pockets

Is defined as pathologically deepened of gingival sulcus may occur by coronal movement of the gingival margin (gingival pocket), or apical displacement of gingival attachment (periodontal pocket) or combination of the above.

The Signs and Symptoms and probing is the only reliable method of detecting pockets

Clinical signs

- 1- Color changes** (bluish-red marginal gingiva or a bluish-red vertical zone that extends from the gingival margin to the attached gingiva)
- 2- Rolled edge** separating the gingival margin from the tooth surface.
- 3-Enlarged, edematous gingiva** may suggest their presence.

4-The presence of bleeding, suppuration, may also denote the presence of a pocket

Periodontal pockets are generally **painless**, but they may give rise to **symptoms** such as:-

- 1- Localized or sometimes radiating pain
- 2- The sensation of pressure after eating that gradually diminishes.
- 3- Foul taste in localized areas,
- 4- Sensitivity to hot and cold,
- 5- Toothache in the absence of caries is also sometimes present.

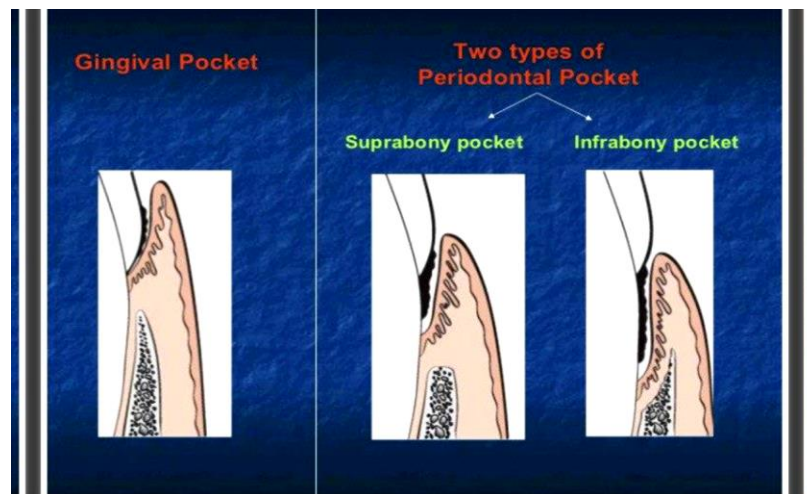


Fig. Gingival pocket Vs. Periodontal pocket

Detection of Pockets

The only accurate method of detecting and measuring periodontal pockets is careful exploration with a periodontal probe. Pockets are not detected by radiographic examination. The periodontal pocket is a soft-tissue change. Radiographs indicate areas of bone loss in which pockets may be suspected, but they do not show pocket presence or depth, and consequently they show no difference before and after pocket elimination unless bone has been modified. Gutta-percha points or calibrated silver points can be used with the radiograph to assist with determining the level of attachment of the periodontal pockets.

There are two different pocket depths:

- (1) The biologic or histologic depth
- (2) The clinical or probing depth

The biologic depth is the distance between the gingival margin and the base of the pocket (i.e., the coronal end of the junctional epithelium). This can be measured only in carefully prepared and adequately oriented histologic sections.

The probing depth is the distance to which a probe penetrates into the pocket.

Probe penetration can vary, depending on the

- 1-force of introduction,
- 2-the shape and size of the probe tip,
- 3- the direction of penetration,
- 4-the resistance of the tissues,
- 5-the convexity of the crown,
- 6-the degree of tissue inflammation.

The probing forces have been explored by several investigators forces of **0.75 N** have been found to be well tolerated and accurate.

Probing Technique

The probe should be inserted parallel to the vertical axis of the tooth and “walked” circumferentially around each surface of each tooth to detect the areas of deepest penetration in addition, special attention should be directed to detecting the presence of interdental craters and furcation involvements.

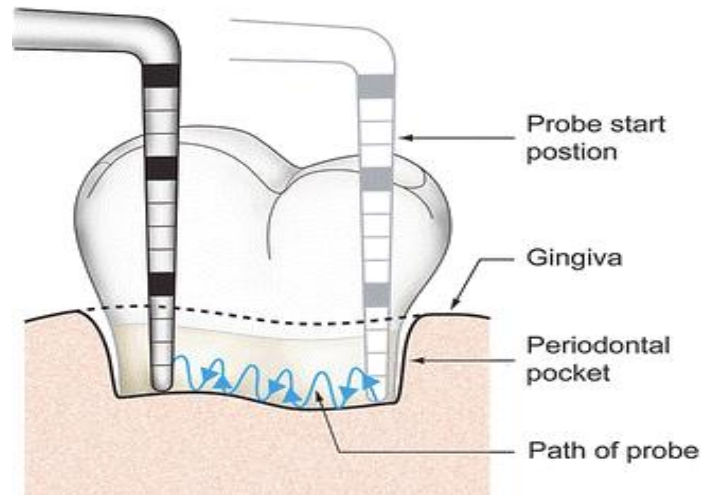


Fig. probing technique

To detect an interdental crater, the probe should be placed obliquely from both the facial and lingual surfaces to explore the deepest point of the pocket located beneath the contact point.

In multi-rooted teeth, the possibility of furcation involvement should be carefully explored. The use of specially designed probes (e.g., **Nabers probes**) allows for an easier and more accurate exploration of the horizontal component of furcation lesions.

Level of Attachment Versus Pocket Depth.

Pocket depth (PD) is the distance between the base of the pocket and the gingival margin. It may change from time to time, even in patients with untreated periodontal disease, as a result of changes in the position of the gingival margin. Therefore, it may be **unrelated** to the existing attachment of the tooth.

The level of attachment (clinical attachment level (**CAL**)) is the distance between the base of the pocket and a **fixed point** on the crown, such as the cemento-enamel junction (**CEJ**). Changes in the level of attachment can be the result of a gain or loss of attachment, and they can afford a **better indication** of the degree of periodontal destruction or gain.

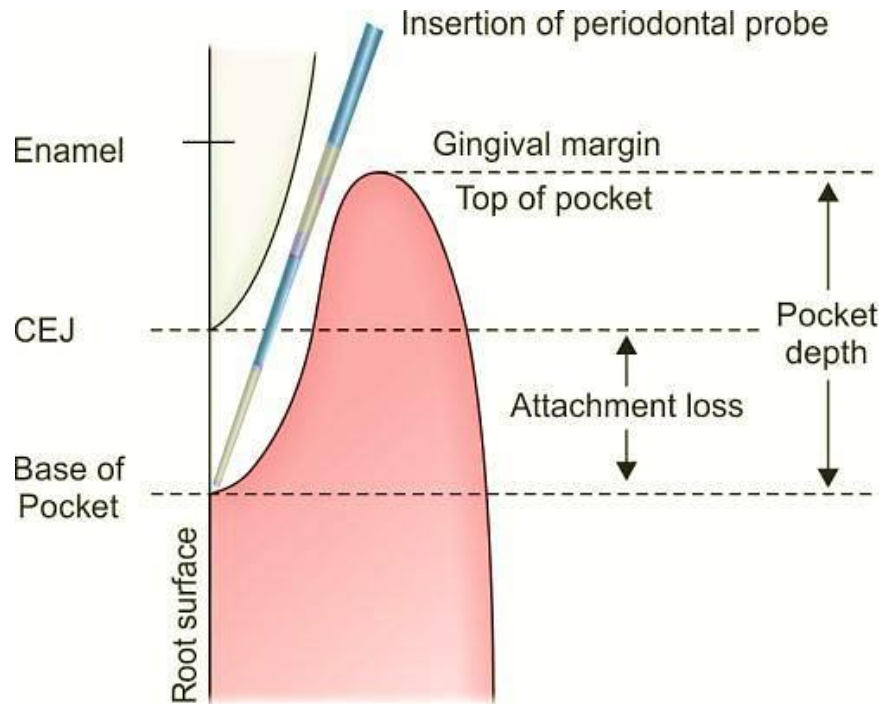


Fig. Level of Attachment Vs. Pocket Depth.

Determining the Level of Attachment

- ☒ When the gingival margin is located **on the clinical crown**, the level of attachment is determined by **subtracting** from the depth of the pocket (the distance from the gingival margin to the CEJ). If both are the same, the loss of attachment is zero.
- ☒ When the gingival margin **coincides** with the CEJ, the loss of attachment equals the pocket depth.
- ☒ When the gingival margin is located **apical** to the CEJ, the loss of attachment is greater than the pocket depth. Therefore, the distance between the CEJ and the gingival margin should be added to the pocket depth.

Amount of Attached Gingiva

It is important to establish the relationship between the bottom of the pocket and the mucogingival line. The width of the attached gingiva is the distance between the mucogingival junction and the projection on the external surface of the bottom of the gingival sulcus or the periodontal pocket. The width of the attached gingiva

is determined by subtracting the sulcus or pocket depth from the total width of the gingiva (i.e., the gingival margin to the mucogingival line). This is done by stretching the lip or cheek to demarcate the mucogingival line while the pocket is being probed.

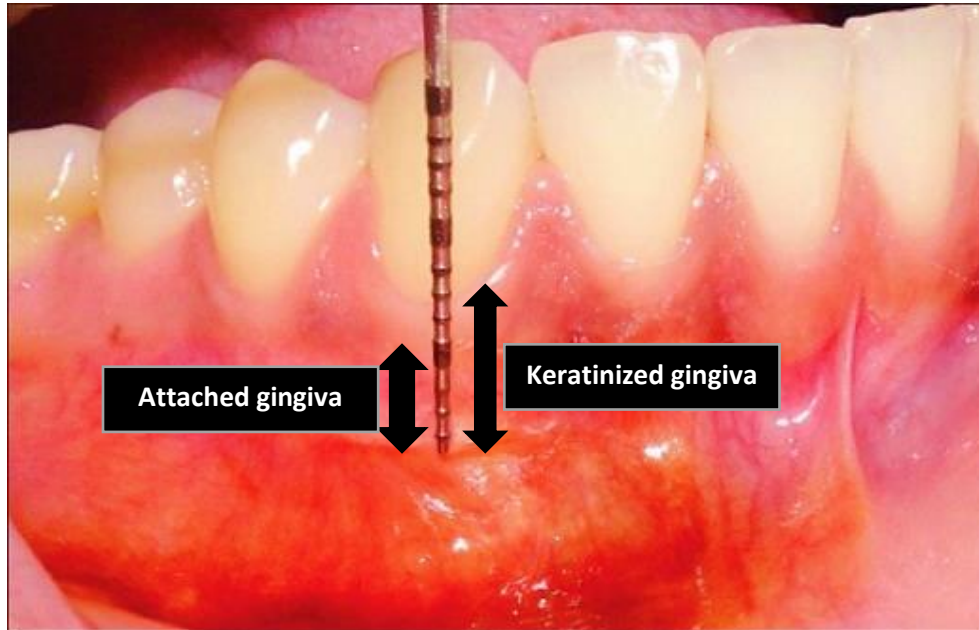


Fig. The width of attached and keratinized gingiva.

The amount of attached gingiva is generally considered to be insufficient when the stretching of the lip or cheek induces the movement of the free gingival margin.

Alveolar Bone Loss

Alveolar bone levels are evaluated via both **clinical and radiographic** examination. Probing is helpful for determining the following:

- (1) the height and contour of the facial and lingual bones, which are obscured on the radiograph by the roots
- (2) the architecture of the interdental bone.

Trans-gingival probing which is performed after the area is anesthetized, is a more accurate method of evaluation, and it provides additional information about bone architecture.



Fig. Trans-gingival probing.

Is there a difference between horizontal and vertical bone loss?

- If the level of the bone is essentially equal interdentally, it is called horizontal bone loss and measured as the percentage of bone lost (e.g., 20% of the original bone height is lost).
- Vertical/angular bone loss occurs when one tooth has lost more bone than the tooth next to it and is suggested when the bone crest is more apical to the CEJ adjacent to one tooth than to the other

Suppuration.

The presence of an abundant number of neutrophils in the gingival fluid transforms it into a purulent exudate. Clinically, the presence of exudate in a periodontal pocket is determined by placing the ball of the index finger along the lateral aspect of the marginal gingiva and applying pressure in a rolling motion toward the crown

Periodontal Abscess.

A periodontal abscess is a localized accumulation of exudate within the gingival wall of a periodontal pocket. Periodontal abscesses may be acute or chronic. The acute periodontal abscess appears as an ovoid elevation of the gingiva along the lateral aspect of the root. The gingiva is edematous and red, with a smooth, shiny surface. The shape and consistency of the elevated area vary; the area may be domelike and relatively firm, or it may be pointed and soft. In most cases, exudate may be expressed from the gingival margin with gentle digital pressure.

The acute periodontal abscess is accompanied by symptoms such as

- ❖ Throbbing, radiating pain, and tenderness of the gingiva to palpation.
- ❖ Other symptoms may include sensitivity of the tooth to palpation; tooth mobility and lymphadenitis;
- ❖ Less frequently, systemic effects such as fever, leukocytosis, and malaise.
- ❖ Occasionally the patient may have symptoms of an acute periodontal abscess without any notable clinical lesion or radiographic changes.

The **chronic periodontal abscess** usually presents a sinus that opens onto the gingival mucosa along the length of the root. There may be a history of intermittent exudation. The orifice of the sinus may appear as a difficult-to-detect pinpoint opening, which, when probed, reveals a **sinus tract** that leads deep into the periodontium.

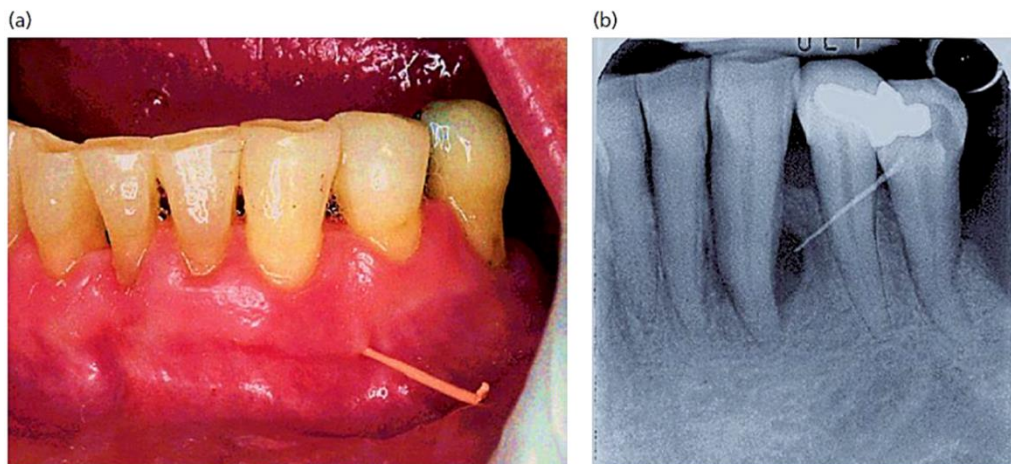


Fig. Chronic periodontal abscess (sinus tract).

The chronic periodontal abscess is usually asymptomatic. However, the patient may report episodes of dull, gnawing pain; a slight elevation of the tooth; and a desire to bite down and grind the tooth.

Periodontal Abscess and Gingival Abscess

The principal differences between the periodontal abscess and the gingival abscess are location and history .

The gingival abscess is confined to the marginal gingiva, and it often occurs in previously disease-free areas. It is usually an acute inflammatory response to the forcing of foreign material into the gingiva.

The periodontal abscess involves the supporting periodontal structures, and it generally occurs during the course of chronic destructive periodontitis.

Periodontal Abscess and Periapical Abscess.

If the tooth is **non-vital**, the lesion is most likely periapical. However, a previously non vital tooth can have a deep periodontal pocket that can abscess. Moreover, a deep periodontal pocket can extend to the apex and cause pulpal involvement and necrosis. Radiographic findings are helpful for differentiating between a periodontal lesion and a periapical lesion. Ordinarily, a radiolucent area along the lateral surface of the root suggests the presence of a periodontal abscess, whereas apical rarefaction suggests a periapical abscess.

| Periodontal abscess | Periapical abscess |
|---|--|
| 1-Associated with a preexisting periodontal pocket. | 1-The offending tooth may have large restoration. The tooth may have no periodontal pocket or, if present, it probes as a narrow defect. |
| 2-Tests show vital pulp. | 2-Tests show nonvital pulp. |
| 3-Swelling usually includes gingival tissue, with fistula in lateral wall of the tooth. | 3-Swelling is often localized to the apex, with a fistulous tract reach to apical region. |
| 4-Pain is usually dull and localized. | 4-Pain is often severe and difficult to localize. |
| 5-Sensitivity to percussion may or may not be present. | 5-Sensitivity to percussion is noted. |

Fig. Comparison between periodontal and periapical abscess.