Periodontal Examination

Authored by:

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Periodontics is comprised of the prevention, diagnosis and treatment of diseases of the tissues that surround teeth and endosseous dental implants. Other goals of periodontics include the maintenance of health, function, comfort and esthetics of all supporting structures and tissues in the mouth.

A healthy periodontium is characterized by the presence of non-inflamed soft and hard connective tissues (gingiva and bone respectively). Healthy gingival tissues appear pink, have a stippled surface, are keratinized and don't bleed. When the tissues become inflamed, they might appear to be red and swollen and bleed easily with minimal provocation (e.g. periodontal examination/probing). There might also be a purulent exudate (pus) coming out of inflamed gingival tissues consistent with infection.

The periodontal evaluation is an integral part of the general assessment of both new and existing dental patients. The findings obtained from the clinical examination together with relevant information gained from their medical and dental histories and the radiographic assessments, are used to assess the patients' periodontal status, risk characteristics for periodontal disease, and to determine the appropriate diagnosis, prognosis and, if necessary, treatment plan.

1. The medical history is used to identify predisposing conditions that may affect treatment, patient management and treatment outcomes and the potential interrelationships between systemic health and periodontal diseases.
2. The dental history comprises the patient's chief complaint, past care and past treatment records.

3. The clinical examination includes:
    1. The extra-oral examination, including the temporomandibular joints and lymph nodes.
    2. The intra-oral examination of the soft tissues including muscles of mastication, oral mucosa, floor of the mouth, palate, salivary glands, tongue, oro-pharynx
    3. The evaluation of mucogingival relationships, deficiencies of attached keratinized tissue, abnormal frenum insertions
    4. The visual assessment of the colour, contours (shape) and texture of the gingiva. Early signs of gingival inflammation are gingival redness, swelling and loss of stippling.
    5. The examination of the soft tissues around teeth and implants, the presence and type of exudates
    6. The identification of the presence and distribution of plaque/biofilm and calculus. The plaque index can be calculated at this point by applying disclosing solution to the teeth and by determining the percentage of tooth surfaces at which plaque is present (the number of plaque-covered surfaces, maximum 4 of each tooth, divided by the number of teeth times 4).
    7. The determination of probing depths, clinical attachment levels, the location of gingival margins (recessions, gingival hyperplasia), the presence of bleeding on probing. The recessions and, if present, the degree of gingival hyperplasia (overgrowth) are measured first, using a periodontal probe. Three measurements are recorded for the facial aspect of each tooth and three for the lingual aspect. The distance between the cemento-enamel junction (CEJ) and the gingival margin is measured and recorded as a positive number, if recession is present, and as a negative number, if the margin of the gingiva extends above the CEJ. The depth of the gingival crevices is recorded next, again using the periodontal probe at six points around each tooth. The probe is inserted gently but firmly into the gingival crevice until it meets with resistance. It is held parallel to and ‘walked’ around each tooth. The deepest measurement is recorded. The level of attachment is calculated by adding the recession or hyperplasia measurement (- or + mm) to the probing depth measurement (mm). The presence of hemorrhage associated with probing is also recorded at six sites around the tooth.
    8. The identification of the presence, location and extent of furcation invasions. The periodontal explorer or a special furcation measurement probe such as the Nabers probe is used and, if present, the degree of furcation involvement is noted as Class I, a furcation which has a horizontal probing depth from 1-3 mm, Class II, a furcation which has a horizontal probing depth more than 3 mm but not through-and-through, and Class III, a furcation which is entirely open, also called ‘through and through’ furcation.

9. The examination of the teeth, condition of prostheses, restorations, caries, tooth mobility, tooth position, occlusal relationships, occlusal discrepancies (extrusion, intrusion, malposition), occlusal trauma, fremitus, signs of parafunction, pulpal status, contacts. Anterior teeth can be slightly mobile and still be periodontally sound. Posterior teeth should not show any signs of mobility. If they are found to be mobile, the cause of the mobility, occlusal trauma or loss of periodontal support, must be determined. Mobility can be slight, M1, moderate, M2, or severe M3. When a mobility of M3 is diagnosed, the tooth in question is not only horizontally but also vertically mobile. The Angle Classification is noted as well as the presence and degree of attrition (mild, moderate, severe, localized, generalized).
10. The evaluation of relevant radiographs and other radiographic imaging of diagnostic quality for the identification of abnormalities, such as bone loss patterns and combined endodontic-periodontal lesions and other evidence of pathology
11. Diagnostic casts
12. Microbial assessment, genetic testing and other laboratory tests

4. All relevant findings must be documented.
5. When warranted, referral to other health care providers should be made and documented
6. The need for and suitability of dental implant placement should be assessed
7. The individual risk factors such as age, diabetes, smoking, cardio-vascular disease, and other systemic conditions associated with the development and/or progression of periodontal disease should be determined
8. Based on the findings, a diagnosis, prognosis and treatment plan should be devised and presented to the patient
9. The patient should be informed of the disease process, treatment alternatives, potential complications, expected results, the need for post-treatment maintenance, the consequences of no treatment and the patient's responsibilities during and following treatment
10. The treatment plan should be used to establish the methods and the sequence of treatment. It may include non-surgical, surgical, regenerative, cosmetic procedures, dental implants placement followed by an individualized maintenance program. If periodontal treatment, such as surgery, was performed, the periodontal examination is repeated following a period of healing, so that the outcome of the surgical treatment can be assessed, and further periodontal management or post-surgical maintenance needs can be determined.
11. The comprehensive periodontal examination should be performed at least once a year. Its results should be compared to previous findings and they should be used to confirm the original or arrive at a new diagnosis. If necessary, a new treatment plan or new maintenance requirements should be devised and clearly communicated to the patient.

12. In addition, the patient's periodontal condition is reassessed during maintenance, when the patient is seen for scaling, root debridement, selective polishing, OHI. At these visits, periodontal screening and recording, PSR, can be performed as an initial step followed, if warranted, by a comprehensive evaluation as described above. PSR is performed using a special PSR probe which has a coloured mark from 3.5-5.5mm. This probe is 'walked' around each tooth as during the initial examination, and the deepest reading in the sextant is recorded.

- Code "O" is recorded when the coloured area of the probe remains completely visible, when there is no calculus present and no defective margins and when there is no bleeding on probing. Code "1" is recorded when the coloured area of the probe remains completely visible, when there is no calculus present and no defective margins but when there is bleeding on probing.
- Code "2" is recorded when the coloured area of the probe remains completely visible, when there is calculus present or defective subgingival margins.
- Code "3" is recorded when the coloured area of the probe is only partially visible.

Once a Code "3" is recorded, the sextant involved must be examined comprehensively in order to establish an appropriate treatment plan. If two or more sextants receive Code "3" designations, the periodontal condition of the entire dentition must be re-evaluated. Code "4" is recorded when the coloured area of the probe disappears completely. A comprehensive examination and treatment plan are required when this occurs.

To summarize, periodontal evaluations are important in the overall dental management of patients. These examinations must be thorough and they must document both the presence of disease and that of health. Only based on the results of comprehensive examinations can appropriate treatment be instituted, the results of treatment assessed and the maintenance of periodontal health monitored.

Article Reviewed By

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