lec 2 DETERMINATION OF PROGNOSIS AND TREATMENT PLAN

DEFINITION

The prognosis is a prediction of the course, duration and outcome of a disease based on the pathogenesis of the disease and the presence of risk factors for the disease. It is established after the diagnosis is made and before the treatment plan is established

TYPES OF PROGNOSIS

EXCELLENT PROGNOSIS No bone loss, excellent gingival condition, good patient cooperation, no systemic environmental factors.

GOOD PROGNOSIS One or more of the following: adequate remaining bone support, adequate possibilities to control etiologic factors and establish and maintainable dentition, adequate patient cooperation, no systemic environmental factors or well controlled systemic factors

FAIR PROGNOSIS One or more of the following: less-than-adequate remaining bone support, some tooth mobility, grade I furcation involvement, acceptable patient cooperation, presence of limited systemic/environmental factors

POOR PROGNOSIS One or more of the following: moderate-to-advanced bone loss, tooth mobility grade I and II Furcation involvements, and/or doubtful patient cooperation, presence of systemic/environmental factors

QUESTIONABLE PROGNOSIS One or more of the following: advanced bone loss, grade II tooth mobility and IlIl furcation involvements, , inaccessible areas, presence of systemic/environmental factors.

OVERALL VERSUS INDIVIDUAL TOOTH PROGNOSIS

OVERALL PROGNOSIS The overall factors that may influence the overall prognosis include patient age, current severity of disease, systemic factors, smoking, the presence of plaque, calculus, other local factors, patient compliance, and prosthetic possibilities.

INDIVIDUAL TOOTH PROGNOSIS The prognosis for individual teeth is determined after the overall prognosis and is affected by it. In a patient with a poor overall prognosis, the dentist likely would not attempt to retain a tooth that has a questionable prognosis because of local overall clinical factors

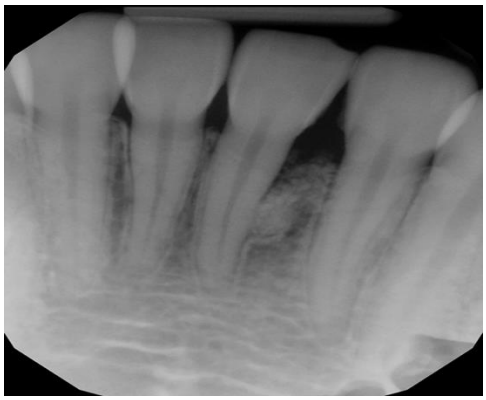
PATIENT'S AGE

For two patients with comparable levels of remaining connective tissue attachment and alveolar bone, the prognosis is generally better in the older of the two. For the younger patient, the prognosis is not as good because shorter time frame in which the periodontal destruction has occurred because the younger patient suffers from an aggressive type of periodontitis or disease progression may have increased due to systemic disease or smoking. The younger patient would be expected to have a greater reparative capacity, the occurrence of much destruction in a short period exceed any naturally occurring periodontal repair

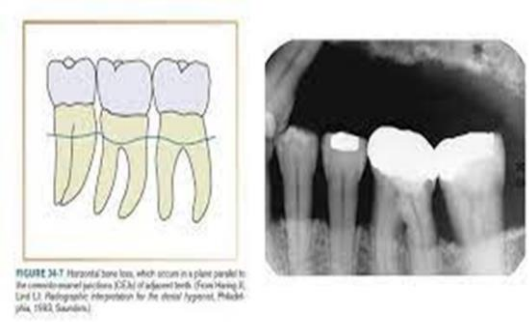
DISEASE SEVERITY

The determination of the level of clinical attachment reveals the approximate extent of root surface that is devoid of periodontal ligament; the radiographic examination shows the amount of root surface still invested in bone. Pocket depth is less important than level of attachment because it is not necessarily related to bone loss. In general, a tooth with deep pockets and little attachment and bone loss has a better prognosis than one with shallow pockets and severe attachment and bone loss. The prognosis also can be related to the height of remaining bone. The type of defect also must be determined. The prognosis for horizontal bone loss depends on the height of the existing bone. In the case of angular, intrabony defects, if the contour of

the existing bone and the number of osseous walls are favorable, there is an excellent chance that therapy could regenerate bone to approximately the level of the alveolar crest.



vertical bone loss



horizontal bone loss

PLAQUE CONTROL

Bacterial plaque is the primary etiologic factor associated with periodontal disease. Therefore effective removal of plaque on a daily basis by the patient is critical to the success of periodontal therapy and to the prognosis.

PATIENT COMPLIANCE AND COOPERATION

The prognosis for patients with gingival and periodontal disease is dependent on the patient's attitude, desire to retain the natural teeth, and willingness and ability to maintain good oral hygiene. Without these, treatment cannot succeed.

Systemic and environmental factors

SMOKING

Patients should be informed that smoking affects not only the severity of periodontal destruction but also the healing potential of the periodontal tissues. As a result, patients who smoke do not respond as well to conventional periodontal therapy than never smoked. Therefore the

prognosis in patients who smoke and have slight-tomoderate periodontitis is generally fair to poor. In patients with severe periodontitis, the prognosis may be poor to hopeless. However, smoking cessation can affect the treatment outcome and therefore the prognosis. Patients with slight to moderate periodontitis who stop smoking can upgraded to a good prognosis, whereas those with severe periodontitis who stop smoking may be upgraded to a fair prognosis

SYSTEMIC DISEASE OR CONDITION

The patient's systemic background affects overall prognosis in several ways. For example, the prevalence and severity of periodontitis is significantly higher in patients with type l and type lI diabetes than in those without diabetes and that the level of control of the diabetes is an important variable in this relationship. Well-controlled diabetics with slight-to-moderate periodontitis who comply with their recommended periodontal treatment should have a good prognosis. Conditions that limit the patient's performance of oral procedures (e.g., Parkinson's disease) also adversely affect the prognosis. Newer automated oral hygiene devices such as electric toothbrushes may be helpful for these patients and improve their prognosis.

GENETIC FACTORS

Periodontal diseases represent a complex interaction between a microbial challenge and the host's response to that challenge, both of which may be influenced by environmental factors such as smoking. Genetic factors may play an important role in determining the nature of the host response. Genetic polymor-phisms in the interleukin-1 (IL-1) genes, resulting in increased production of IL-1ß have been associated with a significant increase in risk for severe, generalized, chronic periodontitis.

Local factors

PLAQUE AND CALCULUS

The microbial challenge presented by bacterial plaque and calculus is the most important local factor in periodontal diseases.

SUBGINGIVAL RESTORATIONS

Subgingival margins may contribute to increased plaque accumulation, increased inflammation and increased bone when compared with supragingival margins. Furthermore, discrepancies in these margins (e.g., overhangs) can negatively impact the periodontium. Subgingival margins has a poorer prognosis than tooth with well-contoured, supragingival margins.

ANATOMIC FACTORS

Anatomic factors that may pre-dispose the periodontium to disease, and therefore affect the prognosis, include

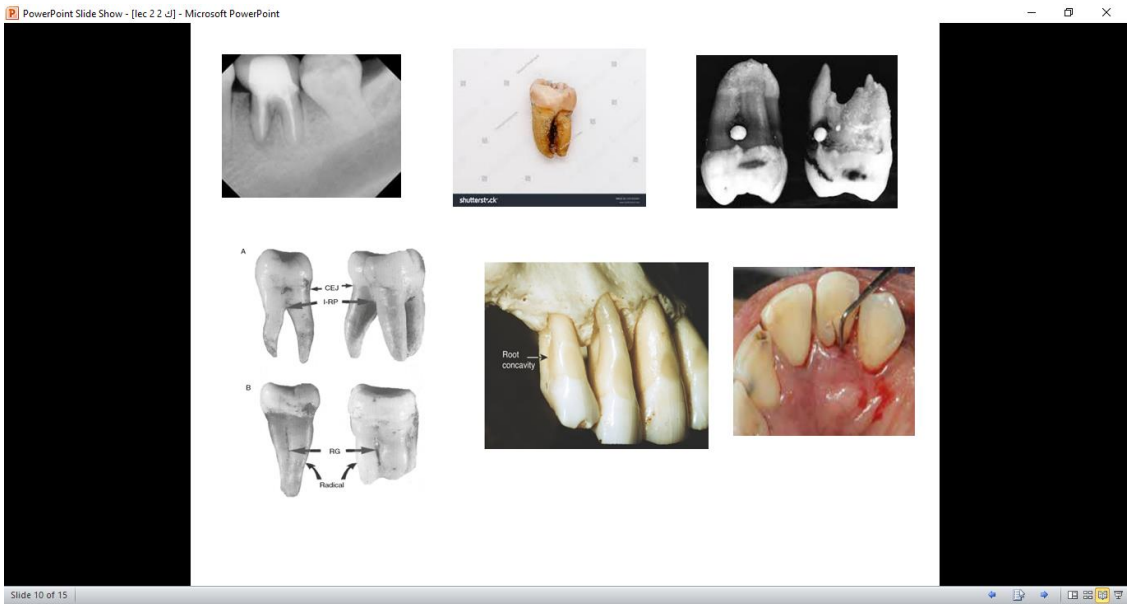
-short, tapered roots with large crowns,

-cervical enamel projections (CEPs) and enamel pearls, intermediate bifurcation ridges,

-root concavities, and developmental grooves.

Prognosis is poor for teeth with short tapered roots and large crowns. Disproportionate crown-to-root ratio and the reduced root surface available for periodontal support, the periodontium may be more susceptible to injury by occlusal forces. Cervical enamel projections (CEPs), ectopic extensions of enamel that extend beyond the normal contours of the cementoenamel junction. Extend into the furcation. Enamel pearls are larger, round deposits of enamel that can be located in furcation or other areas on the root surface. An intermediate bifurcation ridge is described in 73 % of mandibular first molars, crossing from the mesial to the distal root at the midpoint of the furcation. Interferes with the attachment apparatus and may prevent regenerative procedures from achieving their maximum potential. Scaling with root planing is a fundamental procedure in periodontal therapy. Anatomic factors that decrease the efficiency of this procedure can have a negative impact on the prognosis.

Root concavities exposed through loss of attachment can vary from shallow flutings to deep depressions. They appear more marked on maxillary first premolars, the mesiobuccal root of the maxillary first molar.



TOOTH MOBILITY

The principal causes of tooth mobility are loss of alveolar bone, inflammatory changes in the periodontal ligament, and trauma from occlusion. Tooth mobility caused by inflammation and trauma from occlusion may be correctable. However tooth mobility resulting from loss of alveolar bone is not likely to be corrected. The overall prognosis requires a general consideration of bone levels (evaluated radiographically) and attachment levels (determined clinically) to establish whether enough teeth can be saved either to provide a functional and aesthetic dentition or to serve as abutments for a useful prosthetic replacement of the missing teeth.

RELATIONSHIP BETWEEN PROGNOSIS AND DIAGNOSIS

Factors such as patient age, severity of disease, genetic susceptibility and presence of systemic disease are important criteria in the diagnosis of the condition and in developing a prognosis.

GINGIVITIS ASSOCIATED WITH DENTAL PLAOUE ONLY

Plaquc-induced gingivitis is a reversible disease that occurs when bacterial plaque accumulates at the gingival margin.

PLAQUE-INDUCED GINGIVAL DISEASES MODIEIED BY SYSTEMIC FACTORS

The inflammatory response to bacterial plaque at the gingival margin can be influenced by systemic factors such as endocrine-related changes associated with puberty, menstruation, pregnancy, and diabetes and the presence of blood dyscrasias. Therefore the long-term prognosis for these patients depends not only on control of bacterial plaque, but also on control or correction of the systemic factor(s).

PLAQUE-INDUCED GINGIVAL DISEASES MODIFIED BY MEDICATIONS

Gingival diseases associated with medications include drug-influenced gingival enlargement, often seen with phenytoin, cyclosporin, nifedipine, and oral contraceptive- associated gingivitis.

NON-PLAQUE-INDUCED GINGIVAL LESIONS

Prognosis is dependent on elimination of the source of the infectious agent Dermatologic disorders such as lichen planus, pemphigoid, pemphigus vulgaris, erythema multiforme, and lupus erythematosus manifest in the oral cavity as atypical gingivitis

Gingival Diseases Modified by Malnutrition

Most clinical studies have not shown a relationship between the two. One possible exception is severe vitamin C deficiency. The prognosis in these patients may depend on the severity and duration of the deficiency and on the reversing the deficiency through dietary supplementation

PROGNOSIS FOR PATIENTS WITH PERIODONTITIS

Chronic periodontitis is a slowly progressive disease associated with well-known local environmental factors (**slight-to moderate** periodontitis), the prognosis is generally good, provided the inflammation can be controlled through good oral hygiene and the removal of local biofilm-retentive factors.. In patients with more **severe** disease, as evidenced by furcation

invasion and tooth mobility, or in patients who are noncompliant with oral hygiene practices, the prognosis may be questionable

AGGRESSIVE PERIODONTITIS

Aggressive periodontitis can present in a localized or a generalized form, , two common features are

1.rapid attachment loss and bone destruction in an otherwise clinically

healthy patient

2. familial aggregation.

The deposits that are present often have elevated levels of Aggregatibacter actinomyceteicomitans or Porplyromonas gingivalis. These patients also may present with phagocyte abnormalities. - Aggressive periodontitis would have a poor prognosis.

Localized aggressive periodontitis usually occurs around the age of puberty and is localized to first molars and incisors.

PERIODONTITIS AS MANIFESTATION OF SYS TEMIC DISEASE

Periodontitis as a manifestation of systemic diseases can be divided into two categories.

1.Those associated with hematologic disorders such as leukemia and acquired neutropenias.

2.Those associated with genetic disorders such as familial and cyclic

neutropenia, Down syndrome, Papillon-Lefevre syndrome, and hypophosphastasia.

Although the primary etiologic factor in periodontal diseases is bacterial plaque. these patients present with a fair-to-poor prognosis

Necrotizing Periodontal Diseases

(Necrotiing ulcerative gingivitis, NUG)(necrotizing ulcerative periodontitis, NUP) In NUG,

The primary predisposing factor is bacterial plaque. However, this disease is usually complicated by the presence of secondary factors such as acute psychological stress, tobacco smoking, and poor nutrition, all of which can contribute to immunosuppression. With control of both the bacterial plaque and the secondary factors, the prognosis for a patient with NUG is good. The tissue destruction in these cases is not reversible and poor control of the secondary factors may make these patients susceptible to recurrence of the disease. With repeated episodes of NUG, the prognosis may be downgraded to fair.

THE TREATMENT PLAN

After the diagnosis and prognosis have been established, the treatment is planned. Treatment plan is the blueprint for case management. It includes all procedures required for the establishment and maintenance of oral health.

Treatment plan involves the following decisions

Teeth to be remained or extracted, Pocket therapy techniques, surgical or non-surgical, that will be used occlusal correction. The use of implant therapy, the need for temporary restoration, final restoration that will be needed after therapy, and which teeth will be abutments if a fixed prosthesis is used. The need for orthodontic consultation, endodontic therapy, decisions regarding esthetic considerations in periodontal therapy, sequence of therapy