

CLINICAL AND PARACLINICAL INDICATORS IN THE ESTABLISHMENT OF AN ORAL DIAGNOSIS WITH HIGH PREDICTABILITY

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ABSTRACT

Predictability is a key condition for the development of the health system. The success of a dental treatment is conditioned by an accurate diagnosis, in conjunction with an appropriate treatment plan. A diagnosis can be established when one or more diagnostic signs are present. The initial diagnosis is further characterized using one or two risk factors. For every patient that will be treated, it is made a dental folder that contains the survey, and a series of paraclinical examinations. At any time we can detect the existence of some elements of predictability of the general disease with impact at the level of the oral cavity. Due to the wide spread of the illness and of the difficulties of therapeutic order in advanced forms of the disease. In recent decades there have been made special efforts in the direction of their diagnosis in the early stages. There are not always forms of chronic or acute, appeared in the oral cavity, which can be considered in its own right, but may be correlated with a general known pathology or not known to the patient.

Keywords: oral diagnosis, inflammation, endodontic pathology, periodontal affections, periodontal disease

INTRODUCTION

The frequency and severity of diseases in the oral cavity is a priority in the healthcare because the metabolic, endocrine pathology, avitaminoses, calcium deficiency, autoimmune diseases is reflected through the gum bleeding, the increase of the degree resorption of the bone jaw, the accelerated tooth mobility, the teeth loss as well as the appearance of lesions on the oral cavity mucosa.

The local factors have an important role in the onset and evolution of the local condition and the general one influence the prevalence and the evolutionary severity of these.

The morbidity due to caries, parodontopathy and early edentation is very

high due to the associated pathologies and undiagnosed on time. Patients who are not investigated on time, can be diagnosed through a simple consultation made by the dentist, through the accuracy and precision of establishing a diagnosis, as well as local symptomatology correlation with various general affections.

The development of a diagnosis means the respecting of a certain sequence in the examination.

The clinical diagnosis is the first step of evaluation and refers to the diagnosis resulted from the subjective and objective examination of the patient with the detection of the reason which caused pain and hearing the patient's background.

The oral diagnosis encompasses the totality of the stomatognathic system elements and their relationship with the body, which takes into account the signs and symptoms listed by: anamnesis, intraoral exam, extraoral exam, complementary exams.

The systemic point of view, the oral diagnosis items are:

a) *The diagnosis of the general condition* – the diagnostic formulation of general condition seeks to specify in what way the homeostatic equilibrium is disturbed by general affections, the structure of oral tissues and the gnathoprosthetic specialty treatment.

b) *The local diagnosis* – is the functional diagnosis and of integrity, for the odontal, periodontal region, of the arch, the study of occlusion and of mandible-cranial relation.

c) *The diagnosis of hygiene condition* – in terms of the hygiene condition the patient may present a satisfactory or unsatisfactory hygiene; an improper oral hygiene can be prosecuted for the current status of the oral health of the patient and may influence the decisions regarding the treatment plan.

Although, currently it relies on the use of modern equipment in the diagnosis of some diseases and in the therapeutic pursuit, the doctor is the one who sets up an early diagnosis, examines the patient and notes the existence of a suffering in his debut, guiding the patient towards that investigation which has the ability to capture the incipient disease. Therefore, the physician has the obligation to know the existent methodology of investigation, its specificity, the possibilities and performance methods used, and the risks of getting false positives or false negatives results, indicating those methods that give the maximum efficiency, in order not to expose the patient to unnecessary risks.

AIM OF THE STUDY

The present study is focused on getting a

correct diagnosis, according to the algorithm of investigation, avoiding the excessive use of paraclinical examinations, which can alter in time the competence of the doctor.

The absolutization of paraclinical examinations and their indiscriminate use, can have adverse consequences on both the client (via their harmful effects), and the doctor that investigates him. The interdisciplinary consult is really useful for the assessment of general condition.

MATERIAL AND METHODS

The establishment of clinical-biological index, which quantifies through their values the degree of dishomeostasis at the level of the stomatognathic system, is carried out in close relation with the applied treatments, aiming constantly their reoptimisation through transition treatments, temporised, followed by definitive treatments, individualized if necessary. Marking these indices is correlated with the ethiopathogenesis, which determined the change of the balance at the level of the stomatognathic system.

RESULTS AND DISCUSSIONS

Predictability and success rate in endodontology

In the biological field, nobody can give safe guarantees and reliable sure prognostics regarding the success rate of medical treatments that we achieve. We are aware of these aspects and that is why we do not want to create false illusions to our patients.

The endodontic treatment is a predictable dental treatment that offers the chance to save a tooth with endodontic pathology as long as it is created a correct diagnosis and treatment plan, avoiding accidents and incidents during treatment.

Morally and ethically we reserve the right to communicate to patients the periodontal diagnostic findings concerning

periodontal diseases and/or impossibility of a correct long-term dental restoration after an endodontic treatment.

Endo-periodontal relations

Both periodontics and endodontics share the common goal to control or combat the spread of the inflammation by means of natural communication or artificially created.

Not always can we easily trace where the primary lesion is and, especially, which was the mean of spreading the infection. Sometimes there occur clinical signs which can lead to confusion that makes difficult to establish a correct diagnosis, leading to various interpretations, which can result in ineffective therapeutic solutions, in complications or even in the killing of the tooth.

The nature and the expanding of the inflammatory lesions depend on several factors, such as the virulence of bacteria in the channel system, the power of defence of the host tissues and duration of illness. Periradiculare changes can be limited to the apical periodontium or it can extend to the coronary, communicating with the oral cavity by fistulous routes (sinuous), through the mucosa or along the root, exiting in the gingival sulcus. The clinical symptoms can sometimes lead to confusion, their origin being misinterpreted.

What would seem to be a lesion of periodontal origin in reality can be a pulp problem and vice versa. The diagnosis can be difficult when the endodontic and periodontal injuries affect simultaneously the same tooth. As a consequence, the practitioner must know well the anatomy of the endodontic and periodontal space in all possible ways, be familiar with all aspects of relations between the two systems and mechanisms involved in the development of disorders, as well as the possibilities for intervention, in any situation and adapt them to the most appropriate

technique.

The ways of communication between endodontium and the periodontium are represented by the apical foramen, which is the main path for the inflammation of the pulp to cross from the apical periodontium and sometimes even marginal; the accessory canals are rarely highlighted through dental x-rays, they have clinical significance in the diffusion infectious elements from the necrotic pulp to the periodontium or backwards, unclear scientific yet; the lateral canals form an angle about right with the main channel linking it to the periodontium; the secondary channels open through the foramen separately; the additional channels are located on the same supernumerary root and the dental tubes extend from the amelodentinal junction to the dento-enamel junction.

The inflammatory alterations of the pulp cause rarely the appearance of major injuries at the level of the periodontal tissues. Irritations from the necrotic pulp can induce pathological changes of periodontium. In the necrosed pulp, the microorganisms arising from the oral cavity find good conditions for their development. The microbiosis of necrotic infected pulp has certain traits in common with that associated with the periodontal disease. The endodontic microflora is not as complex as that of periodontites, consisting of a limited number of bacterial species. After the rise and spread in the dental canal, they will release various substances that will reach the periodontium through the canals and the apical foramen. The bacterial products will produce inflammatory phenomena, causing destruction of the periodontal fibres and the adjacent alveolar bone. Sometimes it occurs also the root resorption. The degree of damage is proportional to the quantity and quality of the bacteria present in the canal and with the power of the host reaction. If the

balance between the two is balanced, the inflammatory process may stagnate; sometimes the injuries can degenerate into cysts, with widespread destruction of the alveolar bone.

After the infection of the radicular canals there can result also inflammatory processes localized along the roots or in areas of furcation, to the pluriradicular teeth. The identification of hidden channels, of anatomical varieties becomes predictable.

The channel treatment may be very predictable and has a rate of success of over 95%. The Maintaining and saving of the tooth prevents loss of the function (masticatory efficiency), the movement of the neighbouring teeth and undesirable changes of physiognomy. The more dento-periodontal disease is caused by endodontic infection, moreover, the success rate of the treatment will be higher, considering the complete rebuild in this case.

Because clinically it cannot be determined exactly which of the two injuries (endo- or perio-) has affected more the sustaining tissues, the treatment strategy must focus firstly on the pulp infection by cleaning and disinfection if the canal system. The second phase includes the periodontal treatment, with the depth reduction to the test in a few weeks and a possible bone regeneration after a few months. Thus, the periodontal therapy including the deep curettage, with or without periodontal surgery, should be deferred until it can be properly evaluated the result of the endodontic treatment.

The periodontal disease may be entirely responsible for the loss of the sustaining tissue around the tooth and, moreover, may be the cause of pulp tissue destruction.

The decay disease - the most common oral disease

The decay disease is regarded as an infectious disease, transmissible, that has as

main symptom the decay. The identification of the etiologic and the risk factors, as well as the ecological theory of bacterial plaque, has allowed the development of the medical model of treatment in dental caries.

The decay is a dynamic pathological process, reversible, episodic and asynchronously, which in noncavitar stages has the ability to heal with the help of preventive-therapeutic measures, the decay risk helping us to the diagnosis and the predictability of this case.

Current knowledge has led to the belief that the key factor in treatment and prevention rests on the amendment and correction of the complex bacterial biofilm and the change of the oral factors in order to promote the health condition.

The decay management system provides a structured strategy, based on evidence with respect to this issue. The risks of the decay, as well as the treatment of the decay disease are conducted according to a set of protocols, which refer only to those interventions that are well supported by solid evidence. These protocols are implemented in different stages, with the consultation and treatment, having as a double target the achievement of primary preventions of the decay disease and of a secondary prevention through non-invasive measures.

This approach can be accomplished through a strategy of good practices, which decrease the risk factors, grow the protective factors, which is the basis of CAMBRA (Caries Management by Risk Assessment) philosophy; evidence-based strategy that has as its purpose the prevention or treatment of the decay causes, still in the early stages, without waiting for the irreversible affection of teeth.

One of the main risk factors in the decay disease is represented by the frequent exposure to refined sugars from food. The risk seems to fall through a better control of

the biofilm and the exposure to fluor in the last period of time.

While bacteria play an important role in the decay disease, the oral environment is adjusted to the influence of the salivary glands. The determination of the overall quality of the saliva, including the salivary flow rate, the viscosity, the buffer capacity etc., will help the clinician in making decisions on preventive and operative interventions, and in educating the patient regarding salivary imbalance.

The CAMBRA philosophy involves the detection of cavity lesions in a stage as early as possible so that the process can be regressed or stopped.

The detection and diagnosis of noncavitated lesions are made with accuracy; are important priorities, using as method of detection the inspection and palpation. To fill in and confirm the inspection, a blunt probe or a sharp sphere can be driven on the surface to confirm the loss of the integrity of the surface.

It is important for the patient to understand the relationship between diet and decay disease; the probability that the risk of decay to be reduced by decreasing sugar consumption.

In the case of early fissure decay injuries, being in precavitory stage, it is recommended the appliance of sigilants, without removing anything from the hard dental structures.

The sigilants are universally recognized as an evidence-based method, which increases the resistance of the tooth to the decay lesions in the fissures and fosets.

The patient will be informed of the potential problems with the probability that the cavity lesions to stop from evolving and with the lesions potential injuries that submit them to stop evolving.

The compliance of the patient to the doctor's recommendations is critical in the successful implementation of the

carioprotective factors. A modern technique is the motivational interview in which the main objective is to help the patient to overcome the ambivalence of behaviour.

The dentists shall endeavour to combine the ease of preparation and application of the sigilants with the acceptable aesthetics and the clinical longevity predictable in a manner in order to enhance the efficiency and the economy of the dental cabinet.

CAMBRA offers the doctor the ability to apply the most relevant interventions, based on scientific and effective evidence.

CONCLUSIONS

Prevention of the periodontal disease

Periodontal diseases are bacterial infections that have a strong genetic component and that affect the gum, the bone support and the ligament apparatus of the tooth. As the disease progresses the bony bags appear. The more advanced is the disease, the deeper the bony bags will be and the bone loss will be higher. These bags allow bacteria to develop and make it difficult the effective practice of the oral hygiene.

The periodontal diseases are infections of the gums that gradually destroy the natural teeth support. The dental plaque is the first cause of the gum diseases in genetically susceptible individuals. The bacteria in the plaque produce toxins or poisons which irritate the gums. The gums change colour in red, get inflamed and bleed easily. If this irritation is prolonged the gums separate from the teeth forming gingival pockets (spaces). The plaque may also strengthen and form a rough, porous substance known as tartar. This phenomenon is occurring both above and below the gingival line. As the periodontal disease progresses, the support gingival tissue and the bone that supports the teeth keep is deteriorating. Let untreated, it leads to the teeth loss. The periodontal disease is sometimes hard to detect because there is no

pain and often may not exist bleeding, redness or inflammation. This disease affects the teeth, the gums and the bone to over 80% from the population over 45 years old.

The problems caused by smoking include: lung diseases, heart diseases, cancer, oral inflammatory lesions, gingival retraction, loss of the bone and teeth, bad breath, teeth staining, a smaller success of periodontal treatment.

The quitting smoking will reduce the chance of problems development and will make the treatment and control of the periodontal disease more predictable.

The clinical signs of gingivitis associated with the biofilm are reversible when the oral hygiene is implemented and is maintained. With a lower prevalence than gingivitis, are the clinical signs of the periodontitis associated with the biofilm, including periodontal pockets, attachment loss, bleeding by sounding and bone loss detectable radiological.

The therapeutic efforts are directed toward the elimination of suspected infection, leading to the resolution of the inflammatory signs, tissue repair and restoration of the functionality and aesthetics; but the results of the periodontal therapy can be stable a long time, but the signs of the disease may return, unpredictable, with locations, frequency and different severity.

The initial diagnosis is characterized by using one or two risk factors: debut age, progression, response to treatment, severity, extension.

Signs and symptoms of diagnosis: gingival colour, gingival necrosis, increased gingival volume, gingival recession, bleeding caused and by sounding the periodontal bags, attachment losses, bone losses, tooth mobility, lateral migrations, pain.

The subsequent observations of differential susceptibility of the host to the disease and the discovery of the molecular

mechanisms of the tissular destruction of periodontium suggests anti-inflammatory approaches or of the modulation's host response as potential means of treatment of the periodontal syndromes. The efficient periodontal therapy for diseases related to bacterial plaque, requires the removal of inflammation by restoring of a „clean” root surfaces, biologically acceptable.

The general guidelines of periodontal treatment planning comprise five phases of systemic treatment, acute, etiologic, corrective surgical and maintenance.

The systemic treatment phase consists of preventing the treatment complications, optimization of treatment's results by approaching the risk factors (smoking and diabetes); the acute phase is implemented in the case of symptomatic forms of periodontal disease, necrotised, periodontal abscesses.

Most forms of the gingivitis and of destructive periodontal diseases are not painful, the treatment processing in the context of the overall oral health restoration.

The removing of gum bags through the infected tissue curettage and bone re-outlining treats the periodontal disease. Although this procedure is an effective way of treatment, there are new and sophisticated procedures that are commonly used and which may influence the predictability of the proposed treatment.

The procedure of guided bone regeneration is necessary when the bone that supports the teeth has been destroyed. Removing bacteria and the regeneration treatment of the bone and of the periodontal tissue lead to reduction of fallen gingival pockets caused by the evolution of the periodontal disease. If the dental hygiene and the prophylactic professional program of maintenance will be respected, it will substantially increase the chances of keeping their own teeth.

After completing the initial periodontal

treatment, the pathological evolution of the disease had been halted but not cured. The periodontal diseases are chronic diseases, such as diabetes or cardiovascular disease, which require constant monitoring to ensure that the disease remains inactive. Most of the periodontal patients require more frequent, effective prophylaxis every three months, instead of the usual six months, because they are much more susceptible to reactivation of the disease.

Important clinical parameters for evaluating the success of the therapy consist in reducing bleeding from sounding and depth

associated with clinical gain and optimization of bacterial plaque control.

There is not enough data to support the utility of microbiological diagnosis, although the microbiological evaluation can play an important role in guiding the therapy for aggressive periodontitis and phenotypes of disease who do not respond to conventional therapy.

The surgical therapy is to be avoided in patients with an inadequate control of bacterial plaque or hard smokers, there is not a predictable action and, therefore, was not carried out.

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