

# Periodontitis

Periodontitis is a disease of all components of the suspension apparatus. . They are typical of the formation of **true periodontal trunks**. There is destruction of the epithelial attachment and, gradually, changes to the bone (resorption).



## Etiopathogenesis

### Main etiological factors:

- microbial plaque bacteria,
- the susceptible immune system of an individual.

**There is destruction of the epithelial attachment and, gradually, changes to the bone (resorption).**

### Secondary factors:

- hormonal influences,
- diabetes mellitus,
- smoking,
- increased plaque retention plaku (overhanging fillings, inadequate prosthetic work, hyperplastic gums, orthodontic anomalies, side effects of drugs, ...)
- traumatic articulation,,
- anatomical deviations of soft tissues (shallow vestibule, pull of frenulum, ...)

## Plaque theory

### Non-specific plaque theory

The quantity of bacteria plays a greater role than species representation (non-specific infection). It mainly applies to marginal periodontitis.

### Specific plaque theory

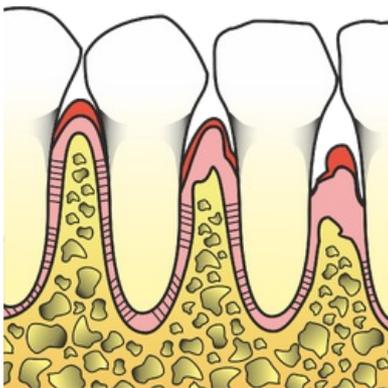
A specific periodontal pathogen, or their group. Applies to juvenile periodontitis.

### Exogenous plaque theory

The infection is caused by bacteria that are not found in the physiological microflora of the plaque.

## Clinical picture

### Right periodontal trunk



Formation of periodontal trunk

It penetrates through loss of attachment due to destruction of collagen fibers, resorption of alveolar bone and apical migration of connective epithelium. We distinguish 2 types:

1. **The supraalveolar trunk** ends above the level of the alveolar bone.
2. **The intraalveolar trunk** ends below the level of the alveolar bone.

### Alveolar bone resorption

Initially, the compacta decreases and gradually the edge of the alveolar bone decreases. There are 2 basic types of resorption:

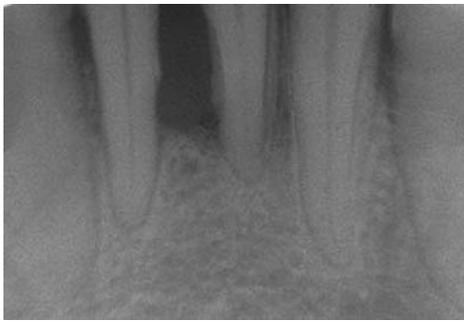
- **Inhorizontal resorption** the septa are equally affected and the resorptive surface thus forms a line.
- **Vertical resorption** is steeply inclined towards the affected tooth. Typical for overloaded teeth (traumatic articulation, ...)

### Types of bone defects

According to the relationship of alveolar bone resorption to the tooth or teeth, we distinguish the following types of bone defects:

1. **A three-walled bone defect** occurs in the case of alveolar bone involvement only in relation to 1 tooth.
2. in **a double-walled bone defect**, esorption affects both adjacent teeth.
3. **A single-walled bone defect** also includes resorption of the oral or vestibular wall of the alveolar bone.
4. in **a circular bone defect**, the bone around the tooth is missing.

### Impairment of furcations



Bone resorption

In multi-rooted teeth (**molars**) bone resorption can also occur between the individual roots. Impairment of the furcation is detected with a special **Nabers probe**, which is calibrated and has an arc-shaped shape.

1. Furcation is not affected ( **F0** ).
2. Affected part of the furcation, the probe reaches between the roots up to 3 mm (**F1**).
3. The probe extends between the roots further than 3 mm (**F2**).
4. The entire furcation is affected, the probe can be penetrated through (**F3**).

### Other symptoms of periodontitis

In advanced forms of periodontitis, **the teeth** become loose and a very late symptom is the so-called; **wandering of the teeth**. **Recessions**, may also occur, which are receding gums that lead to the exposure of the necks and roots. are also common. **Periodontal abscesses**.

### Loose teeth

We perform the gait examination bimanually using the fingers or a finger and a tool.

- **Grade I wobble** means horizontal mobility up to 1 mm.
- **Clumsiness II. degree** is only horizontal mobility up to 3 mm.
- **Clumsiness III. degrees** we denote mobility of the tooth in the vertical direction and greater mobility in the horizontal direction.

### Teeth wandering

A spontaneous change in the position of the teeth is typical for the upper frontal teeth in advanced periodontitis. The upper incisors move apart and protrude.

## Diagnostics

Clinical examination:

- bleeding after probing;
- periodontal trunks deeper than 3.5 mm;
- looseness of teeth;
- tooth migration.

X-ray vyšetření – X-ray status (intraoral images):

- rubbed, unclear compact;
- vertical/horizontal bone resorption.

## Therapy of periodontitis

We plan therapy for each patient individually, according to a specific finding. In general, it can be divided into several stages.

### Initial therapy

- regulation hygiene;
- patient education and motivation;
- restoration of teeth;
- scaling, root planing;
- prosthetic treatment plan;
- ground glass;
- splinting.

### Surgical phase

- extraction of teeth with poor prognosis;
- reactive periodontological procedures.

### Reconstructive (prosthetic) phase

### Maintenance phase

- repeated visits, examination, motivation, instruction.

## Individual types of periodontitis

### Marginal periodontitis

It is an inflammatory, bacterial plaque induced disease of all parts of the marginal periodontium, i.e. gingiva, periodontium, cementum and alveolar bone. It is associated with loss of supporting tissues.

### **Clinical picture**

- symptoms of gingivitis;
- bone loss, abscesses, tooth displacements and inclinations;
- periodontal trunks with loss of attachment;
- increased tooth mobility (late symptom);
- affected individual teeth, groups of teeth and the entire dentition;
- active trunk = trunk with typical signs of inflammation (bleeding, exudate, ...);
- bumpy course - a period of progression alternates with a period of stagnation.

### **Causes**

- Bacterial infection based on previous gingivitis.

### **Periodontitis marginalis superficialis**

- Inflammatory disease of all components of the periodontium with loss of attachment (radiologically, loss of attachment) up to about 1/3 of the root length (cemento-enamel border - apex).

### **Periodontitis marginalis profunda**

- Inflammatory disease of all components of the periodontium with loss of attachment (radiological bone resorption) of more than 1/3 of the root length or with furcation involvement

## **Division according to the rate of progression and according to the age of the patient**

### **Prepubertal periodontitis**

- already during the eruption of milk teeth (2-4 years of age);
- localized form - only individual teeth are affected;
- generalized form - all teeth are affected, the gingiva is strongly inflamed - up to the loss of the entire milk dentition, often associated with a general susceptibility to infections (e.g. otitis media);
- cause - mixed bacterial flora, functional defects of granulocytes and monocytes (heredity).

### **Localized Juvenile Periodontitis (LJP)**

- from the age of 10 and above;
- severe periodontal lesions - rapidly progressing osteolysis (can slow down to stop) - central incisors, first molars - symmetrical distribution;
- without treatment - localized form - generalized;
- in a short time, complete destruction of the suspension apparatus of the affected teeth may occur;
- gingiva only minimal signs of inflammation !!! (the amount of plaque and calculus does not correlate with the degree of periodontal destruction);
- prevention - probing I1 and M1 in adolescent patients (early detection of the disease);
- often functional defects of granulocytes and monocytes (reduced ability of phagocytosis and chemotaxis, neutrophils are unable to kill phagocytosed bacteria) - AR or GD.

### **Rapidly progressive periodontitis (RPP)**

- RPP = rapid progressive periodontitis;
- between puberty and the age of 35 - may arise from juvenile periodontitis;
- patients do not suffer from systemic disease;
- severe periodontal lesions in many teeth;
- different occurrence of plaque - some patients have a lot, others a little;
- cyclic bone destruction - very fast (periodontal breakdown);
- gingiva only slightly inflammatory;
- microbial flora - G- anaerobes and spirochetes (*Porphyromonas gingivalis*);
- again possible genetic disposition (defect of monocytes and granulocytes) - GD.

### **Slowly progressive periodontitis (AP)**

- AP = adult periodontitis;
- From 30-35 of the year - development on the basis of previous gingivitis;
- bone destruction - not limited to certain groups of teeth (more common in M and I);
- chronic course - in shocks (quiet trunks and active trunks);
- gingiva fibrotic or inflammatory thickened (shrinkage rarely);

- insufficient hygiene, a large amount of supra- and subgingival plaque and stone;
- cause – a large amount of plaque settling in suitable places (subgingival) without a genetic disposition.

## Links

### related articles

- Anatomy of the periodontium
- Periodontology - basics
- Pathology of the periodontium
- Gingivitis
- Aggressive periodontitis

### External links

### Source

- POLENÍK, Pavel. *Patologie parodontu* [lecture for subject Preventivní zubní lékařství, specialization Zubní lékařství, LFP UK]. Plzeň. 19.12.2008.
- POLENÍK, Pavel. *Subgingivální ošetření v praxi zubního lékaře*. 1. edition. Quintessenz, 2008. ISBN 978-80-86979-04-5.
- POLENÍK, Pavel. *Odborná praxe zubního lékaře : komplexní průvodce stomatologií. Část 6*. 1. edition. Dashöfer, nakladatelství, 2004. ISBN 80-86229-21-1.