

Private Stomatologic Consulting Rooms in Krosno  
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### *The impact of tobacco smoking on oral health*

It is believed that there is not one single cause of periodontopathy. Its course, favourable prognosis and effectiveness of therapy are dependant on a combination of factors (1, 9, 12).

In Poland a significant number of patients is afflicted with periodontopathy. Smokers are particularly susceptible to develop this disease. Numerous toxic substances, i.e. nicotine, carbon monoxide, hydrogen cyanide, benzene, vinyl chloride, urethane, aromatic nitrohydrocarbons and nitrogen oxides present in tobacco smoke have damaging health effects on the oral cavity. Some of the compounds were proved to be carcinogens (cancer-causing agents) affecting oral mucosa (10, 11). Nicotine itself has marked effects on the immune system. It contributes to decreased chemotaxis and phagocytosis of neutrophilic granulocytes, lower level of IgG2 in serum, a decline in number of suppressor T lymphocytes (2, 5, 7). Nicotine has not only an immunosuppressive function but also it produces changes in microflora of gingival pockets, gum perfusion and affects the healing process (9). Consequently, a profound structures destruction occur. Smokers develop more severe paradontitis with more frequent disease aggravation of the disease. Moreover, it has been observed that smokers show greater reduction of dental bones, faster formation of tartar, worse results after surgical treatment and more frequent therapy refractoriness. Smoking cessation slows down lesion development or stops its progression (6).

#### CASE DESCRIPTION

In a 39-year-old patient paradontopathy was detected. The history of a patient showed that there was evidence for the disease, i.e. teeth loosening and gum bleeding, since the patient was 12. Over the last ten years, approximately twice a year periodontal abscess appeared. Since 2001 the patient was under regular stomatological treatment. At first, the removal of dental tartar was conducted once a year and then repeated in a shorter series of six months. Now, she has tooth scaling performed every three months. A significant improvement in oral health has been observed. The patient has been smoking 5–10 cigarettes a day for 15 years. The patient complains of no systemic diseases.

Clinical examination showed supragingival dental calculus above the gum line (up to 1/3 of the crown of the teeth of lower jaw) and subgingival calculus, dental deposit and tooth discolouration, gum bleeding when inserting a bougie, periodontal pockets with a depth of 2 mm (17, 36, 41, 42) were found, loose upper and lower incisors (grade 1), barring of the neck of teeth and horizontal alveolar bone loss on the pantomograph picture. Due to paradontopathy, the patient lost some of her teeth (36, 46, 47). The teeth in the upper jaw that face lips and cheek and to a lesser extent those corresponding in the lower jaw, show thinned alveolar bone lamellae and paleness of oral mucosa covering them, which enables to feel dental roots on palpation.

In stomatologic consulting rooms scaling and sandblasting were performed to remove dental deposits, after that periodontal pockets were rinsed with metronidazole. The patient was recommended to maintain oral hygiene and to use Parodontax Classic toothpaste and Listerine Cleanmint mouthwash. Furthermore, she was advised to quit smoking or at least cut on the number of cigarettes. The patient was scheduled follow-up appointment in 3 months.

The patient followed the instructions and visited a dentist for a check-up. Due to smoking cessation, considerable improvement in paradontium was noted, i.e. blood flow increased, marked regeneration of alveolar bone lamellae was visible both in clinical examination and in pantomograph picture (Fig. 1). A significant improvement in dental bones was observed after 3 months since the patient quitted smoking.



Fig. 1. Pantomograph picture – oral health after smoking cessation (taken on October 6, 2006)

Under normal conditions dental bone levels do not change, new bone formation equals the amount of resorbed one. Humoral and cellular transmitters for bone tissue regeneration undertake this responsibility (3). In a smoker, this process is violated. The case presented in this study illustrates an increased resorption of alveolar bone due to tobacco smoking. In merely 3 months after smoking cessation, not only regeneration of lamina dura was observed in the patient but also improvement in blood flow within paradontal tissues, and all that in such a short period of time. Moreover, the process of dental tartar accumulation was slowed down.

This case is an example of a rarely so radical oral health improvement after smoking cessation.

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### SUMMARY

Tobacco smoking performs a decisive role in aetiopathogenesis of periodontal diseases. The study shows a rare case of a 39-year-old woman whose oral health improved remarkably fast and whose dental bones in the upper and lower jaw regenerated extremely fast after smoking cessation. The patient suffered from periodontal disease for about 20 years. She visited her dentist regularly for stomatological treatment during the past 5 years, and she had good results. However, only after she had quitted tobacco smoking her dental bones in upper and lower jaw started to regenerate. The improvement is clearly visible in pantomograph picture.

### Wpływ palenia tytoniu na stan zdrowia jamy ustnej

Palenie tytoniu odgrywa znaczącą rolę w etiopatogenezie chorób przyzębia. W pracy przedstawiono rzadki przypadek 39-letniej kobiety, u której po zaprzestaniu palenia doszło do niezwykle szybkiej poprawy stanu jamy ustnej oraz odbudowy kostnej szczęki i żuchwy. Pacjentka od blisko 20 lat chorowała na chorobę przyzębia. Regularnie od pięciu lat była leczona stomatologicznie z dobrym efektem. Jednak dopiero przerwanie palenia spowodowało wzrost masy kostnej żuchwy i szczęki. Efekty widoczne są na pantomogramie.