

CLINICAL CASE

Dent. Med. Probl. 2013, 50, 4, 481–485
ISSN 1644-387X

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Interdisciplinary Treatment of Adult Patients – Case Report

Leczenie interdyscyplinarne pacjenta dorosłego – opis przypadku

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A – concept, B – data collection, C – statistics, D – data interpretation, E – writing/editing the text,
F – compiling the bibliography

Abstract

Adult patients often undergo dental surgeries with the need to restore proper occlusion and a stable therapeutic effect in both functional and aesthetic terms, which entails carrying out multidisciplinary treatment. The purpose of this paper is to present the principles of conduct in interdisciplinary treatment of adult patients based on this description. The 62-year-old female patient suffered from chronic periodontitis, multiple gingival recessions, incorrect root canal treatment of teeth 14–17, 26, 27 primary and secondary malocclusion and absence of teeth. Multistage treatment was executed inclusive of periodontal treatment, orthodontics with the use of fixed appliances, microimplants and implant-prosthetic treatment. After 20 months, satisfactory occlusion both in function and aesthetics was achieved. The presented algorithm represents a major therapeutic challenge for doctors and patients, but with proper treatment and good communication between professionals, the possibility of achieving optimal results is enabled (**Dent. Med. Probl. 2013, 50, 4, 481–485**).

Key words: interdisciplinary treatment, orthodontic microimplants, dental implants.

Streszczenie

Do gabinetów stomatologicznych zgłaszają się niejednokrotnie pacjenci dorośli, u których potrzeba przywrócenia prawidłowych warunków zgryzowych oraz uzyskania stabilnego efektu terapeutycznego zarówno pod względem czynnościowym, jak i estetycznym wymusza przeprowadzenie leczenia wielospecjalistycznego. Celem pracy jest przedstawienie zasad postępowania podczas leczenia interdyscyplinarnego pacjentów dorosłych na podstawie opisu przypadku. U 62-letniej pacjentki zdiagnozowano przewlekłe zapalenie przyzębia, mnogie recesje dziąsłowe, niewłaściwe leczenie kanałowe zębów 14–17, 26, 27, pierwotną wadę zgryzu i wtórną wadę zgryzu oraz braki zębowe. Przeprowadzono wieloetapowe leczenie periodontologiczne, ortodontyczne z zastosowaniem stałych aparatów cienkołukowych oraz mikroimplantów i implanto-protetyczne. Po upływie 20 miesięcy uzyskano satysfakcjonującą okluzję zarówno pod względem czynnościowym, jak i estetycznym. Przedstawiony algorytm postępowania terapeutycznego stanowi duże wyzwanie dla lekarzy prowadzących pacjenta, jednak dzięki właściwemu leczeniu i dobrej komunikacji między specjalistami daje możliwość uzyskania najbardziej optymalnych rezultatów (**Dent. Med. Probl. 2013, 50, 4, 481–485**).

Słowa kluczowe: leczenie interdyscyplinarne, mikroimplanty ortodontyczne, implanty zębowe.

Dental patients often present themselves at orthodontic surgeries requiring full rehabilitation of the masticatory system. The presence of primary and secondary malocclusion, periodon-

titis, tooth loss, incorrect previous conservative and prosthetic treatment makes the establishment of an adequate treatment plan difficult. The reinstatement of proper occlusion and obtainment of

a stable therapeutic effect both in respect of function and aesthetics, forces the introduction of interdisciplinary treatment [1, 2]. Intensive development within the various fields of dentistry and the introduction of new equipment and materials can significantly broaden the scope of action and therapeutic possibilities. This enables more patients to undergo comprehensive treatment and full rehabilitation of masticatory system, despite the substantial destruction [3].

The aim of the present work is to formalise management rules during interdisciplinary treatment of adult patients based on a case report.

Case Report

A 62-year-old female patient H.P. asked her dentist to restore her missing teeth. The extraoral examination showed the presence of harmonic facial features (Fig. 1) but the clinical intraoral examination (Fig. 2) and radiograms (Fig. 3) displayed complex problems requiring interdisciplinary therapy, the goal of which would be the restoration of the proper occlusal conditions and suitable aesthetics. In this case, chronic periodon-

titis had been diagnosed, multiple gingival recessions, incorrect root canal treatment of teeth 14, 15, 16, 17, 26, 27, primary malocclusion – class II division 2, dental malpositions, secondary malocclusion – extrusion of teeth 16, 26, 12, 22 and absence of teeth. The first stage of treatment entailed periodontal therapy. Thus, the pathologic changes within the periodontium were minor, treatment was limited to oral hygiene instruction, scaling and root planning and closed curettage around teeth 16 and 26. After four weeks, oral hygiene control was performed. Subsequently, the active orthodontic therapy started. Two orthodontic mini-implants Absoanchor BH, length 8 mm (Absoanchor® BH 1514-08) were inserted in the maxilla between the roots of teeth 15 and 16 and 25 and 26. After two weeks, the mini-implants were loaded with the application of a utility arch made from NiTi wire, diameter 0.018 (Fig. 4). The introduction of a permanent change to the shape of the NiTi wire would be impossible without using the Memory Maker®, which preserves the new shape of the wire by means of an electrical charge flowing through its structure. After the protrusion and intrusion of upper central incisors have been achieved, the other brackets



Fig. 1. Pretreatment extraoral status

Ryc. 1. Zdjęcia zewnętrzne, stan przed leczeniem



Fig. 2. Pretreatment intraoral status

Ryc. 2. Zdjęcia zewnętrzne, stan przed leczeniem



Fig. 3. OPD

Ryc. 3. Ortopantomogram



Fig. 4. Intrusion

Ryc. 4. Intruzja

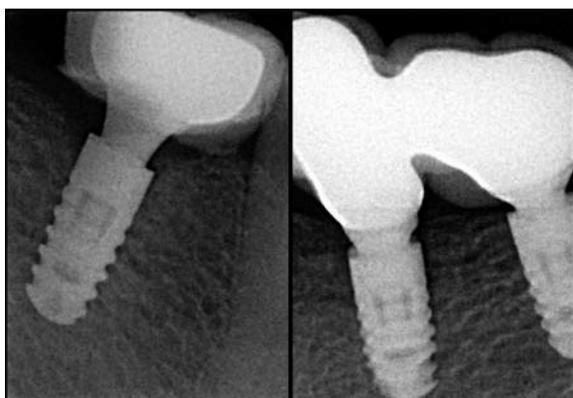


Fig. 5. Posttreatment x-rays

Ryc. 5. Stan radiologiczny po leczeniu

were bonded and full orthodontic treatment performed. The treatment time was 18 months. For retention, FSW retainers in the upper and lower arch were used.

Two months before the appliance was debonded, dental implants Ankylos® (Dentsply Friadent) were inserted in the mandible – on the right hand side a dental implant with the dimension of 3.5×11 mm was applied and on the left hand side two dental implants 3.5×9.5 mm in diameter. During this time when the final stages of orthodontic treatment were performed, osteointegra-



Fig. 6. Posttreatment intraoral status

Ryc. 6. Stan po leczeniu, zdjęcia wewnątrzustne



Fig. 7. Posttreatment extraoral status

Ryc. 7. Stan po leczeniu, zdjęcia zewnątrzustne

tion of dental implants was also utilized, and so the implants could be loaded with the final prosthetic work immediately after the fixed appliance had been removed. On the right side, the single prosthetic single crown cemented on titanium abutment (porcelain fused to titanium) and on the left side splinted crowns cemented on titanium abutment (porcelain fused to titanium) were completed (Fig. 5). The whole treatment time included 20 months. Satisfactory occlusion both in function (Fig. 6) and aesthetics (Fig. 7) was achieved.

Discussion

The presented case required the establishment of a very precise treatment plan before any procedure could be started. Untreated childhood primary malocclusion, periodontitis and premature teeth extractions in the lateral aspects had led to significant degenerative changes. In such cases stabilizing the periodontium has to be the priority. Only then can active orthodontic therapy be started [4]. Due to the fact that missing teeth had not been treated in time, the upper molars, having no support, suffered from extrusion, preventing prosthetic rehabilitation. The solution in such cases could be the grinding and endodontic treatment of the upper molars and subsequently their crowning or orthodontic intrusion [5]. In the majority of the more commonly used methods of incisor intrusion a secondary effect can be propagated onto molars – namely their extrusion [6–8]. In the presented case an alternative solution needed

be found, because the molars also required intrusion and, furthermore, the weakened periodontium did not constitute sufficient anchorage. The localization between the roots of second premolar and first molar in the maxilla is recognised as one of the safest [9–11]. Moreover, it enables the execution of both molar and incisor intrusion with the use of only two mini-implants. During teeth intrusion the periodontal tissue state should be monitored, because it is one of the most difficult orthodontic movements, laden with possible occurrences of failure [12].

The correction of malocclusion guaranteed the proper conditions to implant prosthetic rehabilitation. There are more and more publications highlighting the opportunities of immediate dental implants loaded with prosthetic works [13, 14]. In the presented case however, keeping in mind the presence of additional diseases, the decision was made to apply the algorithm, taking into account a two months long osteointegration period. To shorten the total treatment time, the implants were inserted during the finishing phase of orthodontic treatment. Because of this, the final prosthetic crowns were made as soon as the orthodontic appliance was removed.

The therapeutic management algorithm, as presented in this paper, is a significant challenge for any dentist who treats the patient, but, with the correct treatment and good communication between specialists, it gives the opportunity to achieve the most optimal results both in aesthetics and function.

Acknowledgements: The project has been funded by the National Science Center. Grant number NN518 382537.

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Received: 12.11.2013

Revised: 12.12.2013

Accepted: 16.12.2013

Praca wpłynęła do Redakcji: 12.11.2013 r.

Po recenzji: 12.12.2013 r.

Zaakceptowano do druku: 16.12.2013 r.