



The experience of pain and patient satisfaction with dental implant-prosthetic treatment

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ABSTRACT

The absence of pain in implant-prosthetic treatment is considered, along with other factors, one of the indicators of treatment success, which undoubtedly translates into patient satisfaction. The aim of this study was the assessment of the influence of pain experienced during implant-prosthetic treatment on the level of patient satisfaction with this kind of treatment. The study was conducted in the Non-Public Health Care Centre "Dental" in Tomaszów Mazowiecki and covered 464 patients of both genders, aged 20-74, who had missing teeth replaced with dental implants. The patients answered the questions included in a written questionnaire. The questions concerned the experience of pain and the level of satisfaction with the received treatment. The study shows that pain was experienced by a little more than 1/3 of all the studied patients during implant placement, and by 81.25% of the respondents after implant placement. The patients who felt pain during and after implant placement would less frequently decide to have missing teeth replaced with this method again, and were more frequently of the opinion that costs and duration of treatment did not reflect their level of satisfaction with treatment in comparison to the patients who did not feel pain. The respondents who experienced pain during implant placement would recommend this treatment method to other people less frequently than the patients who felt no pain. The results indicate that implant-prosthetic treatment is accompanied with pain experience in a considerable proportion of patients. Pain experienced during treatment affects the level of patient satisfaction and future decisions concerning the choice of this type of treatment. It is necessary to improve peri- and postprocedural analgesia during dental implant treatment.

Keywords: dental implants, pain, patient satisfaction

INTRODUCTION

Unpleasant experiences, such as anxiety and pain, accompanying dental procedures may cause patients to avoid seeing the dentist, but also affect their satisfaction with the treatment. Especially in the case of private dental practices, where the relationship between the doctor and the patient is commercial: service provider-service recipient, the patient assumes the attitude of a client who expects the best possible service, according to the principle "I pay and I demand" [2]. The authors' own experiences and the literature review show that, especially in the case of dental practices providing full-price services, the patient wishes to be treated in a modern, well-equipped surgery by a doctor who provides the highest level medical service; if those expectations are fulfilled, the patient is able to feel a high level of satisfaction with a medical service. This also refers to elimination

of pain, considering the fact that modern dental treatment can be performed painlessly, and an increasing number of patients are interested in the possibility of dental treatment with intravenous analgesia and inhaled sedation, as well as under general anaesthesia [19].

AIM

The aim of the study was to assess the influence of pain experienced during implant treatment on the level of patient satisfaction with this kind of treatment.

MATERIAL AND METHODS

The study was conducted in the Non-Public Health Care Centre "Dental" in Tomaszów Mazowiecki and covered 464 patients of both genders, aged 20-74, who had missing teeth replaced with dental implants. The patients answered the questions included in a text questionnaire. The questions concerned the experience of pain and the level of satisfaction with the received treatment. The questionnaire model is shown in Fig. 1.

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- 1. Was the procedure of implant placement painful?**
 - a) yes
 - b) no
- 2. Did you feel pain after implant placement?**
 - a) yes
 - b) no
- 3. Would you decide to undergo the same implant treatment of missing teeth again?**
 - a) yes
 - b) difficult to say
 - c) no
- 4. Do you feel that costs and time of treatment reflect your satisfaction with replacement of missing teeth with implants?**
 - a) yes
 - b) difficult to say
 - c) no
- 5. Would you recommend replacement of missing teeth with implants to other people?**
 - a) yes
 - b) difficult to say
 - c) no

Fig. 1. Questionnaire model

For the statistical analysis of the answers concerning the sensation of pain during implant placement and after implantation, the data were combined into two categories: “yes” and “no,” whereas for the answers concerning satisfaction level, an additional category was introduced: “difficult to say.” The values of the analyzed parameters in the nominal scale were characterized with the size and percentage. Because of the small sizes of the subgroups, the χ^2 independence test was not used in statistical analysis.

RESULTS

During dental implant placement almost 2/3 of the patients did not feel pain (66.59%, 309 respondents), while a little more than 1/3 declared they experienced pain (33.41%, 155 respondents) (Tab. 1-3). However, after the implantation, pain was not experienced by 18.79% of the studied group (87 respondents), while 81.25% of the studied group (377 respondents) said they felt pain (Tab. 4, 5).

The analysis of the influence of pain felt during implantation on the willingness to undergo the same treatment of missing teeth showed that the respondents who experienced pain during implantation less frequently declared they would decide again to have missing teeth replaced with implants than the patients who felt no pain (Tab. 1).

The evaluation of the influence of pain experienced during implant placement on the level of patient satisfaction according to costs and duration of treatment showed

that the patients who experienced pain during implant placement, more frequently felt that costs and duration of treatment do not reflect their satisfaction level, or had no opinion, in comparison to the respondents who did not experience pain (Tab. 2).

Table 1. The influence of pain felt during implant placement on the decision to undergo implant treatment of missing teeth again

Pain felt during implant placement	Decision to undergo the same implant treatment of missing teeth again			Total
	Yes	Difficult to say	No	
Yes	101	37	17	155
	65.16%	23.87%	10.97%	100%
No	286	14	9	309
	92.56%	4.53%	2.91%	100%
Total	387	51	26	464

Table 2. The influence of pain felt during implant placement on satisfaction with missing teeth replacement with implants according to costs and duration of treatment

Pain felt during implant placement	Evaluation of satisfaction with missing teeth replacement with implants according to costs and duration of treatment			Total
	Yes	Difficult to say	No	
Yes	119	20	16	155
	76.77%	12.90%	10.32%	100%
No	274	29	6	309
	88.67%	9.39%	1.94%	100%
Total	393	49	22	464

Among the respondents, the patients feeling pain during implant placement, would recommend replacement of missing teeth with implants to other people less frequently in comparison to those who did not feel pain (Tab. 3).

Table 3. The influence of pain felt during implant placement on recommendation of missing teeth replacement with implants to other people.

Pain felt during implant placement	Recommendation of missing teeth replacement with implants to other people			Total
	Yes	Difficult to say	No	
Yes	121	21	13	155
	78.06%	13.55%	8.39%	100%
No	297	7	5	309
	96.12%	2.27%	1.62%	100%
Total	418	28	18	464

The assessment of the influence of pain experienced after implant placement on the possible decision to undergo treatment of missing teeth with implants again showed that those among the studied patients who felt pain after implant placement less frequently would be willing to undergo the same treatment again than the respondents who did not feel pain. Almost all the respondents who did not experience pain would decide to undergo implant treatment again (Tab. 4).

Among the studied patients, those who felt pain after implant placement more frequently expressed the opinion that costs and duration of treatment did not reflect their level of satisfaction, or had no opinion on the matter, in comparison to those who did not feel pain (Tab. 5).

Table 4. The influence of pain felt after implant placement on the decision to undergo implant treatment of missing teeth again

Pain felt after implant placement	Decision to undergo implant treatment of missing teeth again			Total
	Yes	Difficult to say	No	
Yes	302	51	24	377
	80.11%	13.53%	6.37%	100%
No	85	0	2	87
	97.70%	0.00%	2.30%	100%
Total	387	51	26	464

Table 5. The influence of pain felt after implant placement on satisfaction with missing teeth replacement with implants according to costs and duration of treatment

Pain felt after implant placement	Satisfaction with missing teeth replacement with implants according to costs and duration of treatment			Total
	Yes	Difficult to say	No	
Yes	333	26	18	377
	88.33%	6.90%	4.77%	100%
No	85	2	0	87
	97.70%	2.30%	0.00%	100%
Total	418	28	18	464

DISCUSSION

Pain is an important problem in implant-prosthetic treatment despite the routine use of analgesia and non-steroid anti-inflammatory drugs. According to the literature data, the practical effectiveness of pain elimination is low and reaches only 40% [4, 13, 16].

The choice of appropriate analgesic therapy should take into account the age of patients, concomitant diseases, medication taken at the time of implant treatment, as well as other conditions, including earlier treatment with non-steroid anti-inflammatory drugs [3]. The need to improve the technique of anesthetization and implantation procedure should also be considered. Technical errors in dental implant procedure, such as inappropriate sterilization, insufficient bone cooling during drilling of the surgical site, blunt instruments, excessive traumatization of soft tissues, are the main causes of healing disorders leading to pain [10].

Pain is also one of the symptoms of complications in implant treatment. Pain during chewing is characteristic for implant loosening [1]. This is related to the development of bacterial pathogens around the implant and the inflammatory response to implant overload [9, 18]. Intense chronic pain may also be caused by periapical lesions near an implant [17]. However, particularly intense pain is associated with acute inflammatory lesions. In this case, the inflammation of the gum and periapical areas occurs, but pain response to tooth percussion does not increase [15]. The literature reports the case of a patient who after implant procedure in the anterior part of the alveolar process of the mandible developed facial pain syndrome. Initially, it was diagnosed as an idiopathic pain. Improvement was obtained only after administration of nortriptyline, clonazepam and relaxation procedures [14].

The absence of pain in implant-prosthetic treatment is considered, along with other factors, as one of the indicators of treatment success [7], which undoubtedly translates into patient satisfaction. As our own research shows, pain significantly affects the satisfaction level in patients treated with dental implants. The patients who experienced pain during and after implant placement would less frequently decide to undergo the same treatment and were more frequently of the opinion that costs and duration of treatment did not reflect their satisfaction level. They would also less frequently recommend replacement of missing teeth with implants to other people. The latter indication of satisfaction was evaluated in the group of the respondents who felt pain during implant placement. The insufficient size of subgroups did not allow the assessment of the influence of pain felt after implantation on the level of satisfaction indicated by the willingness to recommend treatment of missing teeth with implants to others.

It should be observed that dental implantation is a procedure involving an anatomically complicated area, densely vascularized and innervated. The procedure is performed in a limited, technically difficult site, close to the important sense organs. Like other dental procedures, it is accompanied with fear, anxiety, tension, and not infrequently also pain [8, 11]. As application of local analgesics allows only partial elimination of unpleasant experiences, sedation on an outpatient basis seems worth considering [5].

Individually determined appropriate dose of an appropriate non-steroid anti-inflammatory drug, and in justified cases, combining those drugs with opioids should be taken into consideration [6, 12, 20].

CONCLUSIONS

1. Implant-prosthetic treatment is accompanied with pain experience in a considerable proportion of patients.
2. Pain associated with implant treatment affects the level of patient satisfaction and future decisions concerning the choice of this type of treatment.
3. It is necessary to improve peri- and postprocedural analgesia during implant-prosthetic treatment.

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