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Patient experience of, and satisfaction with, delayed-immediate vs. delayed single-tooth implant placement

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Abstract

Objectives: Recent investigations have focused on patients' subjective assessment of implant treatment. The aim of this study was to compare the patients' experience of surgical and prosthetic procedures, as well as satisfaction with function and aesthetics following single-tooth replacements mounted to early vs. delayed placed dental implants.

Material and methods: Forty-six patients were treated with a single-tooth implant in the anterior or premolar region. Twenty-three implants were placed on average 10 days after tooth extraction (Im), while 23 implants were placed approximately 3 months after tooth extraction (De). Forty-one patients completed a questionnaire regarding the treatment using visual analog scales (VAS) and check boxes 16–18 months after delivery of the restoration.

Results: In all, 90% of the respondents rated 88 or higher on the VAS regarding satisfaction with the crown. Satisfaction with the restoration in general and the appearance was significantly greater in the Im group than in the De group (96 vs. 93; $P < 0.02$). Assessment of the implant surgery was not significantly different between the delayed-immediate and the delayed group. Approximately 25% of the patients experienced unpleasantness in relation to the prosthetic procedures, and in 8 of 11 cases, impression taking was the cause. When evaluating satisfaction with the overall implant treatment, the VAS scores for the delayed-immediate group were significantly higher than for the delayed group (96 vs. 90; $P < 0.02$).

Conclusion: The patients in the present study were highly satisfied with the outcome of the treatment and experienced it to be without significant unpleasantness irrespective of the treatment concept.

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Surgical as well as prosthodontic aspects of dental implant treatment have been evaluated in several studies by the use of objective criteria for treatment success. However, only little is known about the patient's experience of implant treatment and his/her satisfaction with the definitive outcome.

Recent investigations have focused on patient-based outcomes as a supplement to clinical parameters in the assessment of

dental treatment (Haisch 2000; Heydecke 2002). The functional and aesthetic outcome of implant-supported restorations have been assessed in clinical studies by using patient questionnaires (Tavares et al. 1990; Cune et al. 1994; Isidor et al. 1999; Chang et al. 1999a; Chang et al. 1999b; Zitzmann & Marinello 2000; Gibbard & Zarb 2002). Furthermore, factors such as satisfaction, expectations, and level of discomfort associated with implant treatment

have been evaluated (Clancy et al. 1991), while in other studies the patient's perception of pain in relation to dental implantology procedures was examined (Muller & Rios Calvo 2001; Eli et al. 2003).

Previous research has shown that immediate placement of dental implants is a predictable method for restoring partially or completely edentulous patients (Schwartz-Arad & Chaushu 1997). No studies, however, have addressed this treatment concept or compared it with other protocols regarding patient satisfaction and experience of the treatment.

The purpose of the present study was to compare the patients' experience of surgical and prosthetic procedures, as well as satisfaction with function and aesthetics following single-tooth replacements mounted to early vs. delayed placed dental implants.

Material and methods

The study group consisted of 41 patients (23 women, 18 men) with a mean age of 50 (range 23–76 years) who had been treated with an implant-supported single-tooth restoration in the anterior or premolar region. In one case, however, a 3 unit fixed-partial denture was made. The distribution of the implant regions is displayed in Fig. 1. Briefly, an Osseotite implant (3i Implant Innovations Inc., Palm Beach Gardens, FL, USA) was placed in 46 patients during the years 1999–2000. Patients referred for tooth extraction and subsequent single-tooth implant treatment at the incisor, canine, and premolar regions of the maxilla or the mandible were randomly allocated to a delayed-immediate (Im) group or a delayed (De) group at their first examination. Performing a closed randomisation ensured an even distribution in the two groups. The implants in the former group were placed on average 10 days following tooth extraction, while in the latter group the implants were placed after a healing period of approximately 3 months. For ethical reasons, autogenous bone chips harvested from the adjacent bone were grafted to any exposed implant threads in cases of dehiscences or fenestrations present in the De group. These types of defects were likewise grafted with autogenous bone chips at the abutment opera-

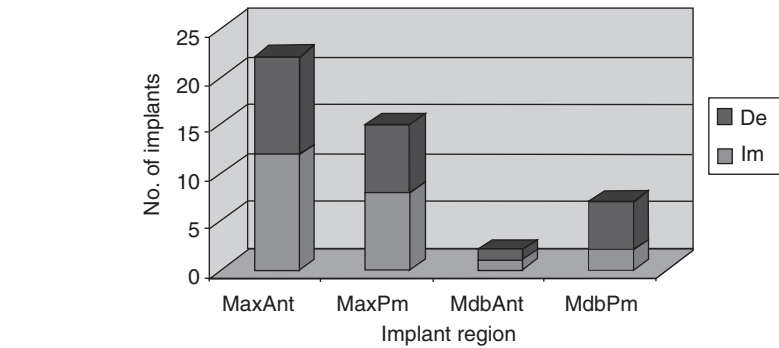


Fig. 1. Distribution of implant regions: MaxAnt = maxillary anterior region; MaxPm = maxillary premolar region; MdbAnt = mandibular anterior region; MdbPm = mandibular premolar region.

tion in both groups. The same surgeon (LK) performed all implant placements. After a 3-month healing period in the Im and De groups, a one-piece or two-piece EP[®] Healing Abutment (3i Implant Innovations, Palm Beach, FL, USA) was mounted on the implants at the second-stage surgeries in order to condition the peri-implant soft tissues for 4 to 6 weeks. Abutment surgery was performed by the same operator (LS) in all cases (for detailed information, see Schropp et al. 2003). Two different types of abutment were used: 4 UCLA abutments and 16 STA abutments (3i Implant Innovations Inc., Palm Beach Gardens, FL, USA) in the Im group, and 13 UCLA abutments and 8 STA abutments in the De group. A metal-ceramic crown was made in all cases. Thirty-nine crowns were cemented while two were screw-retained. The same prosthodontist performed all the prosthetic procedures in all cases, and all the crowns except two were fabricated and the colour was chosen by the same dental technician.

Forty-one of 46 patients attended a follow-up visit to the clinic 16–18 months after mounting of the prosthetic restoration (20 in the delayed-immediate group; 21 in the delayed group). They were asked to complete a questionnaire measuring their satisfaction with the definitive restoration in terms of appearance (shape and colour), chewing function, ease of cleaning, and adaptation (Fig. 2). Furthermore, discomfort related to implant surgery, abutment surgery, or associated with impression and mounting of the restoration, as well as experience of the treatment period were assessed. Patients who wore an acrylic resin base denture as a temporary replacement for the missing tooth were asked

about the use of this denture during the course of treatment.

Eighteen of 23 questions were scored on 100 mm visual analog scales (VAS), while check boxes were used for the 5 remaining questions (Fig. 2). On the VAS, the patients marked their response on a horizontal line for which the most negative expression corresponded to 0 and the most positive to 100. This is illustrated by the following example:

Were you swollen in the area after the first operation?

Very swollen (= 0) ↔ Not swollen (= 100)

The answers were given by the patients on their own with no interference of a second person.

A standard statistical program (SPSS) was used for the data analyses. Differences between the delayed-immediate and delayed group regarding implant region and age distribution were tested by χ^2 test and the Student's *t*-test, respectively. Differences in the VAS scores for the two groups were tested by means of the Mann-Whitney *U*-test, and the distribution of the check box marks by χ^2 tests. In addition, a comparison between the implant surgery and the abutment surgery was made and analysed by Wilcoxon matched-pairs signed-ranks test. In order to see whether age or gender had an influence on the patient's experience, the patients were divided into two age groups (<50 and \geq 50 years), and the scores for the groups were compared. Likewise, the results for men and women were compared. Mann-Whitney *U*-tests and χ^2 tests, respectively, were applied for these analyses. The level of statistical significance was set at $\alpha = 0.05$.

<p>Q1. How did you experience the period between tooth extraction and insertion of the implant crown? Very long ●—————● Short</p> <p>Q2. How did you experience the period between tooth extraction and insertion of the implant crown? Very unpleasant ●—————● Without unpleasantness</p> <p>Q3a. Did you get a denture for use in the "toothless" period? Yes <input type="checkbox"/> No <input type="checkbox"/></p> <p>Q3b. If yes to the above, how did you use the denture? (Mark one or more) Hardly ever <input type="checkbox"/> Purely for the aesthetics <input type="checkbox"/> For eating <input type="checkbox"/> Solely by day <input type="checkbox"/> Both night and day <input type="checkbox"/></p> <p>Q3c. If you used the denture, how was it to use? Very unpleasant ●—————● Without unpleasantness</p> <p>Q4. How did you experience the first operation (implant insertion) ? Very unpleasant ●—————● Without unpleasantness</p> <p>Q5. Did you feel pain after the first operation ? Very much ●—————● Not at all</p> <p>Q6. Were you swollen in the area after the first operation ? Very swollen ●—————● Not swollen</p> <p>Q7. If you used a denture, how did it function after the first operation ? Worse than before <input type="checkbox"/> In the same way <input type="checkbox"/> Better than before <input type="checkbox"/></p> <p>Q8. How did you experience the second operation (mounting of the healing cylinder) ? Very unpleasant ●—————● Without unpleasantness</p> <p>Q9. Did you feel pain after the second operation ? Very much ●—————● Not at all</p> <p>Q10. Were you swollen in the area after the second operation ? Very swollen ●—————● Not swollen</p>	<p>Q11. If you used a denture, how did it function after the second operation ? Worse than before <input type="checkbox"/> In the same way <input type="checkbox"/> Better than before <input type="checkbox"/></p> <p>Q12a. How did you experience the making for the crown ? Very unpleasant ●—————● Without unpleasantness</p> <p>Q12b. If making for the crown caused unpleasantness, what was then unpleasant ? (Mark one or more) Impression for the crown <input type="checkbox"/> Try-in of the crown <input type="checkbox"/> Mounting/cementing of the crown <input type="checkbox"/></p> <p>Q13. Were you satisfied with the crown after insertion ? Very unsatisfied ●—————● Very satisfied</p> <p>Q14. When did you get accustomed to the new crown ? Never ●—————● Immediately</p> <p>Q15. Are you in general satisfied with the appearance of the crown ? Very unsatisfied ●—————● Very satisfied</p> <p>Q16. How do you find the shape of the crown ? Ugly-looking ●—————● Fine</p> <p>Q17. How do you find the colour of the crown ? Ugly-looking ●—————● Fine</p> <p>Q18. How do you chew after insertion of the crown ? Badly ●—————● Well (=Normally)</p> <p>Q19. How is cleaning around the tooth ? Difficult ●—————● Easy</p> <p>Q20. How was your experience of the overall treatment ? Very unsatisfied ●—————● Very satisfied</p>
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Fig. 2. Questionnaire translated from Danish.

Table 1. Visual analog scales scores: Medians; 25th and 75th Percentiles

Questions	Delayed-immediate	Delayed	All
Q1 Whole period – time	74; 52/91*	57; 32/69	66; 49/82
Q2 Whole period – unpleasantness	80; 68/90	87; 74/92	83; 74/90
Q3c Satisfaction with denture	58; 36/83	48; 30/58	48; 33/75
Q4 Implant surgery – unpleasantness	61; 40/81	63; 51/83	62; 47/83
Q5 Implant surgery – pain	85; 62/92	85; 70/93	85; 69/93
Q6 Implant surgery – swelling	65; 39/80	73; 53/87	73; 47/84
Q8 Abutment surgery – unpleasantness	74; 61/95	78; 68/87	77; 65/90
Q9 Abutment surgery – pain	85; 78/95	90; 87/94	89; 81/94
Q10 Abutment surgery – swelling	88; 75/92	91; 82/97	89; 78/94
Q12a Crown making – unpleasantness	89; 78/96	90; 79/94	90; 78/95
Q13 Satisfaction with restoration	96; 94/99*	93; 88/94	94; 92/97
Q14 Adaptation	95; 87/97	87; 80/95	89; 84/96
Q15 Appearance	96; 95/99*	93; 91/95	95; 92/97
Q16 Shape	96; 86/98	92; 86/95	94; 85/96
Q17 Colour	96; 89/97	92; 85/95	94; 88/96
Q18 Chewing	97; 96/99	95; 92/97	97; 93/99
Q19 Cleaning	94; 88/96	88; 69/95	90; 79/96
Q20 Experience of overall treatment	96; 94/98*	90; 86/95	94; 88/97

0 = most negative; 100 = most positive.
*Indicates $P < 0.05$.

Results

The age distribution was not significantly different ($P > 0.7$) between the Im group ($\bar{x} = 51$ years, range 28–72) and the De group ($\bar{x} = 49$ years, range 23–76). Furthermore, no significant differences between

the groups existed in terms of distribution of the implants in the maxilla and the mandible ($P > 0.29$), or in the anterior and posterior regions ($P > 0.64$) (Fig. 1).

The response rate for the VAS scores was 100%, except that one patient missed 7 questions. The ratings on the VAS are

listed in Table 1. Patients in the delayed-immediate group scored 74 on average when asked how they experienced the time aspect of the period between tooth extraction and mounting of the implant-retained crown. These patients experienced the time significantly shorter than patients in the delayed group ($P < 0.005$). Concerning the perception of discomfort in the 'toothless' period, no significant difference was found between the two groups ($P > 0.36$).

Several aspects of the tooth restoration were assessed by the patients. Regardless of whether the delayed-immediate or the delayed treatment concept was applied, a great satisfaction with the crown after mounting was found. Ninety percent of the respondents rated 88 or higher on the VAS. However, patients in the Im group were significantly more satisfied than those who had undergone the delayed mode (mean VAS score of 96 vs. 93; $P < 0.005$). Likewise, the former scored significantly higher with regard to the general appearance of the restoration (96 vs. 93; $P < 0.02$). Concerning the assessment of adaptation to the restoration, shape, colour, chewing function, and ease of cleaning, the VAS scores were in the range of 94–97 in the Im

group, and 87–95 in the De group. For these parameters, no statistically significant difference existed between the two groups ($P > 0.05$).

The assessments of implant surgery or the abutment surgery were not significantly different between the delayed-immediate and the delayed group. The mean scores for unpleasantness related to the implant surgery were 61 and 63, respectively. When evaluating pain, a mean score of 85 was found in both groups, while a minor difference between the groups was seen when assessing swelling – 65 vs. 73 (100 corresponds to no pain or no swelling, respectively). It was also revealed that the patients experienced the implant operation significantly worse than the abutment operation with respect to unpleasantness, pain and swelling ($P < 0.01$). However, analysing the difference between the two surgical procedures for the two groups separately, a significant difference was exclusively seen for swelling in both groups ($P < 0.001$) and for unpleasantness in the Im group ($P < 0.03$). Only little unpleasantness in conjunction with impression taking, try-in and mounting of the crown was found – a mean rating of 89 for the Im group and 90 for the De group. Eleven patients experienced discomfort (Table 2). In 8 of these cases, it was specified that impression taking was the cause, while unpleasantness was related to try-in in two cases and mounting in one case.

For the period between tooth extraction and insertion of the restoration, an acrylic base removable partial denture was made in 70% of the delayed-immediate cases and in 48% of the delayed cases (Table 2). Of the 24 patients, who got a denture, 6 did not wear it. Eight of the 9 denture wearers in the Im group used the denture solely by day, and 3 did not use it for eating. In the De group, 90% used the denture: two-thirds only during the day. The patients

were asked how the denture functioned after the implant surgery and the abutment surgery, respectively. Sixteen of 18 responded to the question concerning the former operation and all found that no difference existed for the denture function pre-surgically and post-surgically. In the Im group, 3 of 9 patients found that the denture functioned worse after abutment surgery, while the remaining experienced no difference. In the De group, 5 of 9 responded to the question and, of these, 4 patients found that the denture functioned equally well before and after abutment surgery, while in one case, an aggravation was experienced. The distribution of the answers marked in the check boxes was not significantly different when comparing the delayed-immediate and the delayed group ($P > 0.59$). When asking the patients how they assessed the overall implant treatment, the VAS scores for the Im group were significantly higher than for the De group (96 vs. 90; $P < 0.02$).

Comparing the VAS scores and the check box results for patients younger than 50 years and older than 50 years of age, it was found that the older patients accustomed themselves to the implant crown significantly sooner than the younger patients (94 vs. 85; $P < 0.04$). In contrast, the latter scored that they were chewing significantly better with their new restoration compared with the older patients (97 vs. 95; $P < 0.04$). Furthermore, a significant difference between men (95) and women (97) concerning chewing ability was revealed ($P < 0.04$).

Discussion

The results of the present questionnaire survey showed that a high satisfaction with the treatment was achieved among patients undergone single-tooth implant treatment. This is in accordance with previous studies

evaluating satisfaction with aesthetics by patients treated with implant-supported single-tooth replacements (Ekfeldt et al. 1994; Chang et al. 1999a; Chang et al. 1999b; Gibbard & Zarb 2002). In a recent paper, it was reported that 39 of 40 patients were positive about the aesthetics of single implant crowns made by general dental practitioners (Vermeylen et al. 2003).

In general, no appreciable difference in the assessment of the implant treatment and the definitive outcome was found when comparing patients, who were treated according to the conventional protocol and those, who had the implant placed within 14 days following tooth extraction. Not surprisingly, patients in the delayed-immediate group experienced the time period between tooth extraction and insertion of the restoration significantly shorter than those in the delayed group. Nevertheless, the latter group did not manifest a greater discomfort in this period. It must be emphasized that these results may be expected because the patients actually were aware of which group they were part of.

Difficulties with primary flap closure because of unfavourable mucogingival conditions just after tooth extraction have been stated as one of the disadvantages of the immediate technique in previous reports (Schwartz-Arad & Chaushu 1997; Klokke-vold et al. 1999). The need for extension of the flap or the risk of implant exposure may lead to adverse soft tissue contours from an aesthetic and periodontal point of view. On the other hand, the immediate concept may result in preservation of the alveolar bone (Denissen & Kalk 1991; Wheeler et al. 2000) and thereby facilitate insertion of the implant in an optimal position, which may enhance the aesthetic result of the restoration. Asking the patients in this study about overall satisfaction with the crown after mounting and generally about its appearance, it was revealed that patients

Table 2. Check box results

Questions	Delayed-immediate	Delayed	All
Q3a A denture was made	14 of 20 (70%)	10 of 21 (48%)	24 of 41 (59%)
Q3b Use of a denture – before surgery	9 of 14, 8 only by day	9 of 10, 6 only by day	18 of 24, 14 only by day
Q7 Use of a denture – after implant surgery	9: no difference	7: no difference	16: no difference
Q11 Use of a denture – after abutment surgery	6: no difference, 3: worse	4: no difference, 1: worse	10: no difference, 4: worse
Q12b Unpleasantness – crown making	3: impression, 2: try-in	5: impression, 1: mounting	11 of 41: some kind of unpleasantness

in the delayed-immediate group were significantly more satisfied than those in the delayed group. Assessing adaptation to the restoration, shape, colour, chewing function, and ease of cleaning, no differences between the groups existed. This indicates that delayed-immediate placement of implants may lead to aesthetic results from the patients' viewpoint, which are comparable to, or even better than, the outcome when applying the conventional implant treatment protocol. It is likely, however, that the fact that the patients in the Im group were more satisfied with the crown than those in the De group may be due to a general higher satisfaction with the treatment because of the shorter treatment time. It is also noteworthy that differences between the two groups were small despite the statistical significance.

Experience of the surgical and prosthetic treatment procedures was also evaluated in the present study. The VAS scores for assessment of the implant surgery indicated that the experience of this operation as well as swelling were felt as a problem by the patients, whereas pain related to the surgery was not a problem. Comparing delayed-immediate and delayed placement of the implants, no significant differences between the patients' experience of unpleasantness, pain or swelling were found. The implant operation may be characterized as a more complicated and extensive surgical intervention compared with the abutment operation. As it may be expected, the patients found the implant operation to be significantly worse than the abutment connection surgery with respect to all three parameters evaluated. Three procedures in relation to fabrication of the crown were assessed, namely impression taking, try-in and mounting of the crown. Only approximately one-fourth of the respondents expressed that they had experienced unpleasantness in relation to the prosthetic procedures. In conclusion, the results showed that implant treatment procedures according to either the delayed-immediate or the conventional protocol were associated with only little discomfort.

In approximately 60% of the cases it was decided, in concert with the patient, to make a removable partial denture as a temporary solution in the edentulous period. It was striking that more patients in the delayed-immediate group (70%) preferred

to have a temporary replacement compared with the patients in the delayed group (48%) in view of the fact that the distribution of implant recipient sites in the two groups did not differ significantly. This indicates that the time aspect not solely determines the need for a replacement in the waiting period. However, it was found that only 64% of the patients in the Im group actually used their dentures, while the denture was used in 90% of the cases in the De group. It could also be concluded that most of the patients exclusively used their denture by day (89% in the Im group and 67% in the De group). None of the patients experienced that the denture function was influenced by insertion of the implant and in only few cases was the function impaired after the abutment operation.

Additional analyses were performed in order to find out whether gender or age may have an impact on the experience of implant treatment and its functional and aesthetic outcomes. In general, only minor differences between younger and older patients, as well as between men and women, were found concerning experience of the overall treatment, the surgical and prosthetic procedures related to implant treatment, the use of a removable partial denture, and satisfaction with the definitive implant restoration. However, it was revealed that women experienced a better chewing ability than men. Likewise, younger patients scored significantly higher than older patients on the VAS when evaluating this parameter. Conversely, patients older than 50 years became accustomed to their new crown significantly sooner than those younger than 50 years.

Bearing in mind that the responders were asked to complete the questionnaire at a follow-up visit as late as 16–18 months after mounting the prosthetic reconstruction, the results must be interpreted with caution. Assessment of the treatment procedures and experience of the edentulous period may be uncertain due to fail in memory. A risk of mistaking the two different operations, for instance, cannot be excluded. Recordings on function, aesthetics and ease of cleaning, however, may be more reliable.

In spite of these limitations, it can be concluded that the patients in the present study were highly satisfied with the outcome of implant treatment and experienced

the treatment to be without considerable unpleasantness irrespective of the treatment concept.

Résumé

Des investigations récentes se sont penchées sur la sensation subjective du patient au traitement implantaire. Le but de cette étude a été de comparer l'expérience des patients des processus chirurgicaux et prothétiques ainsi que leur satisfaction en ce qui concerne la mise en fonction et l'esthétique suivant des remplacements dentaires uniques sur des implants dentaires placés de manière précoce ou retardée. Quarante-six patients ont été traités avec un implant solitaire dans la région prémolaire ou antérieure. Vingt-trois implants ont été placés environ dix jours après l'avulsion dentaire (Im), tandis que 23 autres ont été placés environ trois mois après l'avulsion (De). Quarante-et-un patients ont répondu à un questionnaire concernant le traitement en utilisant l'échelle analogique visuelle (VAS) et ont rempli le questionnaire 16 à 18 mois après le placement de la restauration. Nonante pour cent des répondants plaçaient une valeur 88 ou supérieure dans le VAS de satisfaction vis-à-vis de la couronne. La satisfaction avec la restauration en général et son apparence était significativement plus importante dans le groupe Im que dans le groupe De (96 vs 93, $p < 0,02$). Le rapport concernant la chirurgie n'était pas significativement différent entre les deux groupes. Approximativement 25% des patients ont eu une expérience peu plaisante en relation avec les processus entourant la prothèse, et dans huit cas sur onze, c'est la prise d'empreinte qui en était la cause. Lors de l'évaluation de la satisfaction dans son ensemble, les scores VAS étaient significativement plus importants dans le groupe De (96 vs 90, $p < 0,02$). Les patients dans le groupe présent étaient très satisfaits avec le traitement et avaient un souvenir non déplaisant quel que soit le traitement suivi.

Zusammenfassung

Ziele: Jüngste Untersuchungen über Implantatverordnungen konzentrierten sich eher auf die subjektiven Aussagen des Patienten. Das Ziel dieser Studie war es, die Erfahrungen der Patienten bezüglich chirurgischen und prothetischen Eingriffen, sowie die Zufriedenheit mit Funktion und Ästhetik zu vergleichen, wenn man den Einzelzahnersatz mittels Sofortimplantation der verzögerten Implantation gegenüberstellt.

Material und Methode: Man versorgte 46 Patienten mit einem Einzelzahnimplantat in der Front- oder Prämolarenregion. 23 der Implantate setzte man durchschnittlich 10 Tage nach der Zahnextraktion (Im), 23 Implantate etwa drei Monate nach der Zahnextraktion (De). 16 bis 18 Monate nach der prothetischen Rekonstruktion füllten 41 der Patienten einen Fragekatalog (visuelle Analogskalen [VAS] und anzukreuzende Kästchen) zur Behandlung aus.

Resultate: 90% der Befragten beurteilten die Zufriedenheit mit der Krone auf der VAS mit 88 oder höher. Die Zufriedenheit mit der Rekonstruktion im

Allgemeinen und dem Erscheinungsbild war in der Im-Gruppe signifikant grösser als in der De-Gruppe (96 gegenüber 93; $p < 0.02$). Die Beurteilung der Implantatchirurgie zeigt keine signifikanten Unterschiede zwischen der verzögerten Sofortimplantation und der verzögerten Implantation. Etwa 25% aller Patienten erinnerte sich mit einem ungenuten Gefühl an die prothetische Rekonstruktion, und in 8 der 11 Fälle war die Abdrucknahme Ursache für die negative Erinnerung. Beurteilte man die Zufriedenheit mit der Gesamtbehandlung, so waren die VAS-Werte in der Gruppe mit der verzögerten Sofortimplantation signifikant höher als in der Gruppe mit der verzögerten Implantation (96 gegenüber 90; $p < 0.02$).

Zusammenfassung: Die Patienten dieser Studie waren in höchstem Masse zufrieden mit dem Ergebnis der Behandlung und erinnerten sich ohne Missfallen daran, signifikant unabhängig vom Behandlungskonzept.

Resumen

Objetivos: Las investigaciones recientes han sido enfocadas hacia la valoración subjetiva de los pacientes del tratamiento de implantes. La intención del presente estudio fue comparar la experiencia de los pacientes de los procedimientos quirúrgicos y

prostéticos, así como la satisfacción con la función y la estética tras sustituciones de diente unitario montado sobre implantes dentales inmediatos o diferidos.

Material y métodos: Se trataron cuarenta y seis pacientes con un implante de un solo diente en la región anterior o premolar. Se colocaron veintitrés implantes tras una media de 10 días tras la extracción dentaria (Im), mientras que se colocaron 23 implantes aproximadamente a los tres meses de la extracción (De). Cuarenta y un pacientes completaron un cuestionario respecto al tratamiento usando escalas visuales analógicas (VAS) y casillas tras 16-18 de la colocación de la restauración.

Resultados: El 90% de los encuestados valoró en 88 o mayor sobre el VAS respecto a la satisfacción con la corona. La satisfacción con la restauración en general y la apariencia fue significativamente mayor en el grupo Im que en el grupo De (96 vs. 93; $p < 0.02$). La valoración de la cirugía de implante no fue significativamente diferente entre el grupo diferido-inmediato y el grupo diferido. Aproximadamente el 25% de los pacientes experimentaron molestias en relación con los procedimientos prostéticos, y en 8 de 11 casos, la toma de impresiones fue la causa. Cuando se evaluó la satisfacción sobre la totalidad del tratamiento implantario, los valores VAS para el grupo diferido-inmediato fue significativamente mas alto que para el grupo diferido (96 vs. 90; $P < 0.02$).

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要旨

目的：最近の研究は、インプラント治療における患者の主観的評価に焦点をあてている。本研究は、単独歯のインプラント修復について、即時埋入インプラントと抜歯後時期を遅らせて埋入したインプラントの間で、患者の外科治療と補綴治療の経験と、機能的及び審美的な結果に対する満足度を比較した。

材料と方法：患者46名において、前歯または小臼歯部位でインプラントによる単独歯の修復治療を行った。インプラント23本は抜歯後平均10日後に埋入し（Im群）、他方残りのインプラント23本は抜歯後約3ヶ月後に埋入した（De群）。41名の患者が修復治療完了後16-18ヶ月後に視覚尺度評価（VAS）とチェック・ボックスを用いて、治療に関する質問表に回答した。

結果：クラウンの満足度に関して回答者の90%は、VASのスコアで88以上と評価した。治療全般と外観に関する満足度はIm群の方がDe群より有意に高かった（96対93； $p < 0.02$ ）。インプラント手術の評価には2群間に有意差はなかった。患者の約25%は補綴治療に関して不快感を経験したが、11症例中8例において印象採得が原因であった。インプラント治療全体の満足度を評価したところ、早期埋入（delayed-immediate）群のVASスコアは、延期（delayed）群より有意に高かった（96対90； $p < 0.02$ ）。

結論：本研究の患者達は、治療結果に非常に満足しており、治療の方針にかかわらず、重大な不快感は体験しなかったと評価していた。