

Ausgabe: Implantologie Jahrbuch 2016, S. 36-40

Thema: Guided Implant Surgery – eine Literaturrecherche

Autoren: Dr. med. dent. Umut Baysal, Dr. Arzu Tuna, Dr. Rainer Valentin

Literatur

1. Nickenig, H. J. and Spiekermann, H. (2006): "CT/DVT-basierte implantatprothetische Führungsschablonen vs. traditionelle Orientierungsschablone. CT-based surgical templates vs. traditional surgical guides." *Zeitschrift für zahnärztliche Implantologie* 22(4): 272-287.
2. Sarment, D. P., Sukovic, P. and Clinthorne, N. (2003): "Accuracy of implant placement with a stereolithographic surgical guide." *Int J Oral Maxillofac Implants* 18(4): 571-577.
3. Ganz, S. D. (2005): "Conventional CT and cone beam CT for improved dental diagnostics and implant planning." *Dent Implantol Update* 16(12): 89-95.
4. Schneider, D., Marquardt, P., Zwahlen, M. and Jung, R. E. (2009): "A systematic review on the accuracy and the clinical outcome of computer-guided template-based implant dentistry." *Clin Oral Implants Res* 20 Suppl 4: 73-86.
5. Nickenig, H. J., Wichmann, M., Hamel, J., Schlegel, K. A. and Eitner, S. (2010): "Evaluation of the difference in accuracy between implant placement by virtual planning data and surgical guide templates versus the conventional free-hand method - a combined in vivo – in vitro technique using cone-beam CT (Part II)." *J Craniomaxillofac Surg* 38(7): 488-493.
6. Nemcovsky, C. E., Moses, O. and Artzi, Z. (2000): "Interproximal Papillae Reconstruction in Maxillary Implants." *Journal of Periodontology* 71(2): 308-314.
7. Andersen, E., Haanæs, H. R. and Knutsen, B. M. (2002): "Immediate loading of single-tooth ITI implants in the anterior maxilla: a prospective 5-year pilot study." *Clinical Oral Implants Research* 13(3): 281-287.
8. Besimo, C., Lambrecht, J. T. and Nidecker, A. (1995): "Dental implant treatment planning with reformatted computed tomography." *Dentomaxillofac Radiol* 24(4): 264-267.
9. BouSerhal, C., Jacobs, R., Quirynen, M. and van Steenberghe, D. (2002): "Imaging technique selection for the preoperative planning of oral implants: a review of the literature." *Clin Implant Dent Relat Res* 4(3): 156-172.
10. Lorenzoni, M., Pertl, C., Zhang, K., Wimmer, G. and Wegscheider, W. A. (2003): "Immediate loading of single-tooth implants in the anterior maxilla. Preliminary results after one year." *Clin Oral Implants Res* 14(2): 180-187.
11. Fortin, T., Coudert, J. L., Champlébourg, G., Sautot, P. and Lavalée, S. (1995): "Computer-assisted dental implant surgery using computed tomography." *J Image Guid Surg* 1(1): 53-58.
12. Takeshita, F. and Suetsugu, T. (1996): "Accurate presurgical determination for implant placement by using computerized tomography scan." *J Prosthet Dent* 76(6): 590-591.

13. Payer, M., Kirmeier, R., Jakse, N., Pertl, C., Wegscheider, W. and Lorenzoni, M. (2008): "Surgical factors influencing mesiodistal implant angulation." *Clinical Oral Implants Research* 19(3): 265-270.
14. Lim, T. J., Csillag, A., Irinakis, T., Nokiani, A. and Wiebe, C. B. (2004): "Intentional angulation of an implant to avoid a pneumatized maxillary sinus: a case report." *J Can Dent Assoc* 70(3): 164-168.
15. Holst, S., Blatz, M. B. and Eitner, S. (2007): "Precision for computer-guided implant placement: using 3D planning software and fixed intraoral reference points." *J Oral Maxillofac Surg* 65(3): 393-399.
16. Hassfeld, Brief, Stein, Ziegler, Redlich, Raczkowsky, Krempien and Mühling (2000): "Navigationsverfahren in der Implantologie - Stand der Technik und Perspektiven." *Implantologie* 8: 373-378.
17. Szabo, G., Keck, B. and d'Hoedt, B. (1991): "Präimplantologische Diagnostik mit individuellen Röntgenschablonen im Orthopantomogramm." *Z Zahnärztl Implantologie* 7: 33-36.
18. Sarment, D. P., Al-Shammari, K. and Kazor, C. E. (2003): "Stereolithographic surgical templates for placement of dental implants in complex cases." *Int J Periodontics Restorative Dent* 23(3): 287-295.
19. Engelman, M. J., Sorensen, J. A. and Moy, P. (1988): "Optimum placement of osseointegrated implants." *J prosthet dent* 59: 467-473.
20. Higginbottom, F. L. and Wilson, T. G. (1996): "Three-dimensional templates for placement of root-form dental implants: a technical note." *Int J Oral Maxillofac Implants* 11: 787-793.
21. Kennedy, B. D., Collins, T. A. and Kline, P. C. (1998): "Simplified guide for precise implant placement: a technical note." *Int J Oral Maxillofac Implants* 13: 684-688.
22. Schermeier, O., Hildebrandt, D., Lueth, T. C., Szymanski, D. and Bier, J. (2001): Accuracy of an image guided system for oral implantology. CARS 2001. Computer assisted radiology and surgery : Proceedings of the 15th International Congress and Exhibition, Berlin, June 27-30, 2001. International Congress and Exhibition, Berlin.
23. Jabero, M. and Sarment, D. P. (2006): "Advanced surgical guidance technology: a review." *Implant Dent* 15(2): 135-142.
24. Fortin, T., Champleboux, G., Bianchi, S., Buatois, H. and Coudert, J. L. (2002): "Precision of transfer of preoperative planning for oral implants based on cone-beam CT-scan images through a robotic drilling machine." *Clin Oral Implants Res* 13(6): 651-656.
25. Ewers, R., Schicho, K., Undt, G., Wanschitz, F., Truppe, M., Seemann, R. and Wagner, A. (2005): "Basic research and 12 years of clinical experience in computer-assisted navigation technology: a review." *Int J Oral Maxillofac Surg* 34(1): 1-8.
26. Tyndall, D. A. and Brooks, S. L. (2000): "Selection criteria for dental implant site imaging: a position paper of the American Academy of Oral and Maxillofacial radiology." *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 89(5): 630-637.

27. Europa, B. d. i. t. Z. i. (2009). Konsensuspapier Leitfaden Dreidimensionale Bildgebung in der Implantologie. European Consensus Conference (EuCC). Köln, Bundesverband der implantologisch tätigen Zahnärzte in Europa.
28. Mozzo, P., Procacci, C., Tacconi, A., Martini, P. T. and Andreis, I. A. (1998): "A new volumetric CT machine for dental imaging based on the cone-beam technique: preliminary results." *Eur Radiol* 8(9): 1558-1564.
29. Guerrero, M. E., Jacobs, R., Loubele, M., Schutyser, F., Suetens, P. and van Steenberghe, D. (2006): "State-of-the-art on cone beam CT imaging for preoperative planning of implant placement." *Clin Oral Investig* 10: 1-7.
30. Ludlow, J. B. and Ivanovic, M. (2008): "Comparative dosimetry of dental CBCT devices and 64-slice CT for oral and maxillofacial radiology." *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 106(1): 106-114.
31. Mischkowski, R. A., Pulsfort, R., Ritter, L., Neugebauer, J., Brochhagen, H. G., Keeve, E. and Zoller, J. E. (2007): "Geometric accuracy of a newly developed cone-beam device for maxillofacial imaging." *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 104(4): 551-559.
32. Mischkowski, R. A., Ritter, L., Neugebauer, J., Dreiseidler, T., Keeve, E. and Zoller, J. E. (2007): "Diagnostic quality of panoramic views obtained by a newly developed digital volume tomography device for maxillofacial imaging." *Quintessence Int* 38(9): 763-772.
33. Kobayashi, K., Shimoda, S., Nakagawa, Y. and Yamamoto, A. (2004): "Accuracy in measurement of distance using limited cone-beam computerized tomography." *Int J Oral Maxillofac Implants* 19(2): 228-231.
34. Suomalainen, A., Vehmas, T., Kortensniemi, M., Robinson, S. and Peltola, J. (2008): "Accuracy of linear measurements using dental cone beam and conventional multislice computed tomography." *Dentomaxillofac Radiol* 37: 10-17.
35. Brief, J., Edinger, D., Hassfeld, S. and Eggers, G. (2005): "Accuracy of image-guided implantology." *Clinical Oral Implants Research* 16: 495-501.
36. Kramer, F. J., Baethge, C., Swennen, G. and Rosahl, S. (2005): "Navigated vs. conventional implant insertion for maxillary single tooth replacement." *Clin Oral Implants Res* 16(1): 60-68.
37. van Steenberghe, D., Glauser, R., Blomback, U., Andersson, M., Schutyser, F., Pettersson, A. and Wendelhag, I. (2005): "A computed tomographic scan-derived customized surgical template and fixed prosthesis for flapless surgery and immediate loading of implants in fully edentulous maxillae: a prospective multicenter study." *Clin Implant Dent Relat Res* 7 Suppl 1: S111-120.
38. Sanna, A. M., Molly, L. and van Steenberghe, D. (2007): "Immediately loaded CAD-CAM manufactured fixed complete dentures using flapless implant placement procedures: a cohort study of consecutive patients." *J Prosthet Dent* 97(6): 331-339.
39. Komiyama, A., Klinge, B. R. and Hultin, M. (2008): "Treatment outcome of immediately loaded implants installed in edentulous jaws following computer-assisted virtual treatment planning and flapless surgery." *Clin Oral Implants Res* 19(7): 677-685.

40. Erickson, D. M., Chance, D., Schmitt, S. and Mathis, J. (1999): "An opinion survey of reported benefits from the use of stereolithographic models." *J Oral Maxillofac Surg* 57(9): 1040-1043.
41. Wulf, J., Vitt, K. D., Erben, C. M., Bill, J. S. and Busch, L. C. (2003): "Medical biomodelling in surgical applications: results of a multicentric European validation of 466 cases." *Stud Health Technol Inform* 94: 404-406.
42. Ganz, S. D. (2008): "Computer-aided design/computer-aided manufacturing applications using CT and cone beam CT scanning technology." *Dent Clin North Am* 52(4): 777-808.
43. Greenstein, G., J. Cavallaro, G. Romanos and D. Tarnow (2008). "Clinical recommendations for avoiding and managing surgical complications associated with implant dentistry: a review." *J Periodontol* 79(8): 1317-1329.
44. Cannizzaro, G., Leone, M., Consolo, U., Ferri, V. and Esposito, M. (2008): "Immediate functional loading of implants placed with flapless surgery versus conventional implants in partially edentulous patients: a 3-year randomized controlled clinical trial." *Int J Oral Maxillofac Implants* 23(5): 867-875.
45. Hahn, J. (2000): "Single-stage, immediate loading, and flapless surgery." *J Oral Implantol* 26: 193-198.
46. Kan, J. Y., Rungcharassaeng, K., Ojano, M. and Goodacre, C. J. (2000): "Flapless anterior implant surgery: a surgical and prosthodontic rationale." *Pract Periodontics Aesthet Dent* 12: 467-474.
47. Campelo, L. D. and Camara, J. R. D. (2002): "Flapless implant surgery: a 10-year clinical retrospective analysis." *The International journal of oral & maxillofacial implants* 17: 271-276.
48. Widmann, G. and Bale, R. J. (2006): "Accuracy in computer-aided implant surgery--a review." *Int J Oral Maxillofac Implants* 21: 305-313.
49. van Steenberghe, D., Naert, I., Andersson, M., Brajnovic, I., Van Cleynenbreugel, J. and Suetens, P. (2002): "A custom template and definitive prosthesis allowing immediate implant loading in the maxilla: a clinical report." *Int J Oral Maxillofac Implants* 17(5): 663-670.
50. Almog, D. M., Torrado, E. and Meitner, S. W. (2001): "Fabrication of imaging and surgical guides for dental implants." *Journal of prosthetic dentistry* 85: 504-508.
51. Di Giacomo, G. A. P., Cury, P. R., de Araujo, N. S., Sendyk, W. R. and Sendyk, C. L. (2005): "Clinical application of stereolithographic surgical guides for implant placement: preliminary results." *J Periodontol* 76: 503-507.
52. Ozan, O., Turkyilmaz, I., Ersoy, A. E., McGlumphy, E. A. and Rosenstiel, S. F. (2009): "Clinical accuracy of 3 different types of computed tomography-derived stereolithographic surgical guides in implant placement." *J Oral Maxillofac Surg* 67: 394-401.
53. Valente, F., Schirotti, G. and Sbrenna, A. (2009): "Accuracy of computer-aided oral implant surgery: a clinical and radiographic study." *The International journal of oral & maxillofacial implants* 24(2).

54. Behneke, A., Burwinkel, M., Knierim, K. and Behneke, N. (2011): Accuracy assessment of cone beam computed tomography-derived laboratory-based surgical templates on partially edentulous patients. *Clin Oral Implants Res*, Blackwell Publishing Ltd. 1600-0501.
55. Chan, P. W., Chik, F. F., Pow, E. H. and Chow, T. W. (2011): "Stereoscopic Technique for Conversion of Radiographic Guide into Implant Surgical Guide." *Clin Implant Dent Relat Res*.
56. Neugebauer, J. (2013): *Digitale Volumetomografie in der Zahn-, Mund- und Kieferheilkunde. Grundlagen, Diagnostik und Behandlungsplanung, Quintessenz*.
57. Baysal, U. (2012): Analyse der metrischen Abweichung von dreidimensional geplanten Implantatpositionen.
58. Xiaojun, C., Yanping, L., Yiqun, W. and Chengtao, W. (2007): "Computer-aided oral implantology: methods and applications." *J Med Eng Technol* 31: 459-467.
59. Kalt, G. and Gehrke, P. (2008): "Transfer precision of three-dimensional implant planning with CT assisted offline navigation." *Int J Comput Dent* 11(3-4): 213-225.
60. Widmann, G., Widmann, R., Widmann, E., Jaschke, W. and Bale, R. J. (2005): "In vitro accuracy of a novel registration and targeting technique for image-guided template production." *Clin Oral Implants Res* 16: 502-508.
61. Van Assche, N., van Steenberghe, D., Quirynen, M. & Jacobs, R. (2010): "Accuracy assessment of computerassisted flapless implant placement in partial edentulism." *Journal of Clinical Periodontology* 37: 398-403.
62. Gerlach, N. L., Meijer, G. J., Maal, T. J., Mulder, J., Rangel, F. A., Borstlap, W. A. and Berge, S. J. (2010): "Reproducibility of 3 different tracing methods based on cone beam computed tomography in determining the anatomical position of the mandibular canal." *J Oral Maxillofac Surg* 68(4): 811-817.
63. Neugebauer, J., Stachulla, G., Ritter, L., Dreiseidler, T., Mischkowski, R. A., Keeve, E. and Zoller, J. E. (2010): "Computer-aided manufacturing technologies for guided implant placement." *Expert Rev Med Devices* 7(1): 113-129.
64. Viegas, V. N., Dutra, V., Pagnoncelli, R. M. and de Oliveira, M. G. (2010): "Transference of virtual planning and planning over biomedical prototypes for dental implant placement using guided surgery." *Clin Oral Implants Res* 21(3): 290-295.
65. Drago, C., Del Castillo, R. and Peterson, T. (2011): "Immediate Occlusal Loading in Edentulous Jaws, CT-Guided Surgery and Fixed Provisional Prosthesis: A Maxillary Arch Clinical Report." *J Prosthodont* 20: 209-217.
66. Hanold, L., Vinson, B.E. & Rubino, A. (1998): "Evaluating and improving your medication use system." DeMichele Cousins, D., ed. *Medication* 2nd edition, Ch. 5. 101. Illinois: Joint Commission Resources.