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Mandibular reconstructions using 3D technologies

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Currently, 3D technology has indeed a significant impact on mandibular reconstructions, especially after cancer surgeries like hemisection or mandibulectomy. In comparison with traditional reconstructive surgery, 3D techniques enable to restore function of stomatognathic system and rebuild face appearance in considerably more precise way because of individual adjustment of lost parts of patient's mandible. Mandibular reconstruction is an extremely complex procedure due to complicated shape of the bone and despite the fact that the movements of mandible are correlated in both temporomandibular joints. The most popular 3D techniques of mandibular restoration are: reconstruction with titanium implants bent to mandibular margins and angle, hydroxyapatite-coated titanium implants, CAD/CAM polyamide implants and autograft from fibula. 3D computed tomography mandible models give an important opportunity of pre-operative planning the extensiveness of surgery and kinds of incisions as well. Thanks to CAD/CAM system, there is a possibility of additional processing of mandible models that result in very appropriate face aesthetics.

Biography

Kamila Kołodziejczyk is a PhD Student at the Department of Experimental Surgery and Biomaterials Research at the Faculty of Medicine and Dentistry of Wrocław Medical University, Wrocław, Poland. She holds a Masters Degree in Dentistry of Wrocław Medical University, Wrocław, Poland. She is a member of the Student Scientific Society of Experimental Dentistry and Biomaterials Research. Her research interests are odontogenic inflammatory processes, the regeneration of bone tissue and bioresorbable materials in dental surgery. She has published 5 research papers.

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