



## Minimally invasive surgery in implant dentistry

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Oral and maxillofacial surgeons have been performing surgery and related studies in the implant dentistry field for a long time and have made significant contributions to the development of current implant therapy. In the past, implants were installed after improving patient bone readiness through invasive surgical techniques in areas with bone deficiency or poor bone quality. Representative invasive surgeries include sinus bone grafts using autogenous bone grafts, vertical and/or horizontal ridge augmentation using autogenous bone grafts, inferior alveolar nerve repositioning, alveolar bone distraction osteogenesis, and zygoma implants. However, invasive surgery causes many complications, decreases the patient's satisfaction with treatment, prolongs the treatment period, and has a high treatment cost.

In the medical field, as well as in the dental field, clinicians are moving toward introducing minimal invasive surgery as much as possible and the development of related diagnostic and surgical equipment, surgical instruments, and techniques continues. Typical minimal invasive surgery introduced in the dental field includes temporomandibular joint arthroscopic diagnosis and treatment, endoscopic surgery through minimal incision, surgery through an intraoral approach, cone-beam computed tomography-based computer guided implant surgery, flapless implant placement, tissue engineered bone grafts, 3D printing technology and individually customized bone graft material, short implant placement, implant-assisted removable partial dentures, and implant-supported overden-

tures.

The ideal treatment plan for implant dentistry is not necessarily good for the patient. Surgical treatment plans to improve this in the case of insufficient bone and poor bone quality must be established first. However, it is necessary to decide whether to apply surgery after taking into consideration patient age, systemic disease comorbidities, oral hygiene management ability, oral parafunction, patient economic capacity, and cooperation with treatment. Surgery should be selected if the patient agrees after the clinician sufficiently explains the necessity for surgery, and the advantages and disadvantages of surgical treatment. If invasive surgery or implant treatment is not indicated, consideration should be given to choosing conventional prosthetic treatments such as fixed prosthesis, removable denture, or complete denture.

Oral and maxillofacial surgeons should first choose a treatment that can improve patient satisfaction and quality of life with minimal complications. Surgeons who overly prefer invasive surgical treatment will have to re-study the latest implant and surgical treatment evidence and try to keep up with the latest trends.

### Conflict of Interest

No potential conflict of interest relevant to this article was reported.

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