

Curriculum Vitae



Name: Zhigang Cai

Birth Day: 4th January, 1967

Institution: Department of Oral and Maxillofacial Surgery, Peking University, School and Hospital of Stomatology.

Interesting fields: Head neck and maxillofacial oncology, head & neck reconstruction surgery, facial nerve disease and salivary gland disease.

National Social Academic Position: Assistant dean of Peking University, School and Hospital of Stomatology. Vice director, Professor & Consultant of OMS department, and vice director of salivary gland disease center. Vice chief editor of ninth "Journal of Chinese Microsurgery"; Vice director of head & neck reconstructive surgery division of Chinese Association of Rehabilitation Medicine; Specialist of Chinese National Medical Examination Council, and head of Oral & Maxillofacial Surgery division; Standing committee member of Chinese Microsurgery Association; Committee member of Beijing Plastic Surgery Association.

International Social Academic Position: Chairman of Chinese AOCMF board; Vice chairman of 3rd Asia Pacific Federation Society Reconstruction and Microsurgery (APFSRM) and vice chairman of Chinese Reconstruction and Microsurgery Society.

Education and Occupations:

1985.8-1991.7 Beijing Medical University with a Medical Bachelor Degree;

1991.8-1994.7 Beijing Medical University with a Medical Master Degree;

1996.1-1998.2 Luebeck Medical University with a Dental Medical Doctor Degree.

1996.2-1998.2 OMS department of Luebeck Medical University as a guest doctor;

1994.7-Now OMS department of Peking University, School & Hospital of Stomatology.

Academic achievements: Published over 120 scientific papers in national and international journal; published "Peripheral Facial Palsy" in Chinese as a co-author.

Digital surgery techniques used in craniomaxillofacial reconstruction

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Abstract

The craniofacial hard tissue defect caused by head neck ablative tumor surgery, osteomyelitis or severe trauma would physiologically and psychologically affect patients' life quality. However, the complexity of this regional anatomy makes it a great challenge for plastic surgeons to reconstruct the facial contour and rehabilitate the occlusion function. Nowadays, functional and aesthetic rehabilitation of the patients have become a basic goal for clinicians.

Over the past 30 years, the digital surgery techniques have been widely spread all over the world, more and more attention has been paid to the individual and functional craniofacial bone reconstruction. With modern digital surgery techniques, including computer aided design and computer aided manufacture (CAD/CAM), rapid prototyping (RP), reverse engineering (RE) and surgical navigation, the individual bone model can be fabricated based on computed tomography (CT) data, which is valuable for the shaping procedure of the bone graft. Also, the software programs can enable the clinician to operate virtually before the surgery, progressing from simple 2-dimensional images to sophisticated 3-dimension surgical simulation covering intraoperative procedures. The surgical simulation with 3-dimension stereolithographic model helps to establish confidence for the operator, improve the young clinicians' surgical skills, and make the operation visualized for patients.

The surgical techniques are usually combined to achieve a better outcome for patients, it can dramatically improve the safety and precision of the plastic surgery, achieving a designed purpose of both facial contour recovery and occlusal rehabilitation. With the rapid development of computer techniques, new digital surgical techniques are seen to be created, so it's believed that the individual and functional craniofacial bone reconstruction is to be achieved precisely according to the pre-operation planning in the future.