令和元年度
九州歯科学会主催講演会

Digital and imaging innovations in oral and maxillofacial surgery

参加無料

【講師】
Department of Oral and
Maxillofacial Surgery,
Medical Center,
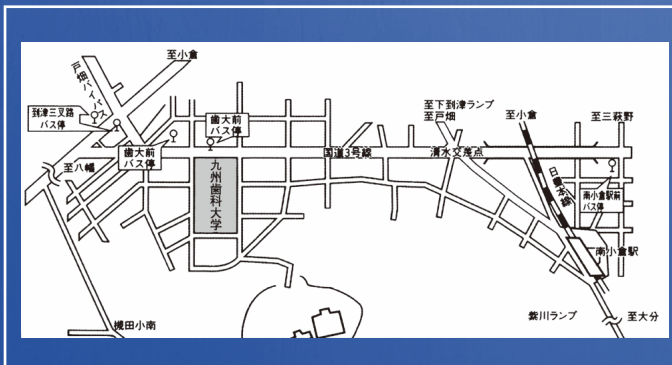University of Freiburg,Germany

Professor and Chairman
Rainer Schmelzeisen

【座長】
九州歯科大学　顎顔面外科学分野
教授　冨永　和宏

●歯科医師、医師、コデンタル、コメディカル、大学院生その他臨床研修医、
　学生の参加も歓迎致します。
●当学会員以外の参加も可能です。参加費無料、事前申込不要です。
●日本歯科医師会生涯研修対象講演です。会員はカードをお持ちください。

2019年10月28日(月)
16:30～17:30

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Abstract
Lecture at Kyushu Dental Society

Digital and imaging innovations in oral and maxillofacial surgery

Origins of the specialty of oral and maxillofacial surgery worldwide have developed for more than hundred years especially by the influence of severe head injuries in the First World War. Combined bone and soft tissue injuries of the face necessitated new reconstruction techniques and technologies including osteosynthesis and tissue transfer.

Major innovations in dental rehabilitation were initiated by the scientific establishment of dental implant surgery. Prosthetically driven backward planning procedures for the first time aimed at a treatment goal as a basis for the necessary surgical procedures to reach that goal. Today image fusion techniques allow for a precise predictability of most surgical procedures. Face scan techniques especially in 4D including soft tissue mobility, can be fused with bone and intraoral scan data in order to determine the perfect implant position with regard to bone and soft tissue.

Today many techniques can be applied minimally invasive using endoscopic procedures, prebent plates determine the final results of bone positioning.

Also major head and neck reconstructions nowadays are based on planning techniques using pre- and intraoperative data fusion. In orthognathic surgery soft tissue simulations allow very predictable results, additional intraoperative imaging techniques in trauma and orthognathic surgery as well as in tumor surgery provide an intraoperative quality control for the benefit of the patient. However, the fusion techniques are user dependent and may offer new mistakes and errors.

Artefacts may be responsible for difficulties in determinating regions of interest. Depending on the definitions of regions of interests deviations between possible implant angulations can reach up to 3.5 degrees.
In major reconstructions mirroring techniques are inferior to standard data that are calculated from large data clouds and may necessitate the application of artificial intelligence in the future.
Finally surgical experience and common sense have to be wisely applied as all digital planning and intraoperative techniques should be used with critical curiosity in order to avoid fake surgery procedures.