
A histological section of bone tissue, stained with hematoxylin and eosin (H&E). The image shows a cross-section of a bone with various cellular structures, including osteons and trabeculae. The staining highlights the nuclei in purple and the cytoplasm/extracellular matrix in pink.

ISSN 1523-0899

CLINICAL IMPLANT DENTISTRY

and Related Research

EDITORS: William Becker and Lars Sennerby

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An up to 17-year follow-up retrospective analysis of a minimally invasive, flapless approach - 18945 implants in 7783 patients

Journal:	<i>Clinical Implant Dentistry and Related Research</i>
Manuscript ID	CID-17-077.R3
Manuscript Type:	Original Article
Date Submitted by the Author:	JESCH, PHILIP
Complete List of Authors:	Jesch, Philip; Dental Clinic Wienerberg City Jesch, Wolfgang; Dental Clinic Wienerberg City BRUCKMOSER, Emanuel; Landeskrankenhaus Innsbruck Universitätskliniken, Craniomaxillofacial and Oral Surgery Krebs, Mischa; School of Dentistry (Carolinum), Johann Wolfgang Goethe-University, Department of Oral Surgery and Implantology Kladek, Tibor; Dental Clinic Wienerberg City Seemann, Rudolf; Medical University of Vienna, Department of Oral and Maxillofacial Surgery
Keywords:	clinical study, flapless implant surgery, implant survival, long-term survival, retrospective, survival rate, Long term study
Abstract:	<p>Background This study investigates gender, age, jaw, implant position, loading protocol (immediate vs. delayed), smoking, and type of surgery (punch versus flap) as influential factors of implant survival in a large patient collective.</p> <p>Purpose To evaluate the survival rates of implants in patients using a mucoperiosteal punch for flapless implantation in the majority of cases in order to evaluate its medical efficacy and safety.</p> <p>Materials and Methods Between 1994 and 2015 all patients with complete data treated at the Wienerberg Dental Clinic, Vienna, Austria, were included and statistically analyzed in Cox proportional hazard (PH) models. Since patients with multiple implants were included, a clustering term was added to the Cox PH model to respect pooled failures in patients.</p> <p>Results Of the initial 24282 ANKYLOS™/Dentsply implants placed in 8137 patients a total of 7783 patients with 18945 implants were finally included. The mean follow-up was 2.8 ± 3.2 up to 17.9 years. Cumulative survival rates (CSRs) after one, three, five, and ten years were 98.5%, 97.7%, 96.7%, and 93.0% respectively. Of these, 17517 (92.5%) implants were placed</p>

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minimally invasive via a flapless approach by use of the ATP-Punch® with comparable survival rates as observed for flap surgery . The Cox proportional hazard models proved smoking (hazard ratio/HR = 2.2) and implant position as significant factors of implant survival. In the maxilla canines and third molars were identified as low risk sites in comparison to the most frequently implanted first premolar site. In the mandible the central incisor and second premolar were identified as high-risk sites, the canine as low risk site in comparison to the most frequently placed first molar site.

Conclusion

The analyzed data concludes the safety and medical efficacy of the ATP-Punch®. The CSRs using this flapless technique are comparable to the classic surgical flap approach.