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

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Complete List of Authors:	Jesch, Philip; Dental Clinic Wienerberg City Jesch, Wolfgang; Dental Clinic Wienerberg City BRUCKMOSER, Emanuel; Landeskrankenhaus Innsbruck Universitatskliniken, 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
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Abstract:	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. 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. 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. 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 minimally invasive via a flapless approach by use of the ATP-Punch® with

	statistically equivalent survival rates. The Cox proportional hazard models proved smoking 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 similar to the classic surgical flap approach.