



SMART DENTAL UPDATES

Dear Doctor,

Greetings from Micro Labs Limited. We are happy to bring you “SMART DENTAL UPDATES” which contains latest and interesting news in the field of Dentistry.

This issue contains

- Fourteen-year evaluation of posterior zirconia-based three-unit fixed dental prostheses
- Comparison of postoperative complications and facial nerve recovery rates after conventional and partial superficial parotidectomy of benign parotid tumours: a prospective study
- Oral Metastasis of Colorectal Cancer

Should you require any specific article or medical information, please feel free to contact us at medicalsolutions@microlabs.in

Looking forward to your valuable feedback

Best Regards,
Medical Team, Micro Labs Limited

Fourteen-year evaluation of posterior zirconia-based three-unit fixed dental prostheses

Zirconia (ZrO₂) is a polycrystalline high-strength ceramic and is considered a suitable material for single crowns (SCs) and fixed dental prostheses (FDPs), since it tolerates higher occlusal loads than conventional ceramics and satisfies the high esthetic demands of patients. The purpose of the present prospective trial was to evaluate the clinical performance of posterior 3-unit zirconia-based fixed dental prostheses (FDPs) after 14 years of clinical function.

The results of this prospective clinical study confirmed the effectiveness of zirconia as a clinical option to fabricate short-span posterior FDPs.

Thirty-seven patients needing to replace either premolars or molars were involved and 48 FDPs were fabricated (Procera Zirconia, Nobel Biocare AB). Frameworks with a 9 mm² cross section of the connectors and 0.6 mm minimum thickness of the retainers were made by means of Procera Forte CAD-CAM System (Nobel Biocare AB). The patients were recalled after 6 and 12 months and then yearly up to a total follow-up of 14 years. Two independent survival curves for patients wearing 1 or 2 FDPs were calculated by means of Kaplan-Meier analysis and a log-rank test was performed in order to compare these curves. The United States Public Health Service criteria were used to examine technical and esthetic outcomes. The biological examination was performed evaluating plaque control, pocket depth, attachment level, bleeding on probing at both abutments and contralateral teeth and evaluated by means of the Wilcoxon test ($p < 0.05$) between the baseline and the 14-year follow-up.

Descriptive statistics resulted in 91 % and 99 % cumulative survival rates for patients wearing 1 and 2 FDPs, respectively. There were no significant differences in periodontal parameters between control and test teeth. Both function and esthetic results were successful for FDPs over a 14-year follow-up period. The results of this prospective clinical study confirmed the effectiveness of zirconia as a clinical option to fabricate short-span posterior FDPs. Within the limitations of

the present prospective clinical study, zirconia-based three-unit fixed dental prostheses perform satisfactorily on long term, in posterior areas and in patients with standard biomechanical conditions.



Supragingival tooth preparations for zirconia FDP

Evaluation of a zirconia FDP replacing a mandibular first premolar



The study establishes that chipping of the veneering ceramics was the most frequent complication recorded for bilayered posterior zirconia FDPs; - in absence of parafunctional occlusal loads, 3-unit zirconia FDPs exhibited a predictable serviceability; - 3-unit zirconia FDPs showed very good marginal integrity and mechanical resistance to fracture; - the optimal biocompatibility of zirconia was proven by the excellent response of soft tissues; - patients' satisfaction regarding both functional and esthetic outcomes was fully satisfactory in the long-term. Further randomized controlled trials with more extended zirconia spans up to full-arch restorations and longer observational period would be advisable to assess the long-term serviceability and predictability of zirconia FDPs.

Source: Zarone F et al. J Dentistry 2020. doi: <https://doi.org/10.1016/j.jdent.2020.103419>

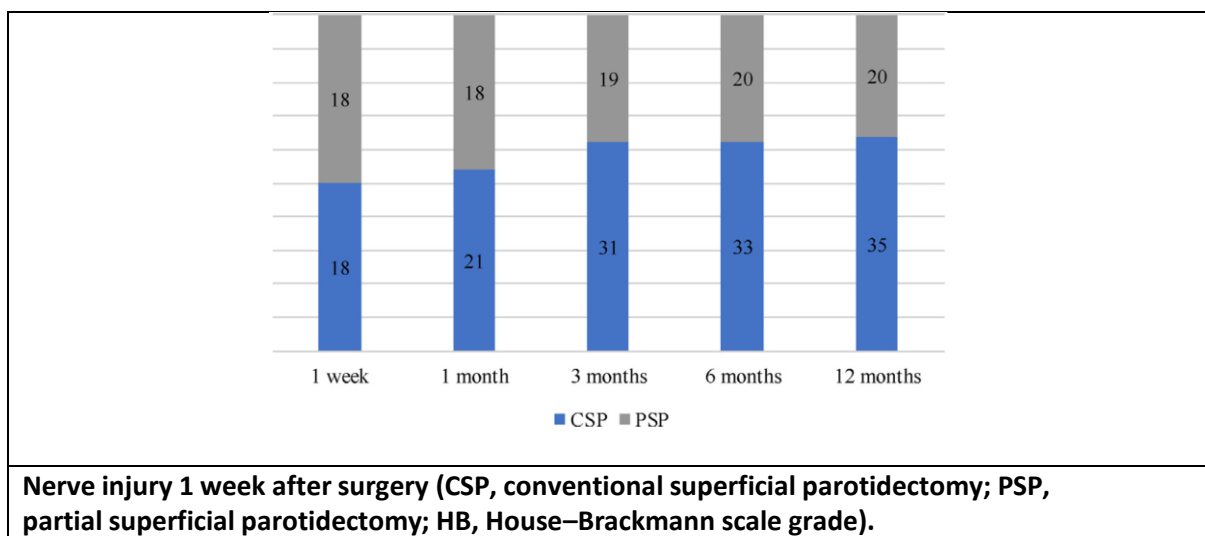
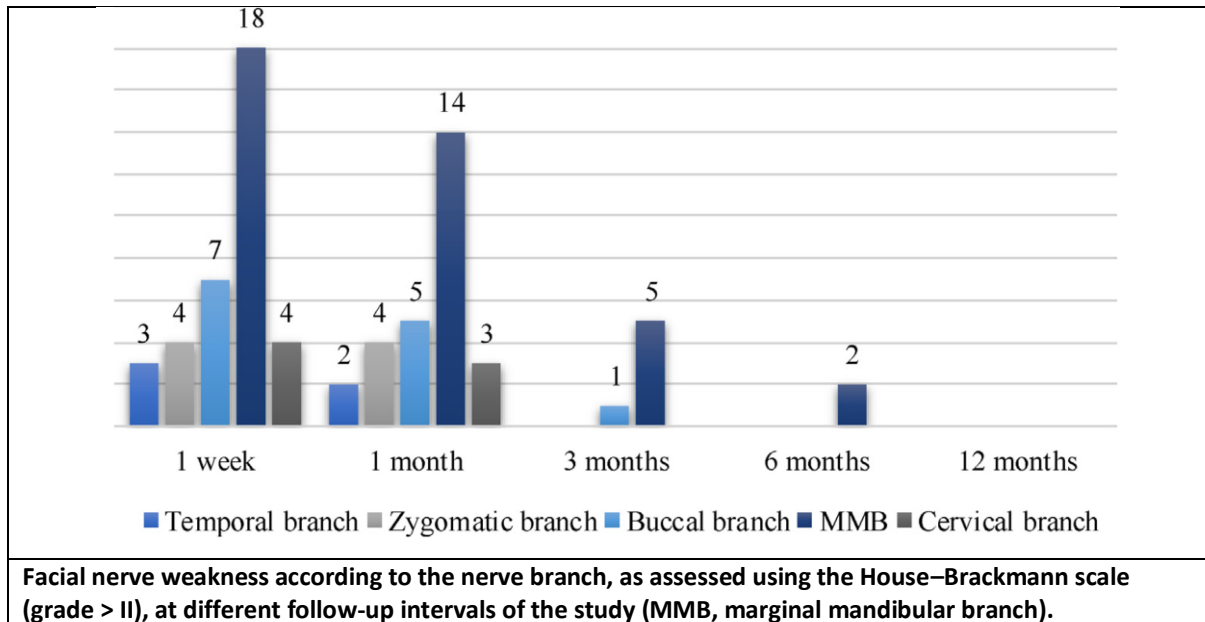
Comparison of postoperative complications and facial nerve recovery rates after conventional and partial superficial parotidectomy of benign parotid tumours: a prospective study

The parotid gland is the largest salivary gland and is responsible for producing about 50% of all saliva in the mouth. Salivary gland tumours represent less than 3% of all neoplasms in the head and neck region, and about 80% of these tumours are located in the parotid gland. The aim of this study was to compare postoperative complications and facial nerve (FN) recovery rates between conventional superficial parotidectomy (CSP) and partial superficial parotidectomy (PSP) as surgical treatment for benign parotid tumours. A prospective study was conducted on 55 consecutive patients who underwent either CSP (n = 35) or PSP (n = 20) for benign parotid tumours. The primary outcomes were FN injury, FN recovery rates, and Frey syndrome. Secondary outcomes were operative time, hospital stay, sialocele, haematoma, and auricular numbness.

PSP is a conservative procedure with less morbidity to the FN along with a shorter operative time and hospital stay when compared to the CSP

The degree of FN injury was evaluated at 1 week, 1, 3, 6, and 12 months postoperative using the House–Brackmann grading system. Frey syndrome was assessed using a subjective clinical questionnaire and objective Minor starch–iodine test. No patient in either group experienced permanent FN paralysis. There was a significantly higher incidence of temporary FN weakness in the CSP group ($P = 0.007$). The respective FN recovery rates at 1, 3, 6, and 12 months were 60%, 88.6%, 94.3%, and 100% in the CSP group and 90%, 95%, 100%, and 100% in the PSP group. No significant difference was observed between the groups regarding the incidence of Frey syndrome, sialocele, and haematoma. The operative time and hospital stay were both shorter in the PSP group. Although the PSP is a more conservative procedure with significantly reduced FN injury, operative time, and

hospital stay compared to CSP, the CSP procedure shows a comparable FN recovery rate to the PSP.



In conclusion, the PSP is a conservative procedure with less morbidity to the FN along with a shorter operative time and hospital stay when compared to the CSP. The CSP procedure showed a comparable FN recovery rate to the PSP.

Source: Al-Aroomi et al. Int J Oral Maxillofac Surg 2020 Aug.
<https://doi.org/10.1016/j.ijom.2020.07.035>

Oral Metastasis of Colorectal Cancer

A 60-year-old woman presented to the oral surgery clinic with gingival swelling. She had a history of colorectal cancer, which had been diagnosed a year earlier, for which she had undergone surgery and received chemotherapy. She first noticed the mass after bleeding occurred while she was brushing her teeth. On examination, a large, nontender, pedunculated mass was seen extending from the buccal gingival border of the lower right second premolar to the lingual border. The surface was friable, and dental indentations on the occlusal aspect suggested chronicity. An excisional biopsy was performed, and histopathological analysis showed an infiltrating tumor, consistent with



adenocarcinoma, probably of colorectal origin. At a follow-up visit 2 weeks later, further debulking of the tumor was performed. Positron-emission tomography showed multiple visceral metastases. The most common sites of metastasis of colorectal adenocarcinoma are the liver and lungs; metastatic lesions in the oral cavity are unusual. The patient was enrolled in a clinical trial of a chemotherapy regimen but was eventually lost to follow-up.

Source: Khanna S et al. N Engl J Med 2020; 383:e47. DOI: 10.1056/NEJMicm1913118



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