



SMART DENTAL UPDATES

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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

- ❑ Reduction of extrinsic tooth stain by a toothpaste containing 10% high cleaning silica, 0.5% sodium phytate and 0.5% sodium pyrophosphate
- ❑ Numerical pain scales used for Pain Estimation during debonding of Orthodontic Brackets.
- ❑ Pheripheral Osteoma in an unusual region of the Mandible.
free to contact us at medicalservices@microlabs.in

Looking forward to your valuable feedback

Best Regards,
Medical Team, Micro Labs Limited



Reduction of extrinsic tooth stain by a toothpaste containing 10% high cleaning silica, 0.5% sodium phytate and 0.5% sodium pyrophosphate: an 8-week randomised clinical trial

This was a 8-week randomised clinical trial. The objective of this study was to assess effects for controlling extrinsic tooth stain of a whitening toothpaste which contains 10% high cleaning silica, 0.5% sodium phytate and 0.5% sodium pyrophosphate in comparison with negative control toothpaste which contains conventional silica base without any active ingredient. Eligible Subjects were divided into test and control groups. The subjects in the test group were given with toothpaste containing 10% high cleaning silica, 0.5% sodium phytate and 0.5% sodium pyrophosphate and subjects in the control group were given with conventional silica base without any active ingredient. In order to maintain uniformity between groups, all of the subjects were provided with the same adult soft-bristled toothbrushes. The patients were asked to use the assigned toothbrush and brush for about 1 minute twice daily and to maintain their oral hygiene habits and daily eating habits. Clinical examination at baseline, 4 weeks and 8 weeks was done. Evaluation of oral soft and hard tissues was performed. Lobene Stain Index was used to assess tooth stain of the anterior teeth. During the follow-up at 4 weeks and 8 weeks the subjects were questioned about the occurrence of any adverse events. Chi-square test and the independent t test were conducted to compare the differences between treatment. 86 subjects took part in this trial, with 43 subjects in each group. 81 subjects completed this trial among them 40 subjects were in test group and 41 subjects were in control group.

10% high cleaning silica, 0.5% sodium phytate and 0.5% sodium pyrophosphate can reduce extrinsic tooth stain.



Extrinsic tooth stain



Baseline Lobene stain scores of the patients who completed the study			
Variables	Test toothpaste	Control toothpaste	P*
Lobene stain area score	1.63 (0.08)	1.59 (0.07)	0.75
Lobene stain intensity score	1.69 (0.10)	1.72 (0.09)	0.81
Lobene stain composite score	3.70 (0.26)	3.72 (0.24)	0.96

No statistically significant differences in Lobene stain area, intensity and composite scores were found between test and control groups. Lobene stain scores at 4 weeks showed statistically significant differences between test and control groups. Subjects in the test group exhibited reductions of 18.05%, 15.95% and 26.01%, in Lobene stain area, intensity and composite scores, relative to subjects in the control group. Lobene stain scores at 8 weeks showed statistically significant differences in Lobene stain adjusted mean area score, Lobene stain adjusted mean intensity score and Lobene stain adjusted mean composite score. Subjects in the test group showed reductions of 26.55%, 25% and 42% in Lobene stain area, intensity and composite scores, relative to patients in the control group. All three Lobene scores at 8 weeks in both groups were lower than those at baseline. No adverse events were reported by the subjects or observed during the study.

In conclusion, use of a toothpaste containing 10% high cleaning silica, 0.5% sodium phytate and 0.5% sodium pyrophosphate can reduce extrinsic tooth stain compared to a negative control toothpaste. Other studies are required in which prolonged observation time and various control toothpastes are included to observe the possible long term effects and relative effectiveness.

Reference: Liu H, Tu J. Reduction of extrinsic tooth stain by a toothpaste containing 10% high cleaning silica, 0.5% sodium phytate and 0.5% sodium pyrophosphate: an 8-week randomised clinical trial. BMC Oral Health. 2021 March ;21(1):1-7.



Evaluation of Different Numerical Pain Scales Used for Pain Estimation during Debonding of Orthodontic Brackets

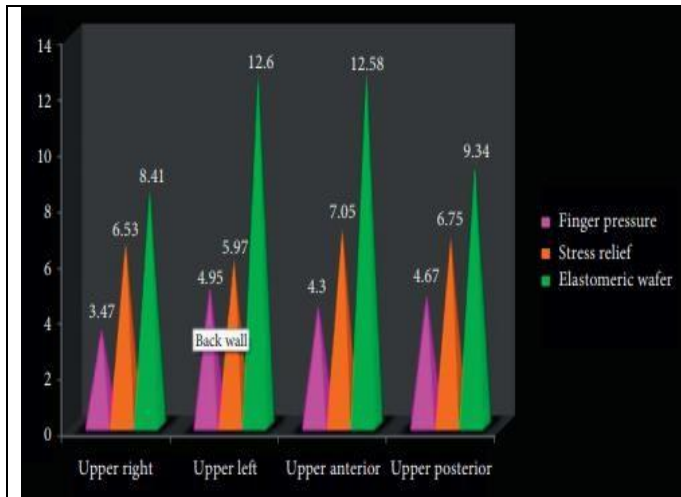
Pain is a subjective experience which will vary among every subject and is expressed by them in varying degrees during the orthodontic treatment. The objective of this study was to compare the efficacy of 2 different pain scales for evaluation of 3 different pain control methods used for debonding.

60 subjects were included in this study, out of which 14 were males and 46 females. Subjects were divided into 3 groups finger pressure (FP) group, elastomeric wafer (EW) group, and stress relief (SR) group. In finger pressure (FP) group from the incisal or occlusal surface of the tooth in a gingival direction with the thumb, operator's finger pressure was applied. A cotton roll was held under a thumb, to remove the influence of the occlusal morphological variations. In EW group- about 5-6 mm thick heavy-body silicone printing impression material was positioned between the arches, and during bracket removal subjects were asked to bite it firmly. SR group- Subjects were told not to occlude their teeth when brackets were being taken off. Stress was relieved by telling debonding had no serious discomfort or pain. Subjects were evaluated for pain perception at the day of debonding and one week before debonding. To record the pain intensity for each tooth a 100 mm Visual Analog Scale (VAS) was used. To evaluate the patient's general attitude towards pain perception Pain Catastrophizing Scale (PCS) was used. Kruskal-Wallis test was used for intergroup and intragroup comparison of pain scores.

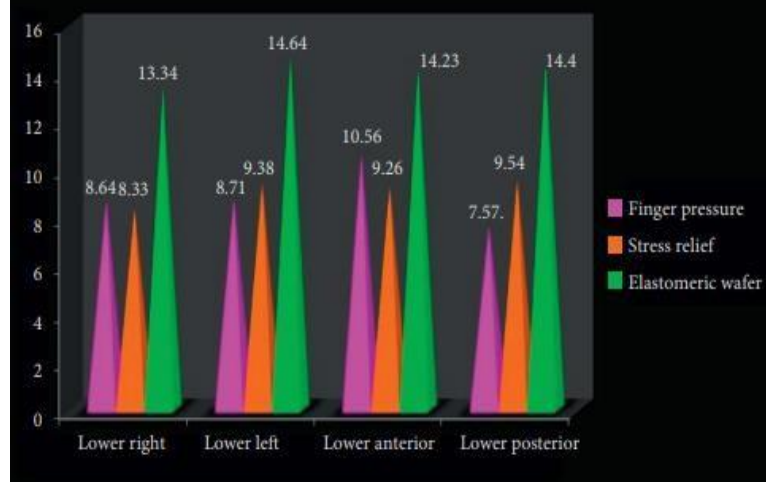
PCS scores showed statistical significant difference between the groups. Intergroup Comparison showed statistically significant difference in the total VAS score between groups with lowest total pain score recorded in FP group. To evaluate the effect of location, a statistically significant difference in VAS score was observed in all 3 groups and higher pain scores were recorded in lower anterior region. In the upper right posterior quadrant total average median score for finger pressure was found to be 3.47,



stress relief was 6.53 and elastomeric wafer was 8.41. and was not statistically significant. Average median score for VAS on the upper right posterior quadrant was statistically significant and detailed as 4.95 for finger pressure, 5.97 for stress relief, and 12.60 for elastomeric wafer. Average median score for VAS was statistically significant on the lower left posterior quadrant showed 8.71 for finger pressure, 9.38 for stress relief, and 14.64 for elastomeric wafer.



Median score for VAS for upper quadrant



Median score for VAS for Lower quadrant

In conclusion, when compared to other methods, stress relief (SR) and elastomeric wafer (EW) method a conclusion can be drawn that FP is an effective method of pain control concerning pain experience during debonding. Anterior region of lower and upper arches of teeth are more sensitive to pain than the teeth in posterior regions during debonding, irrespective of the pain control methods. Most of the pain scales are used for comparing the accuracy and it would be useful to carry out a comparative analysis of different pain scales to evaluate the most accurate scale for nonthreatening cross situational orthodontic procedures.

Reference: Karobari MI, Assiry AA, Mirza MB, Sayed FR, Shaik S, Marya A, Venugopal A, Alam MK, Horn R. Comparative Evaluation of Different Numerical Pain Scales Used for Pain Estimation during Debonding of Orthodontic Brackets. International Journal of Dentistry. 2021 Mar 4;2021



Peripheral osteoma in an unusual region of the mandible

Patient Description: 69-year-old female came with the complaints of swelling on the left side of the anterior part of the tragus. Swelling present since 2.5 years and no action was taken because she had no pain.

No medical history of trauma or temporomandibular disorders was confirmed by interview with the patient. Mild facial asymmetry, but no trismus or occlusal deviation was observed by an extraoral examination. In the left side of the preauricular region, a mass was detected.

Oval radiodense mass was detected at the sigmoid notch of the left mandible was revealed by Panoramic radiograph revealed.

A bony lesion arising from the left mandibular neck with dimensions of $25 \times 20 \times 15$ mm was revealed by a Three dimensional computed tomography (CT).

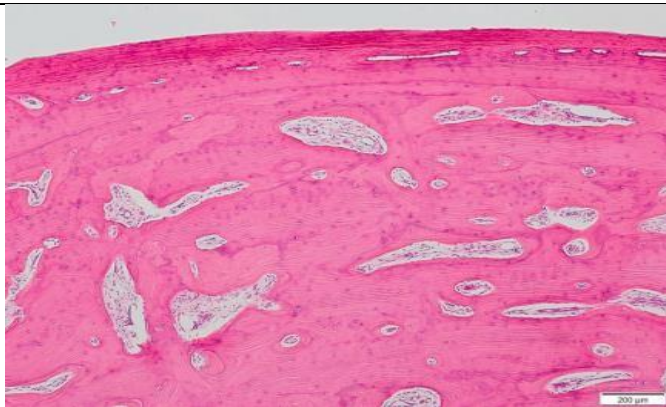
Surgery was performed under general anesthesia. Using a bone chisel and a dental round bur, A bone-like mass that was milk-white, smooth, slightly uneven, and pedunculated was removed. Procedure

was performed carefully so that there won't be any mandibular neck fracture. Mass was completely removed. Histopathological examination- Hard-tissue mass revealed irregular growth of mature lamellar bone to form thick trabecular bone, and cortical bone covering the surface layer. In the remodeled bone, mosaic image reflecting modeling was clearly confirmed. Intertrabecular space with sparse fibrous tissue and osteoblasts were seen on the surface of the trabecular bone. A diagnosis of peripheral osteoma was established based on the preoperative examination, radiological, and



Panoramic radiograph showing an oval radiodense mass at the left sigmoid notch of the mandible.

histological findings. Panoramic photography and 3D-CT imaging was performed to confirm that the osteoma had been removed.



Lamellar bone had grown irregularly to form thick trabeculae, and that the surface layer was covered with cortical bone.



Intraoperative view of the lesion exposed by the high perimandibular approach.

In conclusion, peripheral osteoma of the sigmoid notch of the mandible has been rarely reported. A model with a 3D printer was able to explain the lesion to the subject in an easy-to-understand manner. Because a wide field of view extraoral approach was an effective method. Recurrence have been reported and it is necessary to follow-up subjects for several years.

Reference: Nakayama A, Abe R, Takahashi M, Yamada H, Takeda Y. Peripheral osteoma in an unusual region of the mandible: A case report. Oral and Maxillofacial Surgery Cases. 2021 Mar 1;7(1):100207.



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