

Multident Nano-Silver Hydrogel in Orthodontic Practice:

Rapid Resolution of Palatal Gingival Inflammation During Fixed Retainer Therapy

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Profile

Dr. Sanjeeb Kumar Sahu completed his BDS from SCB Dental College, Cuttack, in 1992, MDS in Orthodontics & Dentofacial Orthopedics from Tamil Nadu Government Dental College, Chennai, in 1996, and LLB from M.S. Law College, Cuttack, in 1999. He has 18 years of teaching experience, including over 9 years as Professor, and last served as Professor & Head of the Department of Orthodontics & Dentofacial Orthopedics at the Institute of Dental Sciences, Bhubaneswar, until July 2018. A four-time Executive Council member of the Indian Orthodontic Society (IOS), he has received multiple Best Paper Awards for clinical innovation at IOS national conferences in Delhi (2012), Kolkata (2014), Hyderabad (2015), and Goa (2016), along with the Best Table Clinic Award at the 1st ILOC, Delhi. Recognised as the Best State Secretary of IDA in 2013, he currently serves as President of the IDA Odisha State Branch. He has authored several papers in national and international journals on clinical innovation and was the Organizing Chairman of the 54th IOS Conference, 2019, held in Bhubaneswar.



Abstract

Fixed lingual retainers create additional plaque-retentive surfaces that can provoke localised gingival inflammation, most often on the palatal aspect of the maxillary incisors where patient access for cleaning is limited. This report presents a case of severe palatal gingival inflammation and bleeding at the maxillary central incisors (11, 21) in a patient with a fixed lingual retainer, managed with **Multident Nano-Silver Hydrogel** as a topical antimicrobial and anti-inflammatory adjunct alongside reinforced oral hygiene. At one-week review, there was marked resolution of gingival inflammation and bleeding, achieved without any interruption to the retainer or adjacent tissues - illustrating the value of nano-silver hydrogel as a rapid-acting adjunct for retainer-associated soft-tissue inflammation.





Clinical Context

Fixed lingual retainers alter the oral environment by creating new plaque-retentive niches around bonded wires and composite pads. The palatal mucosa adjacent to the maxillary central incisors is particularly prone to irritation when such components sit close to the gingival margin, and patients often find plaque control in this region considerably more difficult to maintain than on accessible buccal surfaces. Persistent inflammation in this setting is not merely a comfort issue: it can compromise periodontal health and, if left unmanaged, may necessitate removal of the retainer. A topical adjunct that resolves inflammation quickly, without requiring retainer removal, is therefore of significant practical value in orthodontic retention care.

Case

Palatal Gingival Inflammation Associated with Fixed Lingual Retainer (11, 21)

Patient: Adult, under active fixed retention



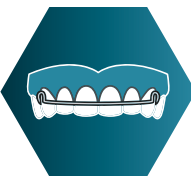
Clinical Findings: Severe, localised gingival inflammation with bleeding on the palatal mucosa in relation to the maxillary central incisors (11, 21), in an area of retainer-adjacent plaque accumulation.



Chief Complaint: Bleeding and inflamed gums on the palatal aspect of the upper front teeth



Diagnosis: Localised appliance-associated gingivitis at 11 and 21, requiring adjunctive topical antimicrobial management alongside reinforced plaque control, without removal or modification of the fixed lingual retainer.



Examination & Diagnostic Findings

On examination, the patient was found to have a fixed lingual retainer bonded from canine to canine, with the wire and composite pads positioned in close proximity to the gingival margin at the maxillary central incisors. The palatal mucosa in relation to 11 and 21 was erythematous and oedematous, with spontaneous and contact bleeding, and visible plaque accumulation in the retainer-adjacent region - an area the patient reported finding difficult to clean effectively at home. The inflammation was assessed as a localised inflammatory response to plaque accumulation in a plaque-retentive zone created by the retainer, rather than a generalised periodontal condition, and treatment was planned to resolve it quickly without disrupting the retainer.

Treatment Protocol

Phase 1 Diagnosis & Oral Hygiene Reinforcement

The retainer-adjacent plaque-retentive area was identified, and the patient was given targeted oral hygiene instruction, including technique for cleaning around the lingual wire and composite pads, to reduce further plaque accumulation at the inflamed site.

Phase 2 Multident Nano-Silver Hydrogel Application

Multident Nano-Silver Hydrogel was applied topically to the inflamed palatal gingiva at 11 and 21 as an antimicrobial and anti-inflammatory adjunct, continued daily for one week alongside the ongoing fixed retention, which proceeded without interruption.



Multident Nano-Silver Hydrogel Application & Home Care

- ✓ Applied directly to the inflamed palatal gingiva at 11 and 21, once to twice daily, for one week.
- ✓ Used as an adjunct alongside reinforced oral hygiene around the lingual retainer, without removing or modifying the appliance.
- ✓ Retention and adjacent tissues remained undisturbed throughout the treatment period



Follow-Up & Outcomes

1-Week Review: At review after one week of Multident gel application, there was marked reduction in the severe gingival inflammation and bleeding previously noted on the palatal mucosa in relation to 11 and 21. The patient reported improved comfort in the region, and the fixed retainer remained in place without any need for adjustment or removal.



Figure 1: Palatal view before treatment, showing severe gingival inflammation at 11, 21.

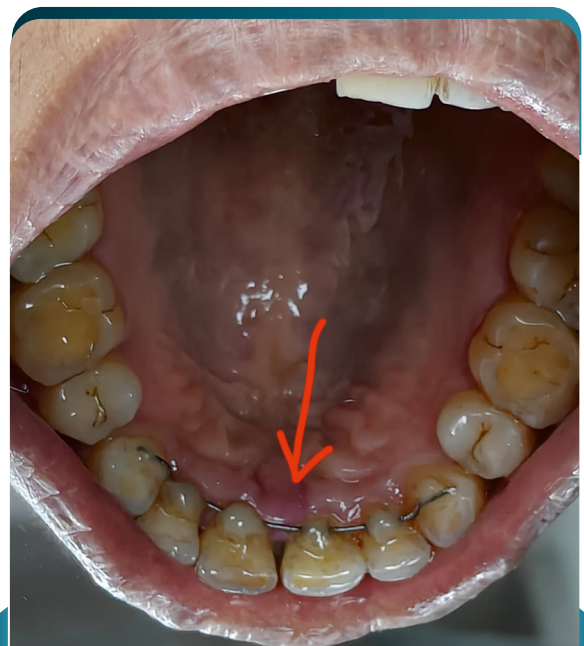


Figure 2: After 1 week of Multident application, showing marked resolution of inflammation.

Discussion & Conclusion

This case illustrates a common challenge in orthodontic retention: soft-tissue inflammation provoked by plaque accumulation around fixed lingual retainers, particularly in palatal regions where patient access for cleaning is limited. The conventional response to persistent, severe inflammation is often to remove the retainer temporarily until the tissue settles, which can compromise retention stability and necessitate rebonding. In this case, **Multident Nano-Silver Hydrogel** was used as a rapid-acting topical adjunct, applied directly to the inflamed palatal gingiva at 11 and 21 alongside reinforced oral hygiene, and achieved marked resolution of severe inflammation and bleeding within a single week.

Notably, this improvement was achieved without any interruption to the patient's fixed retainer, allowing continued stability and avoiding the need for retainer removal or replacement. This is clinically relevant for orthodontic practice more broadly: a reliable, easy-to-use topical adjunct that resolves retainer-associated inflammation quickly can help maintain periodontal health during retention while avoiding the delays and risks associated with retainer removal. The findings are consistent with the broader value of nano-silver hydrogel as a localised antimicrobial and anti-inflammatory adjunct across diverse clinical settings, from periodontal and implant therapy to, as demonstrated here, orthodontic soft-tissue management.

Key Takeaways

- ✓ Rapid, one-week resolution of severe palatal gingival inflammation and bleeding
- ✓ Effective adjunct that did not require interrupting or removing the fixed lingual retainer
- ✓ Useful for managing plaque-retentive niches created by bonded lingual components
- ✓ Simple topical application with good patient compliance
- ✓ Supports periodontal health maintenance during orthodontic retention

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