

Multident Nano-Silver Hydrogel in Post-Implantation Care:

Soft-Tissue Healing and Biological Seal Around Cortico-Basal Implants

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Profile

Dr. Sunil Kumar K R is a general dentist and cortico-basal implantologist practicing at **Sri Dental Clinic, Bangalore**. He is an **international speaker on cortico-basal implantology** and a recognised trainer in the field across **India, Mexico, and Turkey**. He has a special focus on rehabilitating patients with **basal implants** in situations where conventional implants cannot be placed. He follows evidence-based protocols for the placement of cortico-basal implants in immediate extraction cases and is an early adopter of **Nano-Silver Hydrogel** in the post-operative management of peri-implant soft tissue. His expertise in **Immediate Loading Dental Implantology** has established him as a trusted clinician for the rehabilitation of missing teeth in the region.



Abstract

Most patients who report to the dentist with a chief complaint of missing teeth have lost not only their teeth but also a significant amount of adjacent alveolar bone. **Cortico-basal implants** can be placed in cases where there is inadequate bone width and length, avoiding additional procedures such as bone grafting and augmentation. This report presents **two clinical cases** managed at Sri Dental Clinic, in which **Multident Nano-Silver Hydrogel** was used as a **topical antimicrobial adjunct** during the healing phase of the oral mucosa adjacent to the implant. At the **14-day follow-up**, all patients demonstrated **complete resolution of inflammation, absence of infection, and successful healing of the peri-implant mucosa**, underscoring the value of nano-silver hydrogel in establishing a healthy biological seal around cortico-basal implants.



Clinical Context

The interaction between the oral mucosa and smooth-surface implants is central to long-term implant health. The smooth, highly polished surfaces of basal implants (roughness average [Ra] below $0.2 \mu\text{m}$) are less susceptible to bacterial adhesion and biofilm formation than rough surfaces. The goal of gingival attachment around an implant is to create a robust **biological seal** that acts as a barrier against bacterial invasion into the deeper bone tissue. Using **Multident Nano-Silver Hydrogel** as a local adjunct provides a synergistic effect alongside the smooth implant surface, supporting the formation of this biological seal and promoting uneventful soft-tissue healing during the critical post-operative phase^{1,2}.



Case 1

Cortico-Basal Implant Placement in the Posterior Mandible

Patient: Adult / Male

Chief Complaint: Missing posterior teeth requiring fixed implant-supported rehabilitation.

Clinical Findings

Clinical and radiographic evaluation confirmed missing posterior teeth with reduced alveolar bone width and height, unsuitable for conventional implants. The case was planned for cortico-basal implant placement engaging the basal cortical bone for primary stability.

Treatment Protocol

Cortico-basal implants were placed using a flapless, atraumatic protocol, engaging the dense basal cortical bone to achieve high primary stability. The smooth, polished implant surface was positioned to favour a clean soft-tissue interface, and the peri-implant mucosa was carefully adapted around the implant emergence.



Figure 1: Cortico-basal implant placement and adaptation of peri-implant soft tissue

Multident Nano-Silver Hydrogel Application

- Applied around the peri-implant mucosa three times daily for 14 days following implant placement, providing sustained topical antimicrobial protection at the tissue–implant interface.
- Delivered anti-inflammatory support that limited early peri-implant inflammation and promoted clean, uneventful soft-tissue healing.
- Patient counselled on a soft diet and gentle oral hygiene, with adjunctive systemic medication given perioperatively.

Follow-Up & Outcomes

Day 1–10	14-Day Review	Final Assessment
Healthy early healing with reduced inflammation and no signs of infection following regular Multident gel application	Complete resolution of inflammation with healthy mucosa adapted around the implant, confirming a sound biological seal.	Stable implant with healthy peri-implant tissues and high patient satisfaction.

Case 2

Full-Arch Rehabilitation with Cortico-Basal Implants

Patient: Adult / Male

Chief Complaint: Multiple missing teeth and mobile remaining teeth, seeking fixed full-arch rehabilitation.

Relevant History: Significant alveolar bone loss with compromised remaining dentition, making conventional implant placement and bone augmentation unfavourable.

Examination & Diagnostic Findings

Clinical examination revealed multiple non-restorable and mobile teeth with generalised bone loss across the arch. The case was planned for immediate extraction and full-arch cortico-basal implant rehabilitation with immediate loading.

Treatment Protocol

Non-restorable teeth were atraumatically extracted, and cortico-basal implants were placed engaging the basal cortical bone in the same visit. A fixed prosthesis was planned for immediate loading. The peri-implant soft tissue was adapted around the smooth implant necks to encourage rapid biological seal formation.



Figure 2: Immediate extraction with full-arch cortico-basal implant placement and immediate-loading framework

Multident Nano-Silver Hydrogel Application

- Applied around all peri-implant sites three times daily for 14 days to provide localised antimicrobial protection across the full arch during healing.
- Provided sustained antimicrobial and anti-inflammatory action at the tissue–implant interface, helping reduce bacterial load and post-extraction inflammation.
- Adjunctive anti-inflammatory medication and oral hygiene instructions were given to support healing and maintain soft-tissue health.

Follow-Up & Outcomes

Early Review (Day 10)	Final Assessment
Marked reduction in soft-tissue inflammation and oedema, with healthy granulation and no purulent discharge. Excellent Multident compliance.	Successful healing of peri-implant mucosa with no infection, stable implants, and a healthy biological seal supporting the immediate-loaded prosthesis. Patient highly satisfied.

Discussion and Conclusion

The cases above highlight the therapeutic value of **Multident Nano-Silver Hydrogel** in the healing of soft tissue around cortico-basal implants. In both cases, the principal challenge was achieving infection control and a healthy biological seal at the tissue-implant interface during the critical early healing phase. Systemic antibiotics provide only limited and transient coverage at this interface. Multident addressed this limitation by delivering **sustained, high-concentration antimicrobial activity directly at the site of implantation**, providing broad-spectrum coverage throughout healing¹. In addition, the anti-inflammatory action of silver nanoparticles helped reduce cytokine-mediated tissue damage, creating a favourable environment for soft-tissue healing². Successful healing within 14 days in both cases underscores the clinical effectiveness of this approach, which was simple to use and demonstrated excellent patient compliance.

Key Takeaways

1. *Effective infection control and faster soft-tissue healing around cortico-basal implants*
2. *Reduced peri-implant inflammation with sustained, localised antimicrobial support*
3. *Reliable formation of a healthy biological seal and high patient satisfaction*

Comparison

Nano-silver hydrogel demonstrates a superior antimicrobial effect compared with metronidazole gel and iodine mouthwash³. The hydrogel delivery system provides sustained release and enhanced tissue contact, which is not available with traditional rinses and medicaments, making it particularly well suited to the peri-implant healing environment.



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References:

1. Raghav P, Khera AK, Bisht S. Comparative evaluation of antimicrobial properties of silver nanoparticles and chlorhexidine mouthwashes. J Clin Orthod Dent. 2023. 2. Hernández-Sierra JF et al. Bactericidal activity of silver nanoparticles on oral biofilms related to periodontal disease. Bioengineering. 2022;14(6):311. 3. Siddiqi A, Zafar S. Scope of Silver Nanoparticles in Periodontal and Peri-Implant Wound Healing: A Systematic Review of Translation Research. Essent Dent. 2023;2(2):55-65.

Disclaimer:

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