Content available at: https://www.ipinnovative.com/open-access-journals

Journal of Dental Specialities

Journal homepage: https://www.jdsits.in/

Editorial

Surgical microscope in periodontics – Journeying towards precision

Vidya Sekhar[1]*, **Neeta Pasricha**[1]

[1]*Dept. of Periodontics, ITS Dental College, Ghaziabad, Uttar Pradesh, India*

ARTICLE INFO

Article history:
Received 22-08-2024
Accepted 14-09-2024
Available online 20-09-2024

Innovations in dentistry often combine technology and material science for better patient experience. However the overall health of the dentist is also a priority. Recent advancements in dental procedures have placed a significant emphasis on ergonomics and posture to prevent musculoskeletal disorders. Modern dentists are incorporating magnification tools, such as dental loupes and microscopes, allowing for greater precision and comfort.

Dentistry requires fine motor skills and a high visual acuity. The controlled and very fine movements made by the dentist are learned and perfected through hard work. Magnification enhances the visual acuity and assists professionals to carry out treatments which require a greater resolution

There are 3 key points involved in the use of Surgical microscopes. These include the co axial fibre optic illumination, the range of magnification and the use of microsurgical instruments; often termed the microsurgical triad. These points synergistically increase the precision of the operator resulting in smaller wounds, early wound healing and hence increased patient comfort and acceptance.[1]

Use of surgical microscope has gained inroads in the field of Periodontics. The use of After five and mini curettes, piezoelectric devices, with a good magnification can enhance Root surface debridement and achieve gain in Clinical attachment level.[2] This concept of Minimally invasive non-surgical technique has proved efficacious in removal of calculus from furcation areas and root surfaces resulting in firmer tissues prior to regenerative surgery.[3]

Minimally invasive surgical techniques were put forth by Harrel and co-workers in 1995. Further studies by Cortellini and Tonetti detailed the surgical procedures.[4] As is evident from the name, smaller incisions are given as compared to the conventional approach to gain access to the defect site. Various surgical procedures such as modified and simplified Papilla preservation flap, Single flap approach, Non Incised Papilla Surgical Approach(NIPSA), Entire papilla preservation flap (EPPF) are used for regenerative approach. A range of magnification from 4x to 24x may be opted by the clinician depending on the field of vision required to complete the procedure. All these flap techniques preserve the blood supply by minimising incisions and hence enhance healing.

Root coverage procedures including VISTA, M VISTA, Pinhole surgical technique, Gum drop technique, modified Semilunar coronally advanced technique and MICAF may be performed using the surgical microscope. Procurement of thick connective tissue graft under magnification also becomes more predictable as compared to the unaided eye.[5] Several systematic reviews point out the importance of magnification in increasing the percentage of root coverage.[6] The use of fine and smaller sized suture materials leads to good primary approximation and hence better wound healing. The commonly used sutures are 5-0,6-0,7-0 with an absorbable or non absorbable material.

* *Corresponding author*.
E-mail address: vids1981@gmail.com (V. Sekhar).

https://doi.org/10.18231/j.jds.2024.013

The use of surgical microscopes requires a learning curve. It needs constant practice using microsurgical instruments and subtle changes to the principles of instrumentation. The increased treatment time, expensive microsurgical instruments dissuade clinicians from embracing this innovation.

1. Conflict of Interest

None.

References

1. Newman M, Klokkevold P, Elangovan S, Newman KY. Newman and Carranza's Clinical Periodontology and Implantology. Elsevier Health Sciences; 2023.
2. Chinthakunta V, Sambashivaiah S. Periodontal Microsurgery-A Review. *J Adv Res Dent Oral Health* . 2023;8(1&2):1–5.
3. Durgapal S, Shetty M. Magnification in Periodontics: An Overview. *J Health Allied Sci NU*. 2023;13(1):1–10.
4. Cortellini P, Tonetti MS. A minimally invasive surgical technique with an enamel matrix derivative in the regenerative treatment of intra-bony defects: a novel approach to limit morbidity. *J Clin Periodontol*. 2007;34(1):87–3.
5. Bittencourt S, Ribeiro EDP, Sallum EA, Jr FN, Casati MZ. Surgical microscope may enhance root coverage with subepithelial connective tissue graft: a randomized-controlled clinical trial. *J Periodontol*. 2012;83(6):721–30.
6. Moro M, Souto M, Rovai E, Neto J, Holzhausen M, Pannuti C, et al. Effect of magnification on root coverage surgery: A systematic review. *Braz J Oral Sci*. 2020;19. doi:10.20396/bjos.v19i0.8658221.

Author biography

Vidya Sekhar, Professor https://orcid.org/0000-0003-3819-4106

Neeta Pasricha, Professor and Head https://orcid.org/0000-0003-4069-2972

Cite this article: Sekhar V, Pasricha N. Surgical microscope in periodontics – Journeying towards precision. *J Dent Spec* 2024;12(2):65-66.