

## Background

The combination of subepithelial connective tissue graft and coronally advanced flap have been considered as a gold standard in soft tissue regeneration. To improve esthetic outcomes without the need of a second donor site, various graft materials have been proposed as feasible alternative for root coverage. However, data of recession therapy using volume stable collagen matrix (VSCM) is scant. This is the first study to evaluate the long-term stability of Vestibular Incision Subperiosteal Tunnel Access (VISTA) utilizing volume stable collagen matrix (VSCM) in the treatment of multiple gingival recessions.

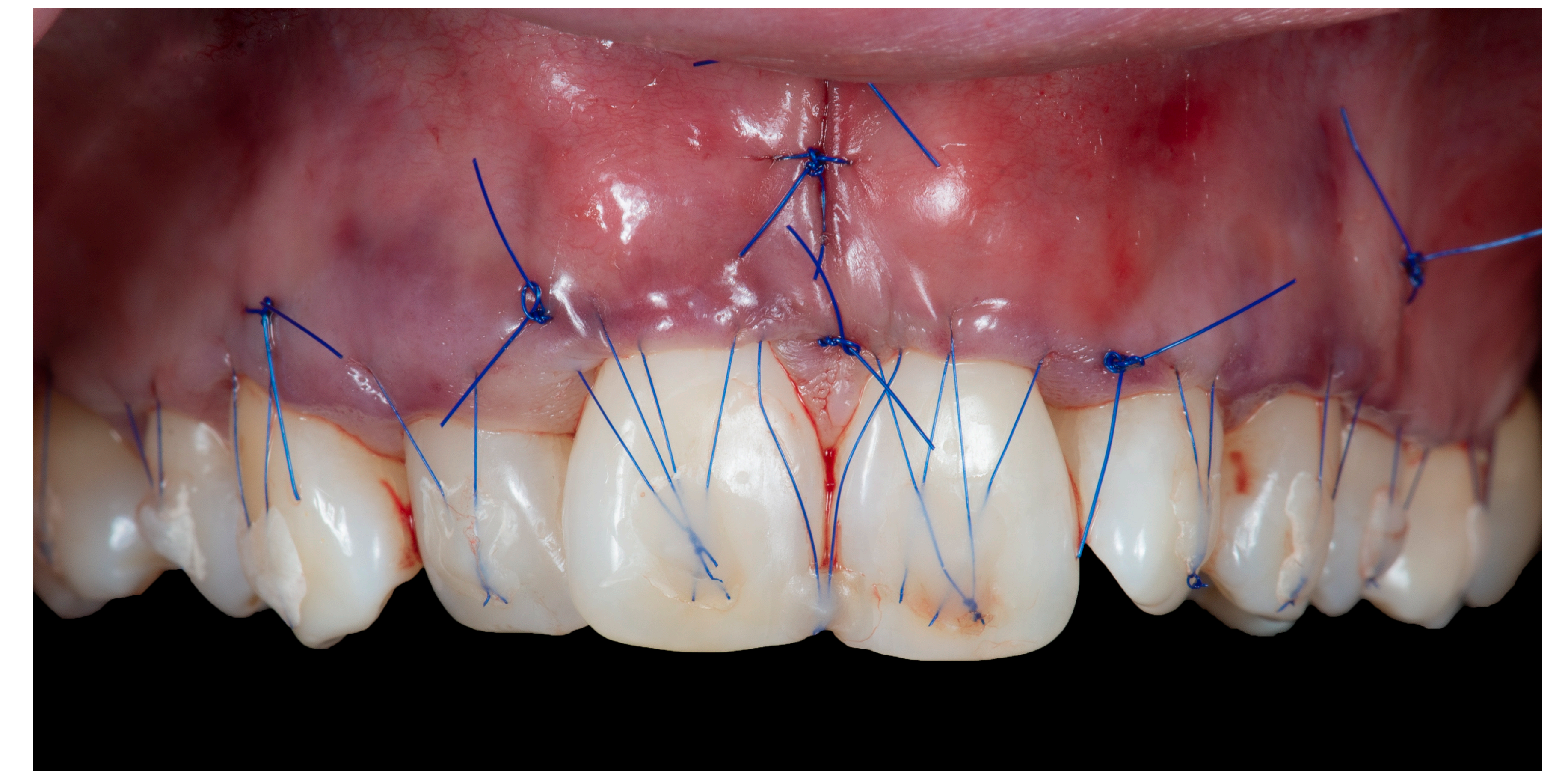
## Aim

To investigate the root surface area coverage using Vestibular Incision Subperiosteal Tunnel Access (VISTA) in conjunction with a Volume Stable Collagen Matrix (VSCM) for the treatment of multiple advanced recession defects.



## Material and Methods

Retrospective case series treated in private practice. Surgeries were performed in Switzerland, Los Angeles and Houston by three different periodontists. Sixteen patients (total of 82 teeth, RT1: N=11; RT2: N=71) with multiple gingival recessions (mean recession: 3.68 mm; ranging from 3 mm to 6 mm) received the root coverage treatment through VISTA with VSCM (FibroGide, 20 mm x 40 mm x 6 mm, Geistlich, Switzerland). In brief, creating a vertical incision with a subperiosteal full thickness tunnel to crease a minimally invasive approach, allowing improved access with less risk of papillary displacement. All sutures were removed three weeks post-operatively. Clinical images were obtained pre- and during follow-up periods. Then, pre- and post-op clinical images were superimposed and root surface area of coverage (%) was measured using an image manipulation software.



# Material and Methods

Images from baseline and different post-operative time points were superimposed by manually adjusting for optimal superimposition of the anatomical landmarks of each tooth to evaluate the obtained root coverage at treated sites following VISTA and VSCM. The data evaluation and all the measurements were performed by one calibrated examiner (C.R.). Following clinical parameters were measured: Recession Type, Location, Tooth Type, Recession Depth (RD), Root Prominence (RP) and Keratinized Tissue (KT).



Pre-op



3M post-op



6M post-op



12M post-op



Initial Recession Surface Area



Superimposition pre-op and 3M post-op  
low transparency



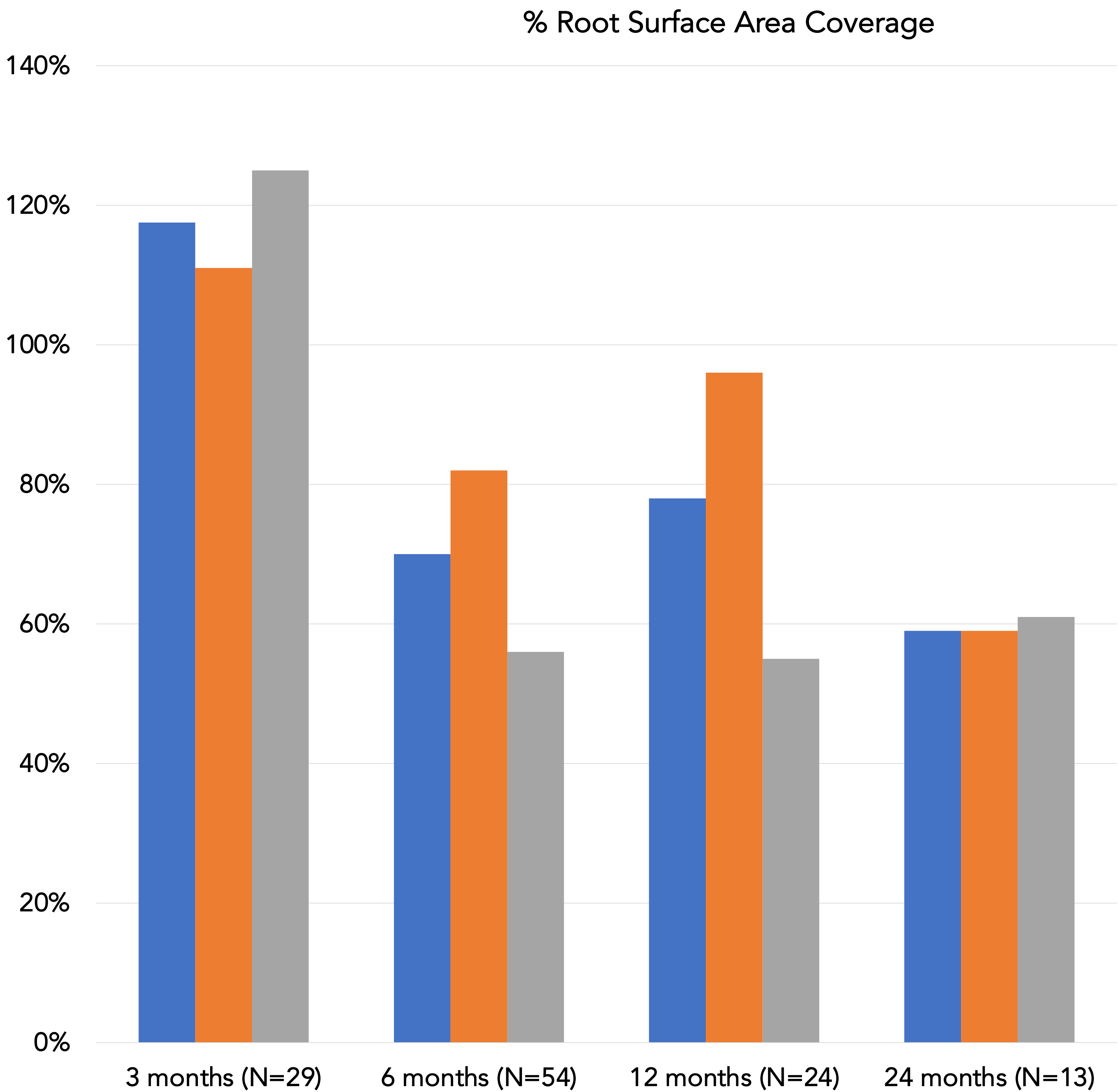
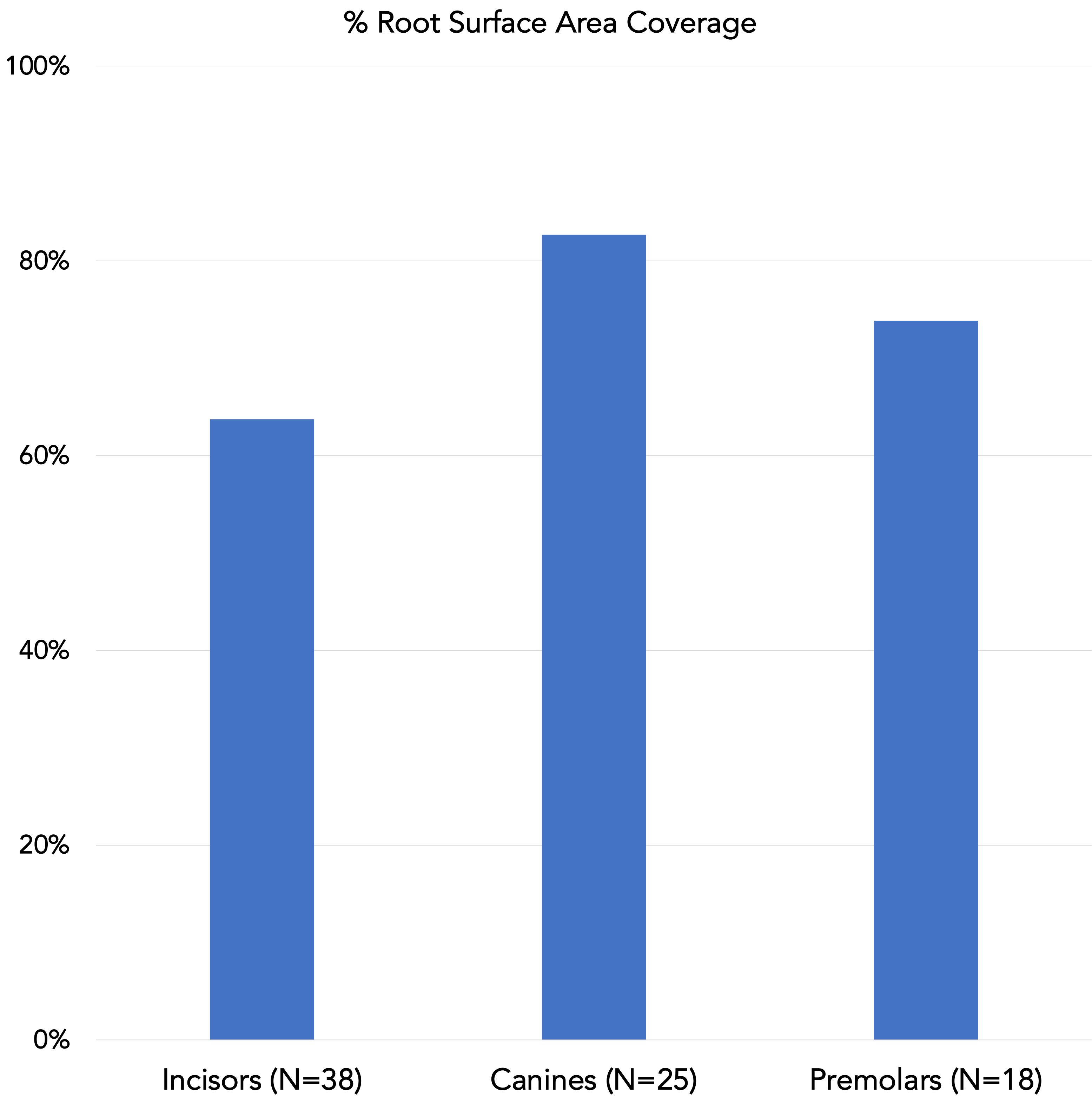
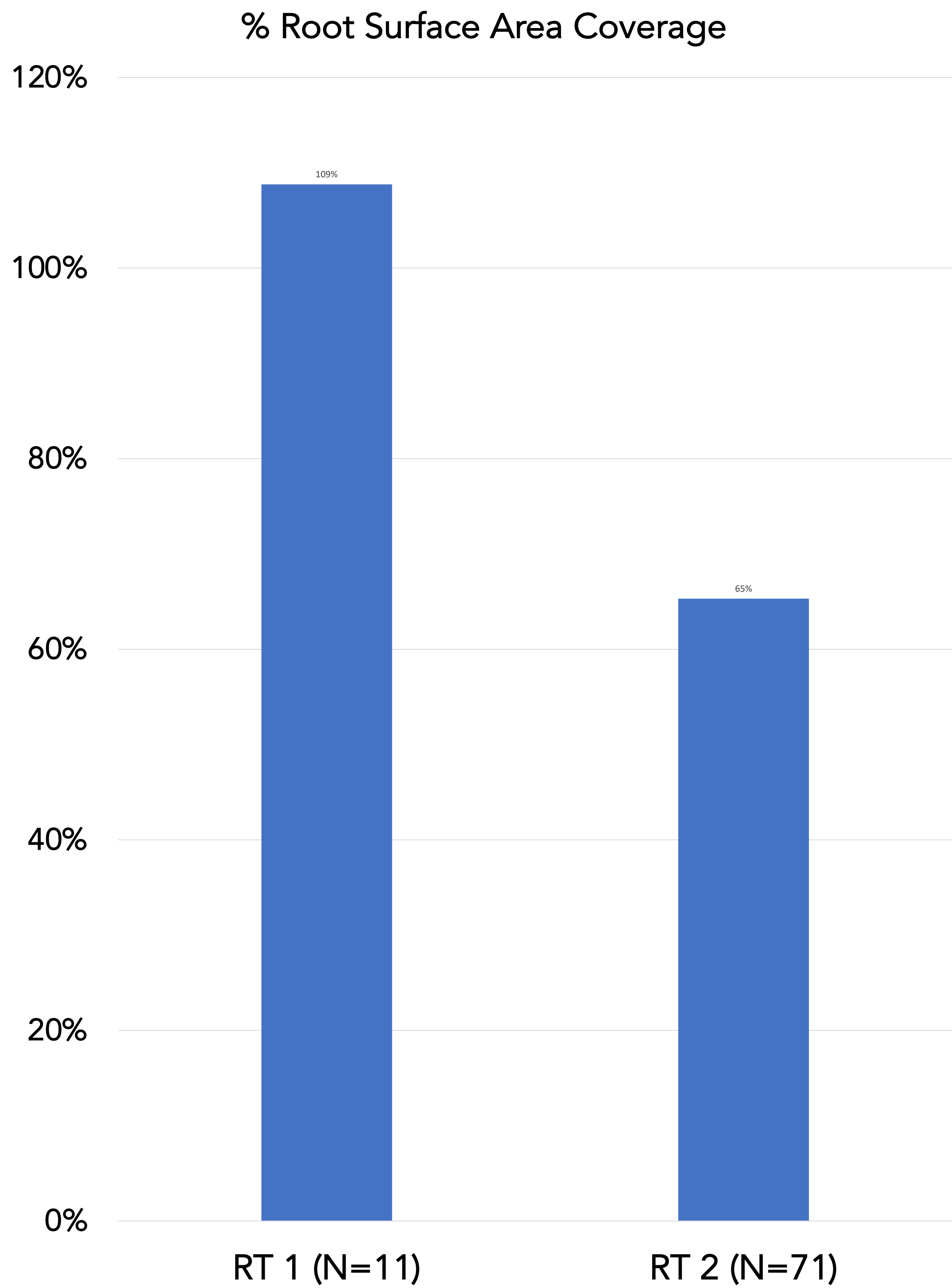
Superimposition pre-op and 3M post-op  
high transparency



Area of root coverage gain at 3M post-op

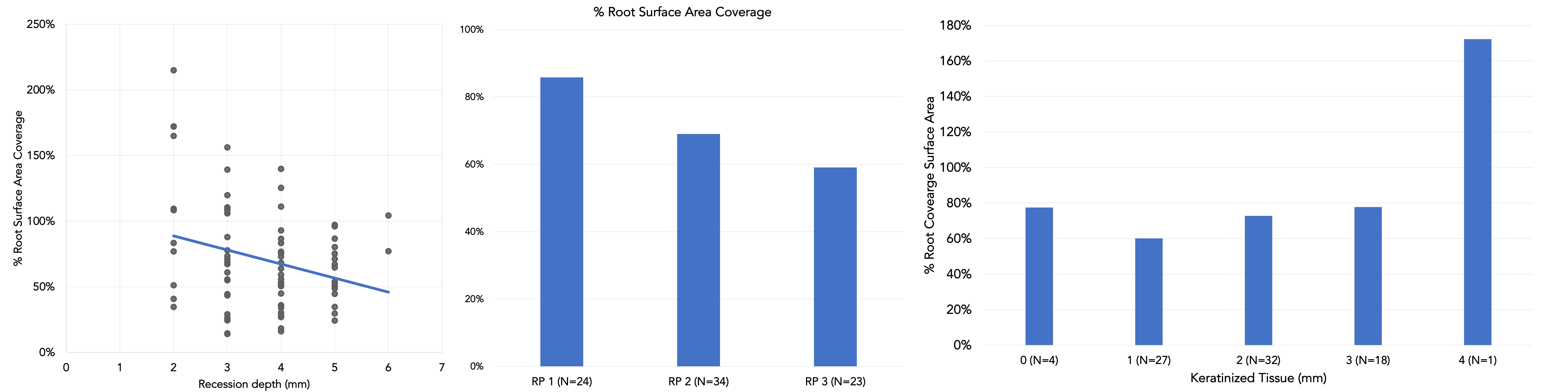
# Results

The mean percentage root coverage at 3, 6, 12 and 24 months was 118%, 70%, 78% and 59%, respectively. The most changes in root coverage surface area was found between 3 month to 6 month. Higher root coverage outcome maxilla was found compared to mandible (77% v.s. 65%). Canine showed the greatest clinical outcome followed by premolar. Superior root coverage outcome was observed in RT I recessions compared with RT II recessions.



# Results

Deeper recession gained less % of root coverage surface area. More root prominence showed less root coverage outcome. However, the amount of keratinized tissue did not show any correlation to root coverage outcome.



# Conclusion

A present retrospective study showed that VISTA utilizing Volume Stable Collagen Matrix is an effective alternative approach to connective tissue graft when treating advanced gingival recessions. The most changes in the location of gingival margin after VISTA + Volume Stable Collagen Matrix was found between 3 to 6 months. Tooth type, location, recession depth and root prominence were found as a negative factors for root coverage procedure.

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2. Min S, Wang YC, Hamaguchi J, Chang CC, Kim T, Carames G, Gil A, Yamaguchi S, Imazato S, Angelov N. Kinetics of Phenotype Modification Therapy with VISTA: A Retrospective Case Series Using 3D Digital Analysis. Int J Periodontics Restorative Dent. 2022 Dec 13. doi: 10.11607/prd.5621. Epub ahead of print. PMID: 36520129.

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