Optimization of a Novel Organic-Mineral Bone Adhesive for Dental Bone Grafting

Clinical Need

Based on market research conducted by RevBio, almost half the patients that seek a dental implant supported crown suffer from chronic edentulism and require extensive bone grafting to rebuild their alveolar ridge. Over 30% of the time, these grafting procedures achieve suboptimal results and require some form of re-grafting adding to the overall cost, treatment time, and morbidity for these patients.

Solution

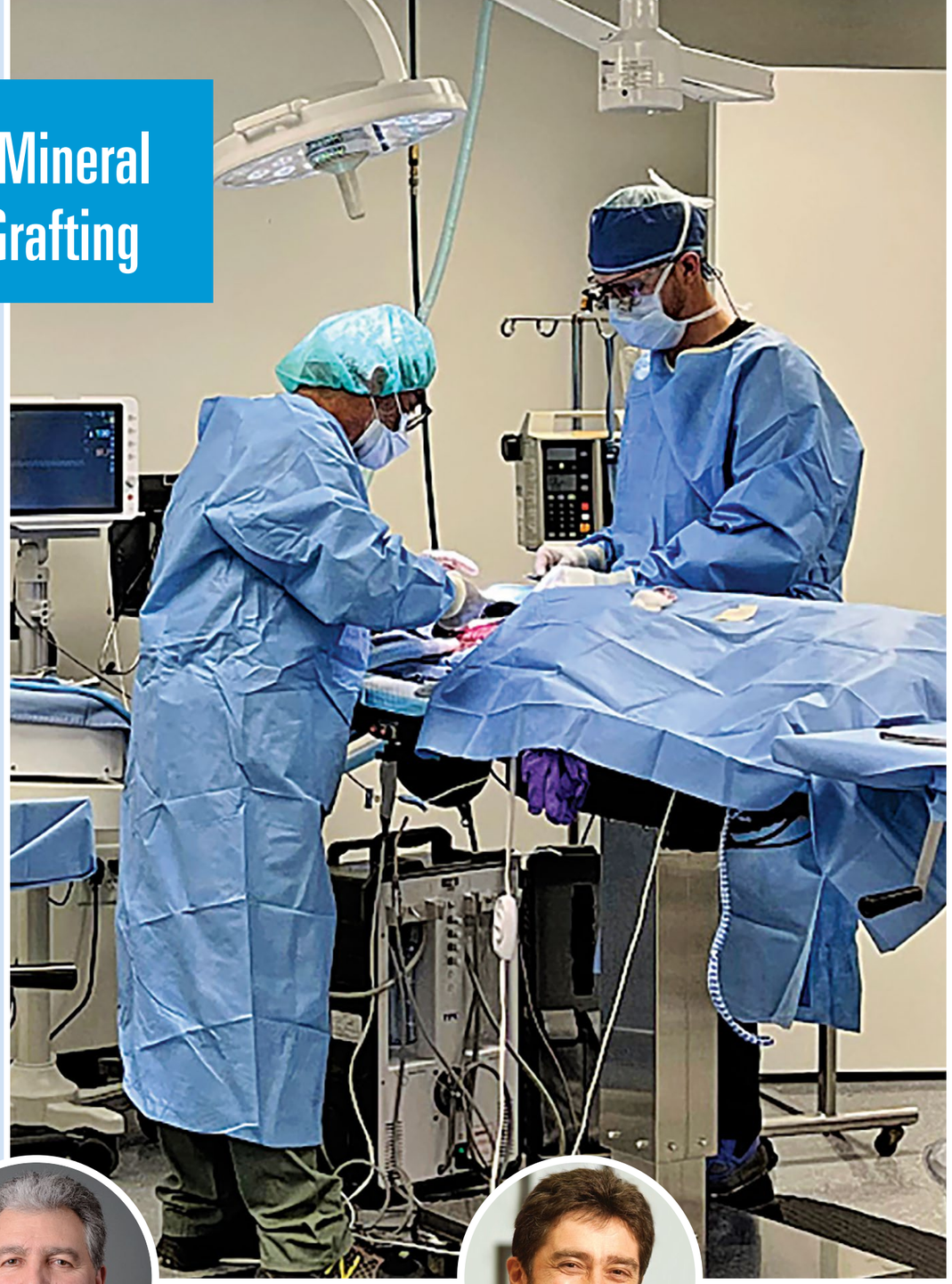
RevBio has developed Tetranite® Adhesive Dental Bone Scaffold (TN-ADBS), a synthetic, porous, cohesive organic-mineral bone scaffold with adhesive properties that resorbs and is replaced by bone on a timescale commensurate with existing graft materials but does not require ancillary fixation or containment devices.

Competitive Advantage

Currently available particulate bone grafting products require significant surgical skill to apply. In contrast, TN-ADBS is both cohesive and adhesive which makes it easy to use. The product will reduce the overall time necessary to perform ridge augmentation procedures, better maintain graft volume over time, and minimize the need for re-grafting.

Foundational Publications & Patents

- Kesseli et al. Identification of a calcium phosphoserine coordination network in an adhesive organo-apatitic bone cement system. Acta Biomater 2020
- Kirillova et al. Bioinspired mineral–organic bioresorbable bone adhesive. Adv Healthc Mater 2018
- US8,232,327 Tetra Calcium Phosphate Based Organophosphorus Compositions and Methods
- US8,765,189 Organophosphorous & Multivalent Metal Compound Compositions and Methods



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ITP Support

The project entered the ITP program in 2018, enabling RevBio to initiate the dental bone grafting project. Through the program, RevBio accomplished key marketing milestones, including market surveys to validate the clinical need and the lack of any known competitive products with a comparable clinical value proposition. The Quality Assurance Core aided in performing a supplier quality audit for animal study, and the program helped recruit influential surgeons for validation studies. The Resource Center and its internal resources have been critical in advancing the development of this high-potential product.

Key Inflection Points/ Regulatory Pathway

- Fundraising – Close convertible note round ahead of anticipated Series A round by end of Q2 2023
- Device-led combination product; IDE submission scheduled for Q3 of 2024

Opportunities for Partnerships

- Distribution of the product: Strong industry distribution partner that can represent the product globally
- Investment opportunity: Currently seeking Series A financing of $25M to initiate multiple clinical studies

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