The Single Step Surgical and Restorative approach to Achieve Functional and Esthetic Outcomes with Resin-Bonded Bridges

BACKGROUND

The Resin-Bonded Bridge (RBB) is a viable alternative to Dental Implants, although patient specific barriers do exist i.e. issues with debonding, food/plaque trapping (due to poor restorative emergence) and aesthetics (both pink and white tissues). Good evidence now exists to suggest aesthetic and functional longevity of RBB's provided careful case planning and selection is observed (Thoma et al 2017). However, there is limited available research specific to the use of surgery in an additive method, as opposed to resective, for optimising outcomes of RBB's.





This case report details the treatment of a 17 year old female patient with missing maxillary lateral incisors who presented with existing RBB's (Fig 9). Her complaints included the aesthetics of the bridges as well as food trapping around the cervical portion. Following assessment, specific considerations included the patients expectations and age (Bohner et al 2019) (with likely ongoing growth and development a potential future concern) and clinically the underlying alveolar ridge morphology and lack of soft tissue (Fig1a &1b). Despite the patient requesting Dental Implants, it was felt that a less invasive modality with minimal appointments and time, using a combination of surgery and prosthetics could be used to achieve

the desired outcome.

MATERIALS & METHODS

The treatment involved a single surgery, utilising a combination of hard and soft tissue augmentation. Autogenous (de-epithelialized connective tissue graft) was used for the soft tissue zone (*Fig2a & 2b*) and xenograft (Ossix Volumax®) for the hard tissue zone (Figure3a & 3b). Simultaneous restoration using specifically designed RBB's (Fig4a & 4b) was used to aid pontic site development post-operatively. Strategic suturing allowed appropriate closure without the need to resect any tissues (Fig5a & 5b).



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RESULTS

Following intervention (Pre and post op Figure 6 & 7) the Patient was reviewed at 2 weeks for suture removal (Fig 8) and then periodic reviews thereafter including 6months and most recently at 24months (Figure 10). No additional intervention was required asides from oral hygiene reinforcement during this period. There was no reported incidence of debonding.





ORAL RECONSTRUCTION

CONCLUSIONS

With careful case selection and planning, RBB's can be considered an effective treatment for the replacement of single units/ edentulous sites in cases of hypodontia. Non-Resective surgeries can be considered more favourable as it allows for hard and soft tissue maintenance if the patient decides to pursue dental implant treatment in the future. This case highlights the importance of treating both hard and soft tissue zones as well as surgical and restorative intervention to help achieve an aesthetic and functional outcome.





References

Bohner L, Hanisch M, Kleinheinz J, Jung S. Dental implants in growing patients: a systematic review. British Journal of Oral & Maxillofacial Surgery. June 2019; 57(5):397-406.
Thoma DS, Sailer I, Ioannidis A, Zwahlen M, Makarov N, Pjetursson BE. A systematic review of the survival and complication rates of resin-bonded fixed dental prostheses after a mean observation period of at least 5 years. *Clinical Oral Implants Research*. November 2017;28(11):1421-1432.