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Beyond Technology - Digital & Esthetic Dentistry : A Powerful Combination Important numbers in implant dentistry

CR-11
Clinical case Report

4

Case selection for root membrane technique

Miho Kimura

Takadanobaba ribbon dental & Orthodontics

Objectives

As bundle bone receives blood supply from periodontal ligament and tooth extraction causes bone resorption, it is a well-known fact that the root membrane technique can reduce bone resorption, providing advantage in aestheticity over conventional immediate implantation. In this research, we are displaying pre-treatment diagnostic criteria to apply the root membrane technique.

Materials and Methods

We have classified clinical cases into 4 types by evaluating on the sagittal image captured by CBCT, to predict the change of labial alveolar bone morphology after tooth extraction. We classified the labial alveolar bone into two areas and the Crestal zone was the area from the CEJ to the apical side 4 mm. Radicular zone was defined as the area from crestal zone to the root. Classification of labial alveolar bone morphology is divided into Crestal zone and Radicular zone, and classification of Thick and Thin is classified as follows: presence / absence of bundle bone, position of root, bone fenestration, tooth axis, degree of indentation of alveolar bone morphology and the width of labial alveolar bone, we judged comprehensively above and classified it. Categories according to each combination were classified into Thick-Thick type, Thick-Thin type, Thin-Thick type, Thin-Thin type and studied treatment methods to preserve natural form of alveolar process. (Fig.1)

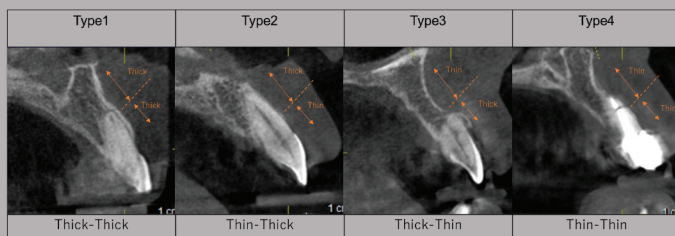


Fig.1 Classification of labial alveolar bone morphology

Results

Type 1 : Bone resorption after tooth extraction is not substantial, and esthetics are obtained even with the conventional immediate transplantation method.

Type 2 : Although immediate implantation may also preserve aestheticity, but it is easier to success by using the root membrane technique.

Type 3 : The root membrane technique is desirable because there is drastic bone resorption after tooth extraction.

Type 4 : The root membrane technique should be applied to the extent possible. It is highly likely that CTG and extensive GBR or bone grafting will be necessary as well as route membrane technique.

Conclusions

In Thick -Thick type and Thin-Thick type, it can be said that the absorption amount after tooth extraction is small, since it is the thickness of the part of radicular zone(Fig.2). In Thick -Thin type and Thin -Thin type, it can be said that bone resorption amount is large because the thickness of radicular zone is small. It is necessary to select the root membrane technique for the Types 3 and 4. Also, with regard to Types 1 and 2, the root membrane technique should be applied to cases where the adjacent tooth has dental prosthesis as well as to the canine teeth at the corner of dental arch(Fig.3). In this way, we predict the amount of labial alveolar bone resorption after tooth extraction, it becomes possible to determine before the operation what kind of treatment is effective.

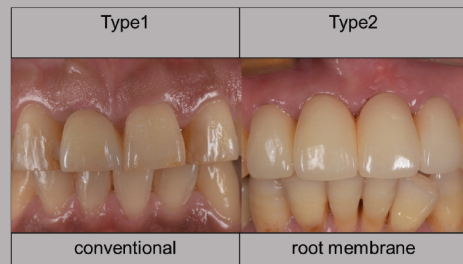


Fig. 2 Cases with thick radicular zone

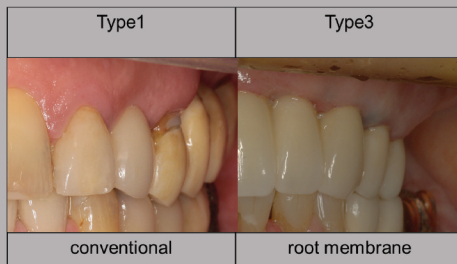


Fig. 3 Comparison of bone resorption of canines part

Reference

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