

Corticotomy and Bone Grafting in Relation to Orthodontics

Tooth movement is not confined by a patient's age. But it can be limited by the shape of the alveolar ridge. A patient who has a nice bone structure (basal bone) does not necessarily have an adequate alveolar ridge to carry the tooth movements. The best diagnostic tool to detect bone support is the three dimensional x-ray because it allows you to differentiate the buccal and lingual sides of the alveolar ridge. The conventional two dimensional x-rays (Panoramic and periapical x-rays) are not able to provide the same information.

Restorative dentistry pays a great deal of attention on the dimension of the buccal and lingual alveolar ridge prior to the placement of the implants to avoid implant perforation. So as in orthodontics, any tooth movement should be treated with same caution. If a tooth movement is carried toward the limited alveolar bone area, the following phenomenon will happen such as perforation (dehiscence), root resorption or unmoved tooth (cortical anchorage by Ricketts).

Since 1868, there have been many published articles about bone grafting. Recently, Wilcko, Roblee, Oliveira utilized corticotomy and bone grafting to facilitate tooth movements. The following are their benefits:

1. faster tooth movement - to increase the speed of tooth movement 3-4 times
2. safer tooth movement - to avoid aggravation of gum recession
3. wider scope of treatment – to convert some jaw surgery cases to be treated by orthodontics alone

Over all, it is a delicate procedure and will need to take very cautious steps to execute it.