

Association of symmetric and asymmetric orthodontic extractions with different occlusal characteristics

Sarah Irfan

Aga Khan University Hospital, Pakistan

Different extraction patterns are employed during orthodontic treatment. The aim of this study was to compare occlusal parameters in symmetric and asymmetric extraction groups that led to the decision of certain extraction pattern. This will help in developing accurate treatment plans in the future which will improve both the efficiency and outcome of the treatment. A cross-sectional study was conducted using orthodontic files of 62 patients at a tertiary care hospital. These patients were divided into two groups according to their treatment approach. Group-1 consisted of 31 patients treated with symmetric extraction patterns, whereas Group-2 consisted of 31 patients treated with asymmetric extraction patterns. Categorical variables such as gender and canine and molar relationships were reported as frequencies and percentages. The frequencies of canine and molar relationships were compared between the symmetric and asymmetric extraction groups using Chi-square test. The mean midline discrepancy, overjet, overbite and tooth material arch length discrepancy were compared between the two groups using independent sample t-test. A p-value ≤ 0.05 was taken as statistically significant. Greater overjet values were found in the symmetric extraction group, whereas greater values of midline discrepancy were found in the asymmetric extraction group. Molar and canine relationship also showed significantly different values between the symmetric and asymmetric groups. It was concluded that overjet, midline discrepancies, molar and canine relationships play an important role in formulating ideal extraction plans. Customized treatment plans on the basis of comprehensive analysis should be developed to expect reliable results. During the last decades the quantity of patients seeking odontology treatments has augmented, as even have the aesthetic demands and also the request for shorter treatment times. Most typical odontology treatments need nearly 2 years finishing. Many factors will influence the length of treatment, like the severity of the case, the requirement of the extraction of premolars, the clinician's expertise and in fact patient's cooperation. Totally different techniques, each surgical and non-surgical, square measure used as coadjuvants of treatment. Lately, one amongst the foremost used has been corticotomy. This is often outlined as a surgical treatment during which the animal tissue bone is cut, perforated or automatically altered, while not really moving the medullary bone. The aim of this system is to accelerate odontology dental movements so as to cut back treatment time and so to cut back the undesirable effects related to prolonged treatments (root or-

ganic process, periodontal disease, chemical change and animal tissue recession), additionally to extend patient's satisfaction. Bone transforming processes begin once associate odontology force is applied over the periodontium that, in turn, generates associate antiseptic inflammatory response. This tissue response at first involves vascular changes, followed by the synthesis of prostaglandins, cytokines, growth factors, neurotransmitters, metabolites of arachidonic acid and hormones. The role of cytokines throughout tooth movement isn't clear; but, it's been urged that cytokines and different inflammatory markers, like autocoid E2, might activate bone transforming characterised by bone organic process within the compression region and bone deposition within the tension region of the odontology ligament. Treatment length depends on dental movement rate, which depends on alveolar transforming rate. Therefore, it's thought of attainable to realize a rise within the treatment speed, influencing the biological reactions of the alveolar bone, the odontology ligament, the animal tissue and also the vascular and neural irrigation. Corticotomy involves the creation of shallow perforations or cuts created within the animal tissue alveolar bone whereas the fibrous tissue or medullary bone is left intact, so as to induce associate acceleration of the traditional physiological processes concerned in bone healing. Following the surgical bone wounding a "Regional Acceleration Phenomenon" (RAP) takes place. RAP potentiates tissue reorganization and healing by a transient burst of localized onerous and soft tissue transforming, it's related to an insertion and bone turnover increase and a decrease in bone density. It's kind of like the processes related to bone fractures healing, which has a reactive section, a reparative section and a transforming section. The reactive section lasts seven days and it's characterised by immediate constriction of blood vessels followed by intumescency inside many hours. The intumescency can type associate combination of fibroblasts, living thing materials and different supporting cells. Many days later, the fibroblasts of the membrane close the lesion space and also the fibroblasts from the connective tissue can rework into chondroblasts and type cartilage. Periosteal cells, peripheral to the gashed space, can become osteoblasts and start to make bone tissue. The association between cartilage and bone tissue is named "bone callus" and can get replaced by lamellar bone during a later section. It's calculable that RAP reaches its most level in regarding 2-4 months. Coordination between

Note: This work is partly presented at 40th Asia Pacific Dental and Oral Congress Osaka, Japan September 16-17, 2019

the doc and also the dental practitioner is crucial so as to realize optimum results. Some studies have shown that low-level optical device medical care, at a cellular level, causes a rise in RANKL within the odontology ligament that, in turn, will increase the differentiation of precursor cells into activated osteoclasts and probably will increase the speed of odontology tooth movement. However, different studies show that low-energy optical device irradiation doesn't accelerate tooth movement and might even slow it. The discrepancies is also explained by the various treatment protocols employed in these studies, as well as the wavelengths of the lasers, irradiation doses, locations, and frequencies. Some authors as for instance Varella et al. Tried to spot and assess the animal tissue crevicular fluid levels of IL-1b throughout odontology tooth movement and also the correlation with the utilization low-level optical device medical care to work out whether or not it will accelerate. Orthodontic tooth movement, they ascertained that low-level optical device therapy-facilitated orthodonture is about two times quicker than typical orthodonture and might be used as a non -surgical methodology to supply physical stimulation leading to accelerated tooth movement. Gkantidis et al. within the different hand over that there was weak proof that low optical device medical care and a corticotomy were related to accelerated odontology tooth movement. However, additional analysis is needed before the twin medical care achieves routine application.

Note: This work is partly presented at 40th Asia Pacific Dental and Oral Congress Osaka, Japan September 16-17, 2019