Digital Orthodontics Symposium addresses progressive topics

By Dental Tribune MEA / CAPPhnea

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scanner and clinical applications of intraoral scanners in orthodontics. Another speaker Dr. Amar Benaddi from France spoke about a New 3D Concept in Vestibular Orthodontic Treatment. Prof. Ross Hobson from UK spoke about improving planning and predictability using digital workflows in ortho-restorative cases. After the break the stage took Dr. Khaled Hazem Attia from Egypt and his lecture “The Role of CBCT in Evaluating Carriere® Motion Appliance”. The event was concluded by Dr. Jaswinder Gill from UK explaining how to increase case acceptance with the digital workflow. During the second day there were four various tables where the hands-on trainings took place. The tables operated simultaneously with a rotation of several groups for each table. The trainings were held in small groups (no seats available per session) in order to have the highest impact. Outstanding orthodontists presented various topics of a great interest. The participants had an opportunity to interact immediately and ask their personal questions. The practical demonstrations, at the same time, provided inspiration and offer means of trouble shooting.

The next Digital Orthodontics Symposium will take place from 12-13 April 2019 in Madinat Jumeirah Conference Centre, Dubai.

Opening speech by Dr. Naif Almosa during the scientific programme of the Digital Orthodontics Symposium

Delegates during the scientific programme of the Digital Orthodontics Symposium

Dr. Francesco Garino from Italy during his lecture during the Digital Orthodontics Symposium

Dr. Amar Benaddi from France during his lecture during the Digital Orthodontics Symposium

Prof. Ross Hobson from UK during his lecture during the Digital Orthodontics Symposium

Dr. Jaswinder Gill from UK during his lecture during the Digital Orthodontics Symposium

Dr. Khaled Hazem Attia from Egypt during his lecture during the Digital Orthodontics Symposium

Dr. Ajay Guelal from UAE representing invisalign during his hands-on training the Digital Orthodontics Symposium

Dr. Amar Benaddi from France representing Sinterex during his hands-on training the Digital Orthodontics Symposium

Dr. Jaswinder Gi from UK representing Carestream during his hands-on training the Digital Orthodontics Symposium

Delegates during the scientific programme of the Digital Orthodontics Symposium

Panels discussion during the scientific programme of the Digital Orthodontics Symposium

Delegates practicing during his hands-on training the Digital Orthodontics Symposium

Delegates during the scientific programme of the Digital Orthodontics Symposium

Panel discussion during the scientific programme of the Digital Orthodontics Symposium

Delegates during the scientific programme of the Digital Orthodontics Symposium

Panel discussion during the scientific programme of the Digital Orthodontics Symposium
A retrospective study to evaluate the intra-arch dimensional changes in moderate crowding cases treated non extraction with a passive self-ligation appliance

By Vishal Bharadwaj, Gurkeerat Singh, Sridhar Kannan, Raj Kumar Singh, Ashish Gupta, Gaurav Gupta, and Abhishek Goyal

Background
Irregularly placed front teeth is one of the most frequently encountered chief complaint in day to day orthodontic practice. The etiology for which may be tooth size-arch length deficiency (4). This condition can be treated, either by reducing tooth size and/or by increasing arch width and/arch depth (5). In other words, Orthodontists can gain space by expanding the arch anteropos- teriorly or transversely along with other conventional means, depend- ing on the treatment plan.

Non-extraction treatment protocols are better accepted by patients as well as clinicians. Among the tech- niques and mechanics with the po- tential to facilitate nonextraction treatment includes hidragen, fixed sagittal correctors, transverse expan- sion screws and selfligating systems. Although each of these approaches necessitates an increase in arch length to facilitate alignment with- out extraction, it has been purported that passive self-ligating brackets can induce specific, uniquely stable arch dimensional changes when used with thermally archwires (6).

Self-ligating brackets (SLB) are not new in orthodontics. They were in- troduced to the specialty nearly a century ago, with the Russell Lock (9) edgewise attachment being de- scribed in 1935. The Damon SL bracket (30) were introduced in 1996 and have been modified over the years. In the past two decades, there has been an increase in the manufactur- ing and release of self-ligating bracket- sets with active or passive ligation modes. The basic advantage of these brackets involves the elimination of certain utilities or materials such as elastomeric modules along with the process or tools associated with their application. This is supposed to bring about several favorable fea- tures to the treatment including, the elimination of potential crosscon- tamination with elastic ligatures, consistently full engagement with- out the undesirable force relaxation of elastomeric modules, reduced risk for enamel decalcification from the elimination of the retentive site for plaque accumulation, reduced friction in sliding mechanics, and assumed lower magnitude forces re- sulting in fewer side effects (10).

Objectives
The Objective was to retrospectively evaluate the intrarach dimensional changes in moderate crowding cases treated non-extraction with a pas- sive self-ligating (Damon 3MX) appli- ance by assessing the pre treatment and post treatment digitized models and lateral orthopantograms.

The study was formulated as a dou- ble blind study.

Methods
A total of 20 patients between the age group of 15 - 18 years who had un- dergone non extraction orthodontic treatment with the Damon 3MX (Ortho, San Diego, Calif) appliance were selected. Patients with a full complement of teeth up to erupted second permanent molars with moderate crowding in the maxillary and/or mandibular arch, with skel- etal Class I jaw base relation treated with non extraction treatment plan were included in the study. Ortho- dontically retreated cases, congenital absence of teeth, aberration in tooth size/shape were excluded.

Only those pretreatment and post treatment models and lateral ortho- pantograms were selected for scanning which met all the inclusion and exclusion criteria as well who were treated according to the passive self- ligation philosophy as well with the standard wire sequencing. The fol- lowing arch wire sequencing were used:

0.019x0.025 Copper-Nickel-Tita- nium (Cu Ni-Ti) was in place for 2 - 4 months.
Followed by 0.016x0.016 Cu Ni-Ti for a minimum period of 2 months or a 0.017x0.025 Cu Ni-Ti for a minimum period of 2 months.

0.017x0.025 Cu Ni-Ti for mini- mum of 2 months. 

0.017x0.025 SS, 0.019x0.025 Titanium Molybdenum alloy (TMA) finishing wire for minimum period of 2 months.

All the pre-treatment and post treat- ment dental stone models of maxil- lary and mandibular arches were scanned using 3D digital scanner (Maestro 3D, Great lakes, USA) and converted into digital models which could be examined in all the 3 planes of space.

Parameters undertaken for study were measured digitally on the com- puter in millimeters which included Inter-canine width (C) of maxilla and mandible, Inter-molar width (PM) of maxilla and mandible; Inter-2nd premolar width (P2M) of maxilla and mandible, Arch depth of maxilla and mandible, Mandibular incisor inclination and Mandibular incisor inclination (Fig- ures 1 - 4).

Inter-canine width. Measurements were made from the cusp tips of the right and left first).

Inter-first premolar width. Measurements were made between the buccal cusp tips of right and left first premolars.

Inter second premolar width. Measurements were made between the
buccal cusps of right and left second premolars.

First inter molar width: Measurements were made between the mesio-buccal cusps of right and left first molars.

3.1. Arch Depth

First line is drawn connecting the central fossa of first molars on the right and left sides. A second line was drawn perpendicular to the first, based on the contact point between the central incisors.

Cephalometric tracings were performed using digital cephalometrics (Nemo Ceph, version 6.0, Spain). Pre-treatment and post-treatment readings of each patient were evaluated from the software and pre-treatment and post-treatment superimposition was also carried out.

3.2. Upper Incisor Inclination

U1 to SN plane angle: It is the inferior inside angle formed between the long axis of the upper incisor and Sella-nasion line. U1 to Palatal plane angle: It is the inferior inside angle formed by the intersection of the long axis of the lower incisor with the occlusal plane.

3.3. Intra-arch dimensional changes in both maxillary and mandibular arches, with more expansion in premolar area. Arch depth was found to be decreased in upper arch it was further strengthened using a larger sample size and preferably using a prospective study model.

5.2. Limitations of Study

Present study had the limitations of small sample size of twenty patients and retrospective in nature. As retrospective studies are always subject to various types of bias because of the lack of randomization. Hence, the results obtained from the current study should be further strengthened using a larger sample size and preferably using a prospective study model.

References


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