UNIVERSIDADE DE SÃO PAULO
FACULDADE DE ODONTOLOGIA DE BAURU

LORENA VILANOVA FREITAS DE SOUZA

Comparison of dentoalveolar, skeletal and soft tissue changes of the treatment of Class II malocclusion with three different intraoral distalization systems: Jones jig, Distal jet and First Class

Comparação das alterações dentoalveolares, esqueléticas e de tecido mole no tratamento da má oclusão de Classe II com três diferentes sistemas de distalização intrabucal: Jones jig, Distal jet e First Class

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Orientador: Prof. Dr. José Fernando Castanha Henriques

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ABSTRACT

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Comparison of dentoalveolar, skeletal and soft tissue changes of the treatment of Class II malocclusion with three different intraoral distalization systems: Jones jig, Distal jet and First Class

Introduction: This study aimed to cephalometrically compare the dentolalveolar, skeletal and soft tissue changes caused by Jones jig, Distal jet and First Class appliances. **Methods:** The sample included 71 patients divided into three groups. G1 (n=30; 16 male, 14 female, with a mean age of 13.17 years) was treated with Jones jig for 0.8 years. G2 (n=25; 8 male, 17 female, with a mean age of 12.57 years) was treated with Distal jet for 1.06 years. G3 (n=16; 6 male, 10 female, with a mean age of 12.84 years) was treated with First Class for 0.69 years. Intergroup treatment changes comparisons were performed using one-way ANOVA followed by Tukey tests. **Results:** Intergroup comparisons showed significantly greater maxillary premolar mesial angulation and first molar distal angulation in G1. The maxillary first molars presented smaller distal angulation in G2. G3 presented significantly smaller first premolar mesialization compared to G1 and smaller incisor protrusion and less overjet change compared to G2. Treatment time was significantly smaller in G3. **Conclusion:** All appliances corrected the Class II molar relationship. The Distal jet group produced smaller distal angulation. First Class appliance seems to produce less anchorage loss and shorter treatment time.

Key words: Orthodontics. Angle Class II Malocclusion. Cephalometry.

RESUMO

RESUMO

Comparação das alterações dentoalveolares, esqueléticas e de tecido mole no tratamento da má oclusão de Classe II com três diferentes sistemas de distalização intrabucal: Jones jig, Distal jet e First Class

Introdução: Este estudo comparou cefalometricamente as alterações dentárias, esqueléticas e de tecido mole provocadas pelo Jones jig, Distal jet e First Class que apresentam um sistema de força por vestibular, por palatino e por ambos os lados, respectivamente. **Métodos:** Foram avaliados 71 pacientes divididos em três grupos. G1 (n=30; 16 homens, 14 mulheres, idade inicial de 13.17 anos) foi tratado com o aparelho Jones jig durante 0.8 anos. G2 (n=25; 8 homens, 17 mulheres, idade média inicial de 12.57 anos) foi tratado com o aparelho Distal jet durante 1.06 anos. G3 (n=16; 6 homens, 10 mulheres, idade média inicial de 12.84 anos) foi tratado com o aparelho First Class durante 0.69 anos. Para comparar as alterações entre os grupos utilizou-se o ANOVA a um critério seguido do teste Tukey. **Resultados:** G1 apresentou significativamente maior angulação mesial dos pré-molares e distal do primeiro molar superior. G2 demonstrou menor angulação distal do primeiro molar superior em relação aos outros grupos. G3 apresentou menor mesialização dos primeiros pré-molares em relação a G1 e menor protrusão dos incisivos com consequente menor aumento da sobressaliência em relação a G2. O tempo de tratamento foi significativamente menor em G3. **Conclusão:** Todos os grupos foram eficientes na correção da relação molar. Distal jet produz menor angulação distal do primeiro molar superior. First Class parece produzir menor movimento mesial dos dentes de ancoragem e menor tempo de tratamento.

Palavras-chave: Ortodontia. Má oclusão de Angle Classe II. Cefalometria.

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1 INTRODUCTION

1 INTRODUCTION

Class II malocclusion is a very common clinical problem in orthodontics. Various non-extraction protocols for maxillary molar distalization have been described to correct Class II malocclusion. Resolving molar relationship by distal movement of maxillary molars may be indicated for patients with maxillary dentoalveolar protrusion or moderate dental crowding and minor skeletal discrepancies.(RUNGE; MARTIN; BUKAI, 1999)

Various concepts, biomechanics, and appliances have been routinely used to produce distal movement of maxillary molars. The most traditional method is the Kloehn headgear.(KLOEHN, 1961) It offers the possibility of orthopedic and orthodontic changes, but the major disadvantage of an extraoral method is the esthetical concern and the need of patient cooperation during treatment. Similarly, removable appliances and intermaxillary elastics require considerable patient compliance for treatment success. For this reason, the development of intraoral fixed appliances that minimize the need for patient cooperation provides a more predictable treatment results.(NANDA; KIERL, 1992; MCSHERRY; BRADLEY, 2000; BOLLA et al., 2002)

These intraoral devices consist schematically of an anchorage unit, usually an acrylic Nance button attached to premolars or deciduous molars, and an active unit. Several active units for distal movement have been proposed, including repelling magnets,(GIANELLY; VAITAA; THOMAS, 1989) superelastic nickel-titanium archwires,(LOCATELLI, 1992) coil springs on continuous archwire or on sectional archwire,(JONES; WHITE, 1992; CARANO; TESTA; SICILIANI, 1996) springs in beta titanium alloy,(HILGERS, 1992) and vestibular screws combined with palatal nickel-titanium coil springs.(FORTINI et al., 2004) The principal difference can be found in the material and the type of the force application of the active components.

In the Jones jig appliance the nickel-titanium coil springs are on a sectional arch that is fitted to buccal tubes of the molars. During distalization, a modified Nance button is attached to the first premolars, second premolars or deciduous second molars.(JONES; WHITE, 1992)

The distal jet has an active coil spring that is located in the palatal side. Two tubes incorporated bilaterally into the Nance button are the end points to the open nickel-titanium coil springs which deliver a distalization force to the tubes located palatally on the maxillary molar bands.(CARANO; TESTA; SICILIANI, 1996)

The First Class appliance may be considered as a more complete design. A screw fitted buccally to the molar tubes and premolars is used as the distalizing component. Additionally, nickel-titanium springs are fitted palatally counteracting any rotational movement. The Nance button has a butterfly shaped design fitted to premolar and to the molar bands.(FORTINI et al., 2004)

Previous studies have shown that all appliances successfully achieve maxillary molar distalization. However, treatment success must not be considered exclusively evaluating the space gained between the first molar and second premolar. Side effects have to be considered in order to obtain more objective evaluations of the appliances efficiency. The desired body movement of the maxillary first molar may be subjected to undesirable effects depending on the distal force applied, which may result in tipping, intrusion, and extrusion of the molars.(KINZINGER; EREN; DIEDRICH, 2008)

Some authors have investigated the dentoalveolar and skeletal changes of these appliances, however, no previous studies directly compared treatment changes between them. Therefore, the purpose of this study was to compare by cephalometric analysis the dentoalveolar, skeletal and soft tissue effects of the Jones jig, Distal jet and First Class appliances used for maxillary molar distalization in Class II malocclusion patients.

2 ARTICLE

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The article presented in this Dissertation was formatted according to the American Journal of Orthodontics and Dentofacial Orthopedics instructions and guidelines for article submission.

COMPARISON OF DENTOALVEOLAR, SKELETAL AND SOFT TISSUE CHANGES OF THE TREATMENT OF CLASS II MALOCCLUSION WITH THREE DIFFERENT INTRABUCAL DISTALIZATION SYSTEMS: JONES JIG, DISTAL JET AND FIRST CLASS

ABSTRACT

Introduction: This study aimed to cephalometrically compare the dentolalveolar, skeletal and soft tissue changes caused by Jones jig, Distal jet and First Class appliances. **Methods:** The sample included 71 patients divided into three groups. G1 (n=30; 16 male, 14 female, with a mean age of 13.17 years) was treated with Jones jig for 0.8 years. G2 (n=25; 8 male, 17 female, with a mean age of 12.57 years) was treated with Distal jet for 1.06 years. G3 (n=16; 6 male, 10 female, with a mean age of 12.84 years) was treated with First Class for 0.69 years. Intergroup treatment changes comparisons were performed using one-way ANOVA followed by Tukey tests. **Results:** Intergroup comparisons showed significantly greater maxillary premolar mesial angulation and first molar distal angulation in G1. The maxillary first molars presented smaller distal angulation in G2. G3 presented significantly smaller first premolar mesialization compared to G1 and smaller incisor protrusion and less overjet change compared to G2. Treatment time was significantly smaller in G3. **Conclusion:** All appliances corrected the Class II molar relationship. The Distal jet group produced smaller distal angulation. First Class appliance seems to produce less anchorage loss and shorter treatment time.

Key words: Orthodontics. Angle Class II Malocclusion. Cephalometry.

INTRODUCTION

Distalization of maxillary molars is used to correct Class II malocclusion by non-extraction treatment protocol. It is indicated for patients with discrepancy between tooth size and arch length in the maxillary arch and minor skeletal discrepancies.[1] Headgear[2] and Wilson maxillary bimetric distalizing arch system[3] have been used widely in the past, however these distalizing appliances require patient compliance to achieve molar distal movement. Protocols that reduce patient compliance may produce more predictable results being more effective.[4-6]

Several fixed and intraoral appliances for maxillary molars distalization have been proposed as an alternative to reduce the need for patient cooperation. Most of these systems consist of an anchorage unit, usually an acrylic Nance button, and an active unit. The active components can be repelling magnets,[7] superelastic nickel-titanium archwires,[8] coil springs on continuous archwire or on sectional archwire,[9,10] springs in beta titanium alloy,[11] and vestibular screws combined with palatal nickel-titanium coil springs.[12]

These intraoral distalizers are practical resources for Class II molar relationship correction in a short period of time.[10,13] The amount and type of maxillary molar movement and subsequent side effects may be directly related to the biomechanic and characteristics of the appliance. The Jones jig is a buccal distalization appliance while the Distal jet applies a palatal distalization force. The Distal jet has been reported some advantages as the ability for bodily movement of the maxillary molars toward distal because the distalizing force is closer to the level of the molar center of resistance, hence the moment of the force is smaller.[10] Most recently, the First Class was proposed as an intraoral device that has a palatal and buccal force system.[12]

Some authors have investigated the dentoalveolar and skeletal changes of these appliances, however no previous studies directly compared treatment changes between them. Therefore, the purpose of this study was to compare by cephalometric analysis the dentoalveolar, skeletal and soft tissue effects of the Jones jig, Distal jet and First Class appliances used for maxillary molar distalization in Class II malocclusion patients.

MATERIAL AND METHODS

The present study was approved by the ethics in research committee of Bauru Dental School, University of São Paulo, Brazil (protocol number: 54857516.0.0000.5417).

Sample size calculation was performed based on an alpha level of significance of 5% and beta of 10% to achieve a power of 90% of the test, to detect a mean difference of 1.8 mm between the groups, with a standard deviation of 1.5 mm in the amount of molar distalization (Mx6-PTV variable), according to a previous study.[14]

The power analysis showed that were needed a minimum of 16 patients in each group to detect clinically meaningful differences of the tooth movements between the groups.

Sample characteristics

The selection criteria were that the patients presented a minimum of ¼ cusp Class II molar relationship,[15] all permanent teeth up to the first molars erupted, no severe mandibular crowding, no crossbite, no anterior open bite, no agenesis, supernumerary or lost teeth and no previous orthodontic treatment. The sample consisted of 71 patients divided into 3 groups.

The Jones jig group (Group 1) comprised 30 subjects (16 male, 14 female) at an initial mean age of 13.17 $\pm$ 1.24 years old. The nickel-titanium coil spring was activated 5 mm every 4 weeks to deliver 125g of force. A Nance button was used as anchorage.

The Distal jet group (Group 2) comprised 25 subjects (8 male, 17 female) at an initial mean age of 12.57 $\pm$ 1.43 years old. Bands were fitted on the maxillary second premolars and first molars. A Nance button was used as anchorage attached to the second premolar. For patients with erupted second molars 240g of force were applied and 180g were used in those without erupted second molars.[4] The appliance was reactivated once a month in the same manner.

The First Class group (Group 3) comprised 16 subjects (6 male, 10 female) at an initial mean age of 12.84 $\pm$ 1.31 years old. The First Class consisted of buccally positioned activation screws (10 mm long) that were soldered to the first molar bands and seated into closed rings welded to the second premolar bands, two 0.010x0.045-in palatally positioned open nickel-titanium coil springs (10 mm long) and a large modified Nance butterfly shaped button. The appliance was activated by turning the buccally positioned screws a quarter turn in a counterclockwise direction once a day, widening of 0.1 mm per day.[12]

In all groups, Class II molar relationship was corrected.

Cephalometric evaluation

Cephalograms of all patients were taken before (T1) and after molar distalization (T2). They were analyzed by the software Dentofacial Planner 7.02 (Dentofacial Planner, Toronto, Ontario, Canada). The software corrected the magnification factor of the radiographic images that varied between 6% and 9.8%. A total of 30 landmarks were defined on each cephalogram. Bilateral structures of interest were averaged. The cephalometric variables are described in Figs. 1 to 3.

Error study

Forty-two cephalograms were randomly selected and retraced by the same examiner (L.V.F.S.) after a month interval. The random errors were evaluated with Dahlberg's formula.[16] The systematic errors were estimated with dependent t tests at $P<0.05$.

Statistical analyses

All variables were evaluated by Kolmogorov-Smirnov normality tests. Intergroup comparability regarding to sex, Class II malocclusion severity and erupted maxillary second molars were evaluated with Chi-square tests.

One-way Analysis of Variance (ANOVA), followed by Tukey tests were used for intergroup comparisons of initial and final ages, treatment time, cephalometric statuses at the pretretament and treatment changes.

All statistical analyses were performed with Statistica software (Statistica for Windows, version 6.0, Statsoft, Tulsa, Okla). The results were considered significant at $P<0.05$

RESULTS

The random errors varied from 0.5mm to 1.18mm and from 0.52 to 2.80 degrees and only one variable demonstrated significant systematic error (Table II).

The groups were comparable regarding sex distribution, Class II malocclusion severity, erupted maxillary second molars and initial mean ages, allowing direct comparison between groups (Tables III to VI). G3 presented shorter treatment time (Table VI).

At pretreatment, First Class group had a significantly greater ANB angle, maxillary length and maxillary incisors protrusion. First premolars presented progressively greater mesial angulation in G3, G2 and G1, respectively (Table VII).

Intergroup changes comparison showed significantly greater maxillary premolars mesial angulation and first molar distal angulation in G1. Maxillary first molar distal angulation was smaller in G2 compared to the other groups. First premolars mesial movement was significantly smaller in G3 compared to G1. Incisor protrusion and overjet change was smaller in G3 compared to G2. The maxillary first premolars extrusion was greater in G2 in comparison to G1 and second molars extrusion was significantly greater in G2 in comparison to the other groups (Table VIII).

DISCUSSION

The number of subjects included in each group was similar to previous studies that used samples ranging between 13 and 26 subjects.[1,4,13,17-21]

The groups were quite similar at the pretreatment stage. The more accentuated Class II maxillomandibular relationship in the First Class Group was probably due to the greater maxillary length that this group presented. Consequently the maxillary incisor also presented greater protrusion in this group. The maxillary first premolars angulation was progressively greater in First Class, Distal jet and Jones jig group (Table VII). However those characteristics should not interfere with the results of the treatment changes comparison, since it does not interfere on performance of the appliance.

The significantly longer treatment time in the Distal jet group was greater than other reports.[4,20,22] Probably because it was calculated using the dates established on the radiographs and the pretreatment ones were taken several weeks before the initiation of treatment.[4,14]

Skeletal changes

Changes of the skeletal variables were similar between groups. There was a slight increase of lower anterior facial high. However, these treatment protocols do not promote significant changes on skeletal structures, as previously demonstrated (Table VIII).[14,23,24]

Soft tissue changes

Since maxillary incisor changes were similar in all groups, there were not statistically significant differences in the nasolabial angle (Table VIII). It has been reported in other studies, as well.[25 1358,26]

Dentoalveolar changes

The premolars angulations were progressively greater in the Distal jet, First Class and Jones jig group. Significant greater premolars mesial angulation in Jones jig group has been reported in previous studies as result of anchorage loss.[1,14,23,27-29]

The maxillary first premolars showed a significant smaller mesial angulation in the Distal jet group compared with the other groups; even though it was the anchorage unit in this appliance.[20] It could be explained because of the appliance design and by its biomechanics.[30]

In contrast with the other groups, the Distal jet appliance showed a distal angulation of maxillary second premolar. Examination of dental casts in a previous study demonstrated similar results.[4] Since the anchorage unit was attached to the first premolars, it could be explained due to the traction from the transeptal fibers that could cause a distal movement of the second premolars following the maxillary first molars behavior.[31]

The Distal jet group presented smaller distal angulation of maxillary first molars when compared with Jones jig and First Class groups. According to other studies, it could be explained due to the geometry of the appliance. The line of action of the distal force was applied on the palatal side superiorly to the first molar crown. It produced forces parallel to the level of the center of resistance of the tooth resulting in molar body movement.[4,10,30]

Commonly, amount of anchorage loss is described by the mesial movement of premolars and anterior teeth. The First Class group showed significant smaller maxillary incisor protrusion compared to the Distal jet. This difference could be explained by the two additional teeth used as anchorage in First Class group, since the modified Nance button is attached to maxillary second premolars. According to other study with First Class appliance, it can be attributed to the modified larger Nance button.[32] Similarly, maxillary first premolar showed significant smaller mesialization in the First Class group when compared to Jones jig. These results are in accordance with previous studies.[12]

The Distal jet group presented significant smaller mesialization of second premolars, which was expected since these teeth are not the anchorage unit. However, this group presented greater extrusion of maxillary first premolar when compared with the Jones jig, as previously reported.[4]

According to some authors, the distal angulation of maxillary molars produces molar intrusion.[19,33] This could explain the greater intrusive values observed for the maxillary molars in the Jones jig group. On the other hand, the Distal jet group presented a greater vertical development of maxillary second molars compared to the other groups, similar with the results reported in a previous study.[4] Additionally, the Distal jet group presented a greater treatment time, which probably resulted in greater number of complete erupted maxillary second molars at the end of the distalization phase. It could explain the greater value of second molars extrusion in this group.

The overjet increased significantly more in the Distal jet group compared to First Class group. It was expected since these groups presented the greatest and smallest incisor protrusion, respectively.

Independent of the appliance used for maxillary molar distalization, orthodontic mechanics should be completed in order to maintain the distalization results and to correct the side effects with fixed appliances. In general terms, maxillary molar distalization could be achieve with the three type of appliances used in this study. The chosen distalization mechanics should depend on the individual maxillary molar characteristic presented by the patients.

CONCLUSIONS

Based on the results of this study, it could be concluded that:

- All appliances efficiently corrected the molar relationship by means of dentoalveolar changes with some degree of undesirable effects.
- The Distal jet group presented significantly smaller molar distal angulation. Therefore, it seems to produce greater distal molar body movement.
- First Class appliance seems to produce less anchorage loss and shorter treatment time compared to Jones jig and Distal jet.

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FIGURE CAPTIONS

Fig. 1. Skeletal and soft tissue variables. A. SNA; B.SNB; C. ANB; D.ANS-Me; E. A-PTV; F. B-PTV; G. FMA; H. SN.GOGN; I. SN.GOME; J. SN.Occlusal plane; K. Nasolabial angle;

Fig. 2. Angular dental variables. A. Mx1.SN; B. Mx4.SN; C. Mx5.SN; D. Mx6.SN; E. Mx7.SN; F. MD6.MP

Fig. 3. Linear dental variables. A. Mx1-PTV; B. Mx4-PTV; C. Mx5-PTV; D. Mx6-PTV; E. Mx7-PTV; F. MD6-PTV; G. Mx1-PP; H. Mx4-PP; I. Mx5-PP; J.Mx6-PP; K. Mx7-PP; L. Overjet; M. Overbite

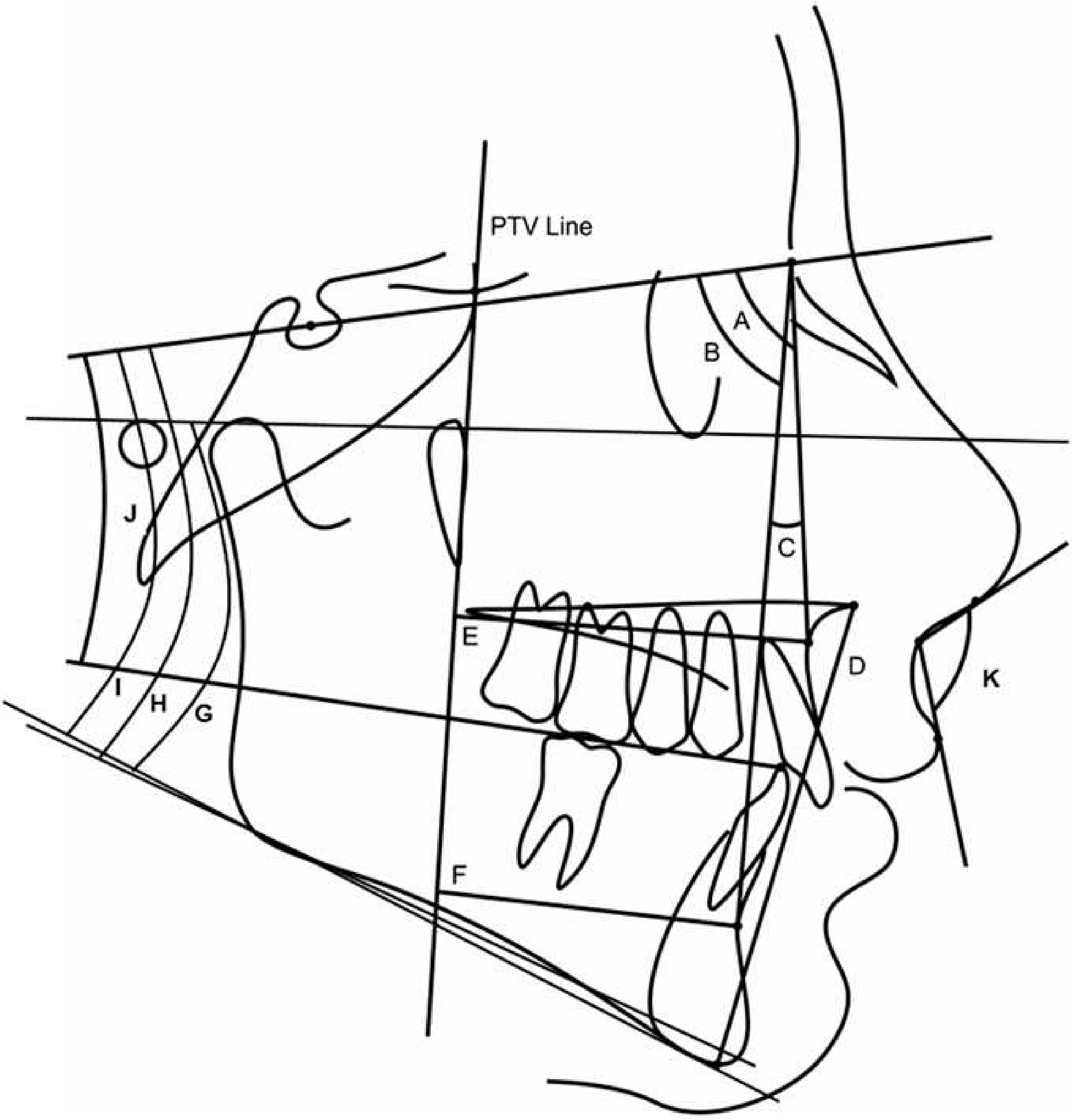

Fig. 1

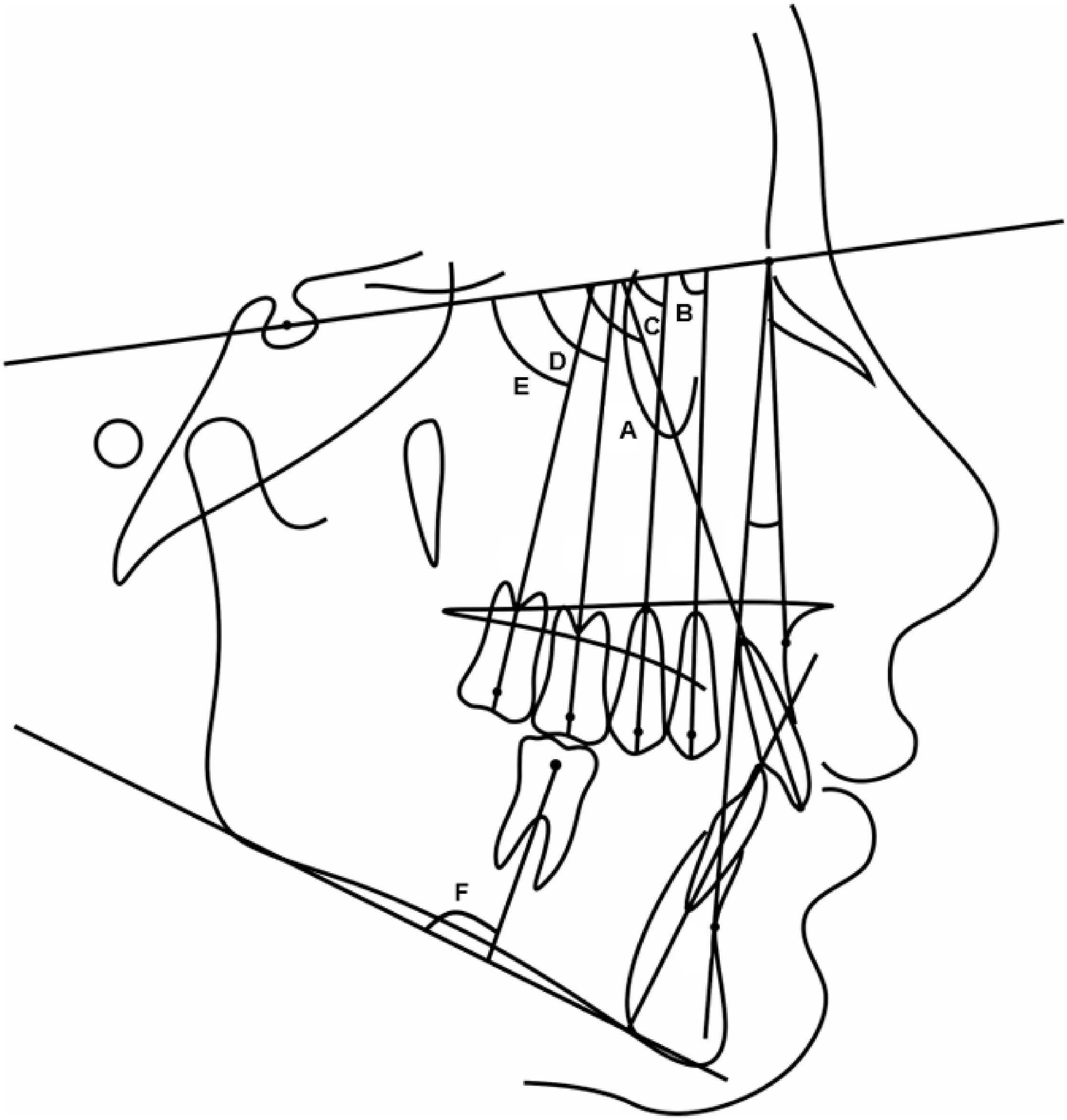

Fig.2

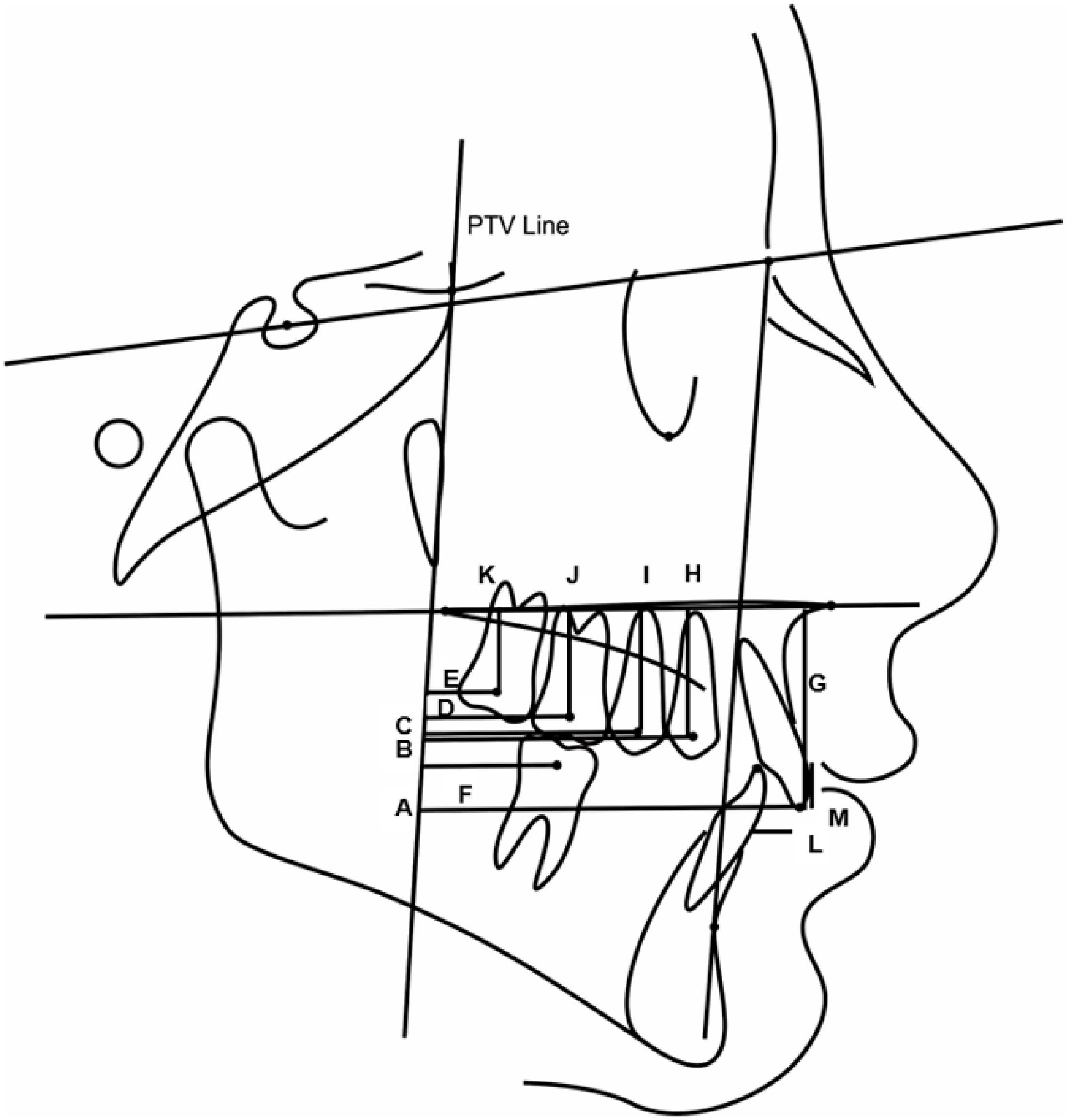

Fig. 3

Table I. Cephalometric measurements

SNA (°)	Sella-Nasion to A point angle
PTV-A (mm)	Linear distance from A point to the pterygoid vertical plane (PTV)
SNB (°)	Sella-Nasion to B point angle
PTV-B (mm)	Linear distance from B point to PTV
ANB (°)	Angle formed by the intersection of NA line and NB line
FMA (°)	Angle formed by the intersection of Frankfurt plane and Go-Me
SN.OP	Angle formed by the intersection of SN line and Occlusal plane
SN.GoGn	Angle formed by the intersection of SN line and Go-Gn
SN.GoMe	Angle formed by the intersection of SN line and Go-Me
ANS-Me (mm)	Linear measurement from Anterior Nasal Spine to Menton (Lower Anterior Face Height)
Mx1.SN (°)	Angle formed by the intersection of the long axis of the maxillary central incisor and the SN line
Mx1-PTV (mm)	Linear distance from the tip of the maxillary central incisor perpendicular to the PTV
Mx1.NA (°)	Angle between maxillary incisor to NA line
Mx1-NA (mm)	Linear distance from maxillary incisor to NA line
Mx4.SN (°)	Angle formed by the intersection of the long axis of the maxillary first premolar and the SN line
Mx4-PTV (mm)	Linear distance from the centroid of the maxillary first premolar perpendicular to the PTV
Mx5.SN (°)	Angle formed by the intersection of the long axis of the maxillary second premolar and the SN line
Mx5-PTV (mm)	Linear distance from the centroid of the maxillary second premolar perpendicular to the PTV
Mx6.SN (°)	Angle formed by the intersection of the long axis of the maxillary first molar and the SN line. The first molar long axis was determined by a line passing through the central point between the 2 root apices and the centroid point
Mx6-PTV (mm)	Linear distance from the centroid of the maxillary first molar perpendicular to the PTV
Mx7.SN (°)	Angle formed by the intersection of the long axis of the maxillary second molar and the SN line. The second molar long axis was determined by a line passing through the central point between the 2 root apices and the centroid point
Mx7-PTV (mm)	Linear distance from the centroid of the maxillary second molar perpendicular to the PTV
Mx1-PP (mm)	Maxillary incisor long axis to palatal plane angle
Mx4-PP (mm)	Mean perpendicular distance between maxillary first premolar and palatal plane
Mx5-PP (mm)	Mean perpendicular distance between maxillary second premolar and palatal plane
Mx6-PP (mm)	Mean perpendicular distance between maxillary first molar and palatal plane
Mx7-PP (mm)	Mean perpendicular distance between maxillary second molar and palatal plane
Nasolabial Angle (°)	Angle formed by the intersection of Cm-Sn and Sn-Ls
Overjet (mm)	Linear horizontal distance from incisal of maxillary incisor to incisal of mandibular incisor
Overbite (mm)	Linear vertical distance from incisal of maxillary incisor to incisal of mandibular incisor

Table II - Results of random and systematic errors between the first and second measurements (Dahlberg and t test)

Variables	1ª Measurement		2ª Measurement		Dahlberg	P
	Mean	SD	Mean	SD		
SNA	84.543	4.693	84.471	4.764	0.76	0.671
SNB	79.357	3.589	79.381	3.468	0.74	0.885
ANB	5.188	2.123	5.079	2.141	0.52	0.342
A-PTV	49.44	3.383	49.179	3.206	0.53	0.022*
B-PTV	46.74	4.374	46.671	4.189	1.15	0.786
FMA	27.133	6.111	27.143	5.961	1.01	0.958
SN.GOGN	30.219	4.646	30.331	4.359	0.92	0.583
SN.GOME	26.057	6.688	25.969	6.736	0.93	0.668
LAFH	63.031	6.853	62.569	6.56	1.18	0.071
NLA	99.188	9.6	98.776	8.982	2.8	0.508
SN.OP	9.721	4.57	9.643	4.312	1.02	0.729
MX1.SN	111.755	6.547	111.519	6.654	0.83	0.198
MX4.SN	91.64	9.392	91.274	9.785	1.46	0.256
MX5.SN	82.883	8.451	82.983	8.619	1.09	0.681
MX6.SN	69.214	6.468	69.683	5.954	1.52	0.204
MX7.SN	61.955	7.095	62.769	7.225	1.37	0.006
MX1-PTV	57.283	4.85	57.007	4.571	0.87	0.15
MX4-PTV	38.845	3.799	38.51	3.858	0.77	0.431
MX5-PTV	31.726	4.09	31.552	3.849	1.02	0.439
MX6-PTV	21.136	3.501	21.314	3.337	1.04	0.439
MX7-PTV	11.717	3.193	11.979	2.973	0.95	0.211
MX1-PP	26.869	3.039	26.938	2.909	0.5	0.532
MX4-PP	20.421	2.996	20.3	2.57	0.75	0.464
MX5-PP	19.812	2.904	19.814	2.651	0.66	0.987
MX6-PP	17.562	2.99	17.636	2.647	0.61	0.583
MX7-PP	13.229	3.795	13.045	3.778	0.87	0.341
MD6.MP	79	4.341	79.269	5.04	1.36	0.355
MD6-PTV	22.086	3.499	21.838	3.517	1.14	0.326
OVERJET	6.44	2.349	6.11	2.07	0.86	0.076
OVERBITE	3.648	1.541	3.84	1.385	0.54	0.1

*Statistically significant at $P<0.05$.

Table III - Intergroup sex distribution comparison (Chi-square test)

Group \ Sex	Male	Female	Total
1 – Jones Jig	16 (47%)	14 (53%)	30
2 – Distal Jet	8 (32%)	17 (68%)	25
3 – First Class	6 (37.5%)	10 (62.5%)	16
Total	30	41	71

X^2= 2.73 Df=2 P=0.254

Table IV - Intergroup Class II malocclusion severity comparison (Chi-square test)

Severity / Group	¼ cusp Class II	½ cusp Class II	¾ cusp Class II	Full cusp Class II	Total
1 – Jones Jig	7 (23%)	14 (47%)	5 (17%)	4 (13%)	30
2 – Distal Jet	6 (24%)	16 (64%)	3 (12%)	0 (0%)	25
3 – First Class	6 (37.5%)	8 (50%)	1 (6.25%)	1 (6.25%)	16
Total	19	38	9	5	71

X^2=6.07 Df= 6 P=0.414

Table V – Intergroup erupted maxillary second molars comparison (Chi-square test)

Second molars / Group	Erupted	Unerupted	Total
1 – Jones Jig	24 (80%)	6 (20%)	30
2 – Distal Jet	17(68%)	8 (32%)	25
3 – First Class	12 (75%)	4 (25%)	16
Total	53 (74.7)%	18 (25.3%)	71

$X^2=1.03$ Df=2 P=0.596

Table VI - Intergroup comparison of initial and final ages. and treatment time (ANOVA)

Variable (years)	1-Jones jig		2-Distal Jet		3-First Class		P
	Mean	SD	Mean	SD	Mean	SD	
Initial age	13.17 ^{A}	1.24	12.57 ^{A}	1.29	12.84 ^{A}	1.31	0.254
Final age	14.04 ^{A}	1.29	13.64^{A}	1.60	13.53 ^{A}	1.38	0.421
Treatment time	0.81 ^{AB}	0.33	1.06 ^{A}	0.42	0.69 ^{B}	0.22	0.005*

*Statistically significant at P<0.05.

Table VII - Pretreatment intergroup cephalometric comparison (ANOVA followed by Tukey tests)

Variables	Group 1 (Jones jig n=30)		Group 2 (Distal Jet n=25)		Group 3 (First Class n=16)		P
	Mean	SD	Mean	SD	Mean	SD	
Maxillary and mandibular skeletal							
SNA	83.97^{A}	3.32	82.22^{A}	5.28	85.39^{A}	4.20	0.292
SNB	80.20^{A}	3.12	79.02^{A}	3.90	79.05^{A}	3.85	0.401
ANB	3.77^{A}	2.30	4.48^{A}	2.87	6.34^{B}	2.05	0.004*
A-PTV	48.10^{A}	3.48	48.13^{A}	2.49	50.90^{B}	3.18	0.009*
B-PTV	46.54^{A}	5.11	46.92^{AB}	3.31	47.76^{B}	5.99	0.712
Vertical skeletal							
FMA	26.74^{A}	5.00	26.83^{A}	3.64	27.35^{A}	5.09	0.908
SN.GOGN	30.31^{A}	4.30	30.35^{A}	3.85	30.98^{A}	4.49	0.858
SN.GOME	26.05^{A}	5.71	25.69^{A}	4.41	25.87^{A}	5.41	0.967
LAFH	61.81^{A}	5.12	61.43^{A}	5.09	63.64^{A}	6.23	0.414
SN.OP	9.93^{A}	4.64	11.27^{A}	3.71	11.35^{A}	4.05	0.402
Soft tissue							
NLA	103.06^{A}	11.30	99.56^{A}	14.69	101.24^{A}	7.50	0.559
Maxillary dentoalveolar							
MX1.SN	109.60^{A}	5.08	107.30^{A}	6.41	110.11^{A}	7.49	0.266
MX4.SN	88.84^{A}	4.99	85.66^{B}	5.19	84.35^{c}	6.12	0.015*
MX5.SN	80.41^{A}	4.85	79.16^{A}	4.80	77.76^{A}	5.64	0.234
MX6.SN	71.89^{A}	5.33	70.97^{A}	5.23	70.83^{A}	4.50	0.728
MX7.SN	62.82^{A}	6.52	63.16^{A}	4.94	63.93^{A}	5.59	0.825
MX1-PTV	55.32^{A}	4.81	55.81^{A}	3.57	59.03^{B}	4.33	0.020*
MX4-PTV	36.32^{A}	3.69	36.76^{A}	2.68	38.83^{A}	3.99	0.062
MX5-PTV	29.70^{A}	3.48	29.82^{A}	2.64	31.90^{A}	40.03	0.086
MX6-PTV	21.32^{A}	3.47	21.37^{A}	2.80	23.58^{A}	3.90	0.071
MX7-PTV	11.99^{A}	3.04	12.19^{A}	2.40	13.87^{A}	3.36	0.100
MX1-PP	27.00^{A}	2.40	27.08^{A}	2.75	27.08^{A}	2.53	0.991
MX4-PP	19.87^{A}	2.20	20.29^{A}	2.25	20.16^{A}	2.41	0.777
MX5-PP	19.24^{A}	2..04	19.50^{A}	2.12	19.34^{A}	2.58	0.913
MX6-PP	17.29^{A}	2.36	17.79^{A}	2.24	18.13^{A}	2.32	0.469
MX7-PP	12.50^{A}	3.66	12.88^{A}	3.55	13.53^{A}	3.41	0.646
Mandibular dentoalveolar							
MD6.MP	78.94^{A}	4.28	78.60^{A}	4.11	78.93^{A}	4.47	0.951
MD6-PTV	21.32^{A}	3.47	21.37^{A}	2.80	23.58^{A}	3.90	0.128
Interdental							
OVERJET	4.84^{A}	1.66	5.25^{A}	1.57	6.12^{A}	2.47	0.088
OVERBITE	3.78^{A}	1.58	3.58^{A}	1.83	3.71^{A}	1.83	0.906

*Statistically significant at $P < 0.05$.

Table VIII - Intergroup treatment changes comparison (ANOVA followed by Tukey tests)

Variables	Group 1 (Jones jig n=30)		Group 2 (Distal jet n=25)		Group 3 (First Class n=16)		P
	Mean	SD	Mean	SD	Mean	SD	
Maxillary and mandibular skeletal							
SNA	0.22^{A}	0.96	0.45^{A}	1.20	0.06^{A}	1.11	0.516
SNB	0.21^{A}	0.70	0.16^{A}	1.39	0.16^{A}	1.04	0.978
ANB	0.00^{A}	0.90	0.29^{A}	0.66	-0.09^{A}	0.89	0.278
A-PTV	0.21^{A}	0.62	0.26^{A}	0.68	-0.10^{A}	0.76	0.208
B-PTV	0.18^{A}	0.89	0.14^{A}	1.05	0.59^{A}	2.08	0.512
Vertical skeletal							
FMA	0.09^{A}	1.13	0.37^{A}	2.03	0.39^{A}	1.86	0.774
SN.GOGN	0.28^{A}	1.86	0.34^{A}	1.45	-0.51^{A}	1.34	0.201
SN.GOME	0.40^{A}	1.91	0.23^{A}	2.02	0.81^{A}	2.23	0.668
LAFH	1.67^{A}	1.17	2.45^{A}	2.23	1.40^{A}	1.28	0.094
SN.OP	0.66^{A}	2.31	0.73^{A}	2.11	-0.10^{A}	1.37	0.402
Soft tissue							
NLA	-3.44^{A}	5.42	-0.38^{A}	5.41	-2.08^{A}	5.76	0.130
Maxillary dentoalveolar							
MX1.SN	6.08^{A}	3.86	5.32^{A}	4.24	5.10^{A}	2.63	0.640
MX4.SN	14.65^{A}	6.31	0.97^{B}	3.16	8.43^{C}	3.99	0.000*
MX5.SN	12.77^{A}	5.78	-2.12^{B}	3.71	3.20^{c}	3.94	0.000*
MX6.SN	-7.73^{A}	4.28	-2.14^{B}	5.09	-6.05^{A}	3.76	0.000*
MX7.SN	-6.67^{A}	6.09	-6.19^{A}	5.04	-6.27^{A}	4.39	0.940
MX1-PTV	2.09^{AB}	1.88	2.56^{A}	2.24	0.74^{B}	1.39	0.015*
MX4-PTV	3.76^{A}	1.46	3.37^{AB}	1.67	2.27^{B}	1.47	0.010*
MX5-PTV	3.87^{A}	1.34	1.24^{B}	1.26	2.25^{C}	1.40	0.000*
MX6-PTV	-1.82^{A}	1.33	-1.52^{A}	1.51	-2.48^{A}	0.93	0.080
MX7-PTV	-1.40^{A}	1.41	-1.95^{A}	1.33	-2.09^{A}	1.43	0.190
MX1-PP	-0.11^{A}	1.11	0.36^{A}	1.08	0.30^{A}	0.96	0.210
MX4-PP	0.11^{A}	0.60	0.90^{B}	0.77	0.56^{AB}	1.32	0.004*
MX5-PP	0.48^{A}	0.81	0.18^{A}	0.76	0.80^{A}	1.57	0.161
MX6-PP	-0.61^{A}	0.97	0.19^{A}	1.35	-0.22^{A}	1.47	0.061
MX7-PP	-0.02^{A}	1.16	1.17^{B}	1.41	0.16^{A}	1.40	0.003*
Mandibular dentoalveolar							
MD6.MP	-0.45^{A}	2.35	0.40^{A}	3.33	-2.63^{A}	13.27	0.367
MD6-PTV	0.37^{A}	0.63	0.59^{A}	0.66	0.25^{A}	1.16	0.366
Interdental							
OVERJET	1.39^{AB}	1.28	1.79^{A}	1.67	0.68^{B}	0.84	0.046*
OVERBITE	-0.83^{A}	1.01	-0.80^{A}	1.04	-0.85^{A}	1.14	0.989

*Statistically significant at P <0.05.

3 DISCUSSION

3 DISCUSSION

Previous clinical studies and systematic reviews have investigated the changes resulted from the intraoral molar distalizers. However, the comparison between studies is limited in some degree because of the heterogeneity between them.(ANTONARAKIS; KILIARIDIS, 2008; KINZINGER; EREN; DIEDRICH, 2008) Although the results of this study are in accordance with the reported in literature, no previous studies directly compared treatment changes between three different systems of intraoral molar distalization.

This clinical retrospective study examined a sample of 71 treated patients in the same institution under the same orientation. The number of subjects included in each group was similar to previous studies.(RUNGE; MARTIN; BUKAI, 1999; HAYDAR; ÜNER, 2000; BOLLA et al., 2002; NISHII; KATADA; YAMAGUCHI, 2002) Only one examiner measured the cephalometric radiographs and the estimation of intraexaminer error of the method was undertaken.

The analysis of pretreatment showed that patients in all groups generally were not significantly different. Susceptibility bias occurs when the groups receive different treatment modalities based on the patients' characteristics at pretreatment.(CHIU; MCNAMARA; FRANCHI, 2005) In this study, the treatment decision with the Jones jig, Distal jet or First Class distalizers was performed without distinguish the patients´ initial characteristics. They were carefully assigned from the same selection criteria and were quite similar at pretreatment. It is one of the ways adopted in order to minimize the susceptibility bias when comparing different treatments.

In the present study maxillary second molar could be partially or completely erupted. The influence of second molars on the distal movement of the first molars remains a matter of controversy. When first molars move distally, they also move the second molars. Several authors showed that the second molars do not exercise a significant effect with relation to first molar distalization, tipping or anchorage loss.(MUSE; FILLMAN; MITCHELL, 1993; GHOSH; NANDA, 1996; BUSSICK; MCNAMARA, 2000; JOSEPH; BUTCHART, 2000; FLORES-MIR et al., 2012) A systematic review reported that the effect of maxillary second and third molar eruption on molar distalization appears to be minimal.(FLORES-MIR et al., 2012)

A limitation of this study was the lack of measurements on dental casts. This study used only two dimensional cephalometric headfilms for measuring the variables. The effects of molar rotation and arch width were not evaluated. Previous studies demonstrated some transverse changes during molar distalization.(BOLLA et al., 2002; MAVROPOULOS et al., 2005) It has been reported that the majority of patients with Class II malocclusion present a mesially rotated maxillary first molars around the palatal root.(LAMONS; HOLMES, 1961) By this condition the Jones jig appliance produces a favorable distal rotation around the palatal roots. However, this appliance also delivered some undesirable constriction of the maxillary first molars.(GHOSH; NANDA, 1996; BRICKMAN; SINHA; NANDA, 2000)

On the other hand, the Distal jet applies the distal force by the palatal side, which promotes a distal rotation of the lingual cusps of the maxillary first molars. Consequently, intermolar width increases. According to a previous study, this increase in width tends to maintain a proper transverse relationship between the maxillary and mandibular molars during distalization.(BOLLA et al., 2002) Additionally, the amount of maxillary first molar expansion and rotation could be modulated by individualizing the appliance construction.(BOWMAN, 2016)

Although some maxillary molar distal rotation of 0.9 degrees and a slight increase in the molar width were reported after the use of First Class appliance, they were not significant and could not have clinical implications.(PAPADOPOULOS; MELKOS; ATHANASIOU, 2010)

It seems that reducing the forces used for maxillary molar distalization has not been proven to be effective to reduce molar distal angulation. In this study, the Jones jig appliance used with a force of 125 g demonstrated similar anchorage loss and maxillary molar distal angulation when compared with the 200g of force used in the First Class appliance. Previous studies that evaluated the Jones jig appliance exerting 75g of distal force demonstrated similar results.(RUNGE; MARTIN; BUKAI, 1999; BRICKMAN; SINHA; NANDA, 2000; HAYDAR; ÜNER, 2000)

The anchorage unit consisted of a modified Nance button attached to the premolars. The findings indicate that this type of anchorage is insufficient to counteract the reciprocal forces against the Nance holding arch.(NGANTUNG; NANDA; BOWMAN, 2001; ANTONARAKIS; KILIARIDIS, 2008; FUDALEJ; ANTOSZEWSKA, 2011) When using this protocol, anchorage reinforcement is required to reduce the mesialization of the premolars and protrusion of the maxillary incisors. Unfortunately, headgear or elastics is compliance dependent.

Recently, alternative anchorage designs using skeletal anchorage devices have been described to reduce the distalization side effects and seems to be an efficient alternative for maxillary molar distalization.(DA COSTA GREC et al., 2013) Nonetheless, it is important to know the effects of the various distalization systems with or without skeletal anchorage in order to choose the ideal alternative depending on the individualized patient requirements.

4 CONCLUSION

4 CONCLUSION

Based on the results of this study, it could be concluded that:

- All appliances efficiently corrected the molar relationship by means of dentoalveolar changes with some degree of undesirable effects.
- The Distal jet group presented significantly smaller molar distal angulation. Therefore, it seems to produce greater distal molar body movement.
- First Class appliance seems to produce less anchorage loss and shorter treatment time compared to Jones jig and Distal jet.

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APPENDIX

APPENDIX A - DECLARATION OF EXCLUSIVE USE OF THE ARTICLE IN DISSERTATION/THESIS

We hereby declare that we are aware of the article “Comparison of dentoalveolar, skeletal and soft tissue changes of the treatment of Class II malocclusion with three different intraoral distalization systems: Jones jig, Distal jet and First Class” will be included in Dissertation of the student Lorena Vilanova Freitas de Souza and may not be used in other works of Graduate Programs at the Bauru School of Dentistry, University of São Paulo.

Bauru, December 2nd, 2016.

Lorena Vilanova Freitas de Souza
Author — Signature

José Fernando Castanha Henriques
Author — Signature

Author — Signature

Author — Signature

ANNEXES

ANNEX A. Ethics Committee approval, protocol number 54857516.0.0000.5417 (front).

FACULDADE DE ODONTOLOGIA DE BAURU-USP

PARECER CONSUBSTANCIADO DO CEP

DADOS DO PROJETO DE PESQUISA

Título da Pesquisa: COMPARAÇÃO DOS EFEITOS DENTOESQUELÉTICOS DO TRATAMENTO DA MÁ OCLUSÃO DE CLASSE II COM TRÊS DIFERENTES SISTEMAS DE DISTALIZAÇÃO INTRABUCAL: JONES JIG, DISTAL JET E FIRST CLASS

Pesquisador: LORENA VILANOVA FREITAS DE SOUZA

Área Temática:

Versão: 2

CAAE: 54857516.0.0000.5417

Instituição Proponente: Universidade de Sao Paulo

Patrocinador Principal: Financiamento Próprio

DADOS DO PARECER

Número do Parecer: 1.632.790

Apresentação do Projeto:

Idem ao parecer consubstanciado nº 1.512.429, emitido em 25 de Abril de 2016.

Objetivo da Pesquisa:

Idem ao parecer consubstanciado nº 1.512.429, emitido em 25 de Abril de 2016.

Avaliação dos Riscos e Benefícios:

Idem ao parecer consubstanciado nº 1.512.429, emitido em 25 de Abril de 2016.

Comentários e Considerações sobre a Pesquisa:

Idem ao parecer consubstanciado nº 1.512.429, emitido em 25 de Abril de 2016.

Considerações sobre os Termos de apresentação obrigatória:

Idem ao parecer consubstanciado nº 1.512.429, emitido em 25 de Abril de 2016.

Conclusões ou Pendências e Lista de Inadequações:

Considerando que as pendências foram regularizadas, conforme o solicitado no parecer consubstanciado nº 1.512.429, emitido em 25 de Abril de 2016, sou de parecer favorável à aprovação da pesquisa.

Endereço: DOUTOR OCTAVIO PINHEIRO BRISOLLA 75 QUADRA 9
Bairro: VILA NOVA CIDADE UNIVERSITARIA **CEP:** 17.012-901
UF: SP **Município:** BAURU
Telefone: (14)3235-8356 **Fax:** (14)3235-8356 **E-mail:** cep@fob.usp.br

ANNEX A. Ethics Committee approval, protocol number 54857516.0.0000.5417 (verso).

FACULDADE DE ODONTOLOGIA DE BAURU-USP

Continuação do Parecer: 1.632.790

Considerações Finais a critério do CEP:

Esse projeto foi considerado APROVADO na reunião ordinária do CEP de 15.06.2016, com base nas normas éticas da Resolução CNS 466/12. Ao término da pesquisa o CEP-FOB/USP exige a apresentação de relatório final. Os relatórios parciais deverão estar de acordo com o cronograma e/ou parecer emitido pelo CEP. Alterações na metodologia, título, inclusão ou exclusão de autores, cronograma e quaisquer outras mudanças que sejam significativas deverão ser previamente comunicadas a este CEP sob risco de não aprovação do relatório final. Quando da apresentação deste, deverão ser incluídos todos os TCLEs e/ou termos de doação assinados e rubricados, se pertinentes.

Este parecer foi elaborado baseado nos documentos abaixo relacionados:

Tipo Documento	Arquivo	Postagem	Autor	Situação
Informações Básicas do Projeto	PB_INFORMAÇÕES_BÁSICAS_DO_PROJETO_663535.pdf	24/05/2016 20:35:59		Aceito
Outros	Comunicado.pdf	24/05/2016 20:34:20	LORENA VILANOVA FREITAS DE SOUZA	Aceito
Outros	Autorizacao_retrospectivo.pdf	24/05/2016 20:31:59	LORENA VILANOVA FREITAS DE SOUZA	Aceito
Cronograma	Cronograma.pdf	23/05/2016 23:27:33	LORENA VILANOVA FREITAS DE SOUZA	Aceito
Projeto Detalhado / Brochura Investigador	Projeto.pdf	23/05/2016 23:27:04	LORENA VILANOVA FREITAS DE SOUZA	Aceito
Outros	DeclaracaoDeCompromisso.pdf	31/03/2016 15:11:57	LORENA VILANOVA FREITAS DE SOUZA	Aceito
Outros	Questionario.pdf	31/03/2016 15:09:03	LORENA VILANOVA FREITAS DE SOUZA	Aceito
Outros	Encaminhamento.pdf	31/03/2016 15:07:25	LORENA VILANOVA FREITAS DE SOUZA	Aceito
Outros	Uso_do_arquivo.pdf	24/02/2016 22:49:32	LORENA VILANOVA FREITAS DE SOUZA	Aceito
TCLE / Termos de Assentimento / Justificativa de Ausência	Dispensa_do_TCLE_e_TA.pdf	24/02/2016 22:43:06	LORENA VILANOVA FREITAS DE SOUZA	Aceito
Folha de Rosto	Folha_de_rosto.pdf	24/02/2016 22:42:22	LORENA VILANOVA FREITAS DE SOUZA	Aceito

Situação do Parecer:
Aprovado

Endereço: DOUTOR OCTAVIO PINHEIRO BRISOLLA 75 QUADRA 9
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ANNEX A. Ethics Committee approval, protocol number 54857516.0.0000.5417 (front).

FACULDADE DE ODONTOLOGIA DE BAURU-USP

Continuação do Parecer: 1.632.790

Necessita Apreciação da CONEP:
Não

BAURU, 12 de Julho de 2016

Assinado por:
Izabel Regina Fischer Rubira Bullen
(Coordenador)

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ANNEX B. Patient´s informed consent exoneration (front).

Universidade de São Paulo
Faculdade de Odontologia de Bauru

Departamento Odontopediatria, Ortodontia e Saúde Coletiva
Disciplina de Ortodontia

DISPENSA DE TERMO DE CONSENTIMENTO LIVRE E ESCLARECIDO E TERMO DE ASSENTIMENTO

Solicitamos ao Comitê de Ética em Pesquisa, FOB-USP, a dispensa do Termo de Consentimento Livre e Esclarecido e Termo de Assentimento, do projeto de **"Comparação dos efeitos dentoesqueléticos do tratamento da má oclusão de classe II com três diferentes sistemas de distalização intrabucal: Jones Jig, Distal Jet e First Class"** de autoria de *Lorena Vilanova Freitas de Souza* sob a orientação do *Prof. Dr. José Fernando Castanha Henriques*.

Tal solicitação justifica-se pelo fato da amostra ser retrospectiva. Os prontuários estão sob os cuidados da disciplina de Ortodontia do Departamento de Odontopediatria, Ortodontia e Saúde Coletiva. Estes prontuários são do acervo desde 1973, constituindo uma dificuldade o contato com os pacientes devido ao tempo decorrido desde o tratamento feito até a data presente. Vale ressaltar que os pacientes, quando atendidos da clínica de Ortodontia, assinam a "AUTORIZAÇÃO PARA DIAGNÓSTICO E/OU EXECUÇÃO DE TRATAMENTO ORTDÔNTICO" (modelo anexo) a qual aprova tanto a execução do tratamento quanto seu uso para "quaisquer fins de ensino e de divulgação em jornais e/ou revistas científicas do país e do exterior", desta forma aprova-se também o uso dos dados do seu prontuário para o ensino em pesquisas cientificas.

A dispensa do termo de Assentimento se deve ao fato de os pacientes da amostra, no momento da execução do exame, serem tanto menor de 18 anos quanto adultos, não sendo diferenciado para a pesquisa, como critério de inclusão ou exclusão. Tais pacientes também foram autorizados pelo responsável no documento "AUTORIZAÇÃO PARA DIAGNÓSTICO E/OU EXECUÇÃO DE TRATAMENTO ORTDÔNTICO". Os nomes e dados pessoais dos pacientes não serão divulgados em nenhum momento, mantendo desta forma o sigilo profissional (Artigo 9º do Código de Ética Odontológico) e a privacidade dos participantes da pesquisa durante todas as fases e assumimos o compromisso de cumprir as exigências contidas na Resolução CNS Nº 466, de 12.12.12.

Bauru, 17 de Fevereiro de 2016

Lorena Vilanova Freitas de Souza
Orientado

Prof. Dr. José Fernando Castanha Henriques
Orientador

Al. Dr. Octávio Pinheiro Brisolla, 9-75 – Bauru-SP – CEP 17012-901 – C.P. 73

ANNEX B. Patient´s informed consent exoneration (verso)

UNIVERSIDADE DE SÃO PAULO
FACULDADE DE ODONTOLOGIA DE BAURU
CLÍNICA DE ORTODONTIA

AUTORIZAÇÃO PARA DIAGNÓSTICO E/OU EXECUÇÃO DE TRATAMENTO ORTODÔNTICO

Por este instrumento de autorização por mim assinado, dou pleno consentimento à FACULDADE DE ODONTOLOGIA DE BAURU-USP para, por intermédio de seus professores, assistentes e alunos devidamente autorizados, fazer diagnóstico, planejamento e tratamento em minha pessoa ou meu filho menor de idade ____, de acordo com os conhecimentos enquadrados no campo dessa especialidade.

Concordo também, que todas radiografias, fotografias, modelos, desenhos, históricos de antecedentes familiares, resultados de exames clínico e de laboratório e quaisquer outras informações concernentes ao planejamento de diagnóstico e/ou tratamento, constituem propriedade exclusiva desta FACULDADE, à qual dou plenos direitos de retenção, uso para quaisquer fins de ensino e de divulgação em jornais e/ou revistas científicas do país e do exterior.

Bauru, ____ de ______________ de 19 ___.

____

Assinatura do paciente ou responsável

R.G. Nº: ______________________

Nome: ____

Endereço: ____

CEP: ____________________ Telefone: _________________