European Journal of Orthodontics 35 (2013) 447–453
doi:10.1093/ejo/cjs010
Advance Access publication 16 March 2012

Dentofacial and upper airway characteristics of mild and severe Class II division 1 subjects

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SUMMARY The aim of this retrospective, cross-sectional study was to assess whether mild and severe Class II division 1 subjects have craniofacial and upper airway characteristics, which relate to the severity of Class II as judged by overjet or ANB angle. The sample consisted of pre-treatment lateral cephalograms and dental casts of 131 males and 115 females (mean age 10.4 ± 1.6). Inclusion criteria were: healthy Caucasian subjects, at least ¾ Class II first molar relationship on both sides and overjet ≥ 4 mm. The cephalograms were traced and digitized. Distances and angular values were computed. Mild and severe Class II was defined by overjet (<10 mm/≥ 10 mm) or by ANB angle (<7 degrees/≥7 degrees). Statistics were performed with two-sample *t*-test and Pearson's correlation analysis. In the two overjet groups, significant differences were mainly found for incisor inclination while the two ANB groups differed significantly in SNA, WITS, Go-Pg, SpaSpp/MGo, SN/MGo, and Ar-Gn. The shortest airway distance between the soft palate and the posterior pharyngeal wall was significantly correlated to the NS/Ar angle. Statistical analysis revealed several significant correlations. Patients with a large overjet or ANB angle differed significantly from patients with a small overjet or ANB angle mainly in their incisor inclination. In the present sample, the overjet and to some extent also the ANB angle is determined by soft tissue or individual tooth position rather than by skeletal background. In retrognathic patients, a tendency towards smaller airway dimensions was found. However, statistical analysis did not reveal a strong connection between upper airway and dentoskeletal parameters, but a large interindividual variation.

Introduction

Class II malocclusion with a particularly high prevalence (20–30 per cent) in Caucasian populations (Myllarniemi, 1970; Bowden *et al.*, 1973; Lavelle, 1976; Proffit *et al.*, 1998) is a common orthodontic problem. Therefore, its characteristics have been widely discussed in the literature (Wylie, 1947; Wylie and Johnson, 1952; Fisk *et al.*, 1953; Sassouni, 1969, 1970; Hitchcock, 1973; Dibbets, 1996; Baccetti *et al.*, 1997; Rudolph *et al.*, 1998; Varrela, 1998; Klocke *et al.*, 2002; Sayin and Turkkahraman, 2005). It is also evident that there is large interindividual variation in terms of craniofacial and dental morphology as well as severity of the Class II malocclusion (Moyers *et al.*, 1980; McNamara, 1981).

Comparison of subjects with Class II malocclusion versus Class I occlusion revealed an increased mandibular plane angle (Henry, 1957), smaller mandibular size (Craig, 1951), and increased vertical dimension (Altemus, 1955) and face height (Hunter, 1967) as typical features for Class II malocclusion. Obstructive sleep apnoea patients with small pharyngeal airways tend to have features typical for Class II subjects, that is a short and retrognathic mandible (Battagel *et al.*, 2000) and sagittal discrepancy between the maxilla and mandible (Lowe *et al.*, 1995). Possible relationship between the severity of Class II and airway size, however, has not been adequately studied.

The extent of sagittal discrepancy defines the severity of Class II malocclusion. Several parameters are used to assess the degree of deviation from the norm of skeletal, dental, or the combination of both components. One of the measurements defining the severity is the overjet. In most orthodontic indices of treatment need or outcome, the overjet is considered as a major determinant of malocclusion severity (Grainger, 1967; Linder-Aronson, 1974; Shaw *et al.*, 1991; Richmond *et al.*, 1992a,b). The general assumption is that the larger the overjet, the more severe a Class II would be and therefore also the need for orthodontic treatment more urgent. This assumption is supported by publications reporting an increased risk for upper incisor trauma with an increase in overjet (Jarvinen, 1978; Artun *et al.*, 2005). The severity of the Class II also has an important influence on the treatment plan. It has been suggested that in subjects with an overjet greater than 10 mm, surgery may be the more successful treatment option rather than functional appliance treatment (Proffit *et al.*, 1992). Also in the widely used Index of Orthodontic Treatment

Need (Shaw *et al.*, 1991), subjects with more than 9 mm overjet belong to the group with ‘very great’ treatment need for orthodontic treatment (Grade 5). Difficulties in treatment do not only arise from a large overjet. Skeletal sagittal and vertical relationship, amount and direction of the remaining growth, and inclination of the incisors usually play an important role in determining the complexity of treatment. From a skeletal perspective, the ANB angle is commonly used to describe Class II severity, even though points A and B are to some degree also affected by incisor position (van der Linden, 2008).

It is debatable how one should weight different dental and skeletal parameters in order to divide Class II subjects into mild and severe cases. Furthermore, it is not clear if those severe cases have smaller upper airways and therefore could be more prone to develop obstructive sleep apnoea. The aims of the present study were 1. to assess whether Class II division 1 subjects have typical craniofacial characteristics that relate to the severity of Class II as judged by overjet or ANB angle, 2. to study whether airway size correlates with Class II severity, 3. to study correlations in general between the skeletal, dental, and airway measurements in the sagittal and vertical dimension.

Materials and methods

Material

This retrospective, cross-sectional study of cephalometric radiographs consisted of pre-treatment lateral cephalograms, hand-wrist radiographs, and dental casts. Inclusion criteria were: Caucasian ethnicity, at least ¾ Class II first molar relationships on both sides (cusp-to-cusp cases were not included) and at least 4 mm overjet. The files of 246 growing subjects (131 males and 115 females, mean age 10.4 ± 1.6), randomly selected from the archives at the Clinic for Orthodontics and Paediatric Dentistry of the University of Zurich, Switzerland, met the selection criteria and represented Class II cases of varying severity with a wide range of overjet. No information regarding obstructive sleep apnoea was available for the included subjects.

Methods

Lateral cephalograms had been taken with teeth in centric occlusion and with the Frankfort horizontal plane parallel to the floor. The position of the head was defined by ear rods and with a nasal support preventing the head from rotating during exposure. The focus–coronal plane distance was 200 cm, film–coronal plane distance was 15 cm, and the enlargement was 7.5%. Only cephalograms of good quality were included.

The cephalograms were hand traced using a 0.5 mm lead on a 0.10 mm matt acetate tracing paper and then the landmarks were constructed according to the definitions (See online supplementary material for Figure 1). All tracings and landmark constructions were performed by the same person (JB). Another person (MS) verified all tracings and landmark definitions before digitizing. The digitizing was performed using tablet digitizer Numonics AccuGrid (Numonics, Landsdale, Pennsylvania, USA) with a resolution of 0.0254 mm. The calculation of the cephalometric values was performed by self-written software. All values were corrected to the radiographic magnification of 7.5% before calculating to facilitate further comparison with the literature. For assessment of the vertical and sagittal characteristics, distances and angular values in lateral cephalograms were computed. Pharyngeal airway was assessed with the following measurements: ‘p’ the smallest distance between the soft palate and the posterior pharyngeal wall and ‘t’ the smallest distance between the tongue base and the posterior pharyngeal wall. The most constricted sites (retropalatal and retroglossal) were chosen because they can be identified accurately and because they are very important in airflow dynamics (it is at such sites in the upper airway that critical narrowing during respiration may occur).

The overjet and overbite were assessed on dental casts with an accuracy of 0.5 mm. In addition to the chronological age, the skeletal age was evaluated according to Greulich and Pyle (1950) on hand-wrist radiographs. The skeletal age was assessed to eliminate bias caused by variation in growth timing.

Repeatability

To assess the method, error 31 randomly selected lateral radiographs were retraced again by the same person (JB). Again, another person (MS) verified all tracings and landmark definitions before digitizing. The combined error of landmark location, tracing, and digitation was determined using Interclass Correlation Coefficient (ICC). The paired *t*-tests were computed to assess systematic error and also the random error was evaluated.

Statistical method

Statistical analyses were performed using Statistical Package for the Social Sciences 17.0.0 for Windows (SPSS Inc, Chicago, Illinois, USA). Descriptive statistics were calculated for all measurements.

The 246 growing subjects were divided into two groups using the ANB angle (1st Group: ANB < 7 degrees, $n = 198$/ 2nd Group: ANB ≥ 7 degrees, $n = 48$) and the overjet (1st Group: overjet < 10 mm, $n = 160$/2nd Group: overjet ≥ 10 mm, $n = 86$) based on criteria of the Swiss national insurance for birth defects. Statistical comparison of the ANB and overjet groups with other cephalometric variables was performed with unpaired two-sample *t*-test.

In order to analyse the degree of association between two continuous variables, scatterplots and Pearson’s correlation analysis were used. Additionally, multivariable linear regression models for distances p and t with respect to all available predictors and after the application of the backward model choice procedure in SPSS were computed. The corresponding values of the adjusted R Square were reported. Results having a *P* value below 0.05 were considered statistically significant.

Pre-hoc power analysis

The purpose of the pre-hoc power analysis was to test the null hypothesis that the correlation in the population is 0.00 while the significance for clinical relevance has been set at 0.05. With the current sample size of 246, the study has power of 95% to yield a statistically significant correlation with a correlation coefficient of at least 0.230 (95 percent confidence interval 0.134–0.685).

Results

Repeatability

Repeatability study for lateral cephalometric measurements revealed the mean ICC to be 98.1% (median 99.4%, range 94.4–99.9 per cent), which implies excellent repeatability of measurements. The application of the paired *t*-tests for all variables showed that no systematic error could be found ($P > 0.101$). The random error was smaller than 4.6 degrees.

Statistical analysis

Tables 1 and 2 relate to comparison of the two overjet and ANB groups. Statistically significant differences for +1/SpaSpp, −1/MGo, and SpaSpp were found between the overjet groups. Significant differences for SNA, WITS, Go-Pg, SpaSpp/MGo, SN/MGo, and Ar-Gn were detected between the ANB groups. No differences were found concerning the overjet or SNB for the different ANB severity groups. The same was true for ANB or SNB in the different overjet severity groups.

For the airway measurements, the only significant correlation for the distance p (the smallest distance between the soft palate and the posterior pharyngeal wall) was found with the NS/Ar angle [$P \leq 0.021$, correlation coefficient (r) = 0.148]. For the distance t (the smallest distance between the tongue and the posterior pharyngeal wall), a positive correlation was found to a ratio between the length of the cranial base and the length to Point A (measured parallel to FH, perpendicularly to a line through Point S) ($P \leq 0.003$, $r = 0.191$) and the length to Point B ($P \leq 0.017$, $r = 0.152$). No other significant correlations were detected.

Pearson's correlation analysis revealed several statistically significant correlations of vertical measurements with sagittal, dental, and linear measurements (Table 3). SpaSpp/MGo angle had a highly significant correlation with the overbite ($P \leq 0.001$, $r = -0.259$), SNA angle ($P \leq 0.001$, $r = -0.294$), SNB angle ($P \leq 0.001$, $r = -0.419$), and SN/Pg angle ($P \leq 0.001$, $r = -0.523$) and a weaker correlation with the ANB angle ($P = 0.001$, $r = 0.204$). The measurements for SpaSpp/MGo angle in relation to the angles between +1/SpaSpp and −1/MGo also showed a significant negative correlation ($P \leq 0.001$, $r = -0.266$ and -0.367). For the SpaSpp/MGo angle and the distance between Ar-Go ($P \leq 0.001$, $r = -0.463$), a highly significant correlation was

Table 1 Unpaired two-sample *t*-test for two overjet groups (<10 mm/≥10 mm).

n (=246)	160 (<10)	86 (≥10)	Significance
Chronologic age	10.42 ± 1.58	10.44 ± 1.60	0.841
Skeletal age	10.08 ± 1.84	9.87 ± 1.83	0.660
Overbite (mm)	3.77 ± 2.32	3.99 ± 2.48	0.483
SNA (°)	80.06 ± 3.86	79.57 ± 3.41	0.325
SNB (°)	74.44 ± 3.59	73.75 ± 3.17	0.137
ANB (°)	5.62 ± 1.73	5.82 ± 1.82	0.396
WITS	3.14 ± 2.69	3.29 ± 2.42	0.693
Go-Pg	71.98 ± 4.87	70.93 ± 4.70	0.103
SpaSpp/MGo (°)	29.02 ± 4.96	28.98 ± 4.71	0.957
SN/MGo (°)	35.44 ± 5.33	35.40 ± 5.14	0.961
+1/SpaSpp (°)	111.36 ± 6.79	116.39 ± 7.27	<0.001**
−1/MGo (°)	96.66 ± 6.84	93.68 ± 6.73	0.001**
SpaSpp	55.54 ± 3.55	54.52 ± 2.71	0.021*
S-Go	70.86 ± 5.36	70.16 ± 4.97	0.317
N-M	113.06 ± 7.37	111.86 ± 6.15	0.199
Ar-Go	41.13 ± 3.94	40.52 ± 3.60	0.228
Ar-Gn	101.38 ± 6.21	99.62 ± 5.38	0.027
Airway distance t	10.82 ± 3.64	10.37 ± 3.63	0.361
Airway distance p	9.33 ± 2.94	8.90 ± 2.95	0.279
SNBa (°)	131.15 ± 4.82	130.83 ± 4.64	0.624

**Correlation is significant at the 0.001 level (2-tailed).
*Correlation is significant at the 0.05 level (2-tailed).

Table 2 Unpaired two-sample *t*-test ANB (<7 degrees/≥7 degrees).

n (=246)	198 (<7°)	48 (≥7°)	Significance
Chronologic age	10.13 ± 1.58	10.50 ± 1.57	0.546
Skeletal age	10.03 ± 1.89	9.89 ± 1.59	0.478
Overjet (mm)	8.46 ± 2.32	8.98 ± 2.38	0.164
Overbite (mm)	3.85 ± 2.36	3.82 ± 2.43	0.936
SNA (°)	79.32 ± 3.49	82.19 ± 3.73	<0.001**
SNB (°)	74.25 ± 3.43	73.95 ± 3.62	0.592
WITS	2.88 ± 2.45	4.45 ± 2.82	<0.001**
Go-Pg	72.09 ± 4.75	69.68 ± 4.71	0.002*
SpaSpp/MGo (°)	28.51 ± 4.83	31.07 ± 4.50	0.001**
SN/MGo (°)	34.91 ± 5.28	37.53 ± 4.64	0.002*
+1/SpaSpp (°)	113.43 ± 7.28	111.87 ± 7.63	0.192
−1/MGo (°)	95.20 ± 6.61	97.33 ± 8.00	0.056
SpaSpp	54.99 ± 3.32	55.96 ± 3.22	0.070
S-Go	70.91 ± 5.26	69.39 ± 4.98	0.071
N-M	112.61 ± 7.27	112.78 ± 5.69	0.877
Ar-Go	41.11 ± 3.86	40.26 ± 3.65	0.185
Ar-Gn	101.22 ± 5.99	98.88 ± 5.59	0.014*
Airway distance t	10.65 ± 3.59	10.71 ± 3.86	0.921
Airway distance p	9.29 ± 2.92	8.74 ± 3.05	0.244
SNBa (°)	131.00 ± 4.66	131.19 ± 5.16	0.798

**Correlation is significant at the 0.001 level (2-tailed).
*Correlation is significant at the 0.05 level (2-tailed).

Table 3 Results of Pearson's correlation analysis.

			Intermaxillary divergence (SpaSpp/MGo)	Vertical divergence (SN/MGo)	NS/Ar	Gonion angle (MGo/Ar)
Sagittal values	SNA	Coefficient	−0.294**	−0.516	−0.419**	−0.049
		P value	<0.001	<0.001	<0.001	0.451
	SNB	Coefficient	−0.419**	−0.685**	−0.430**	−0.155
		P value	<0.001	<0.001	<0.001	0.016
	ANB	Coefficient	0.204*	0.259**	−0.039	0.179*
		P value	0.001	<0.001	0.549	0.005
	SN/Pg	Coefficient	−0.523**	−0.763	−0.336	−0.233
		P value	<0.001	<0.001	<0.001	<0.001
	Go-Pg	Coefficient	−0.201*	−0.271	0.093	−0.326**
		P value	0.001	<0.001	0.151	<0.001
Vertical values	Overbite	Coefficient	−0.259**	−0.209	0.040	−0.055
		P value	<0.001	0.001	0.540	0.396
	Ar-Go	Coefficient	−0.463**	−0.508	0.221	−0.335**
		P value	<0.001	<0.001	0.001	<0.001
	SN/SpaSpp	Coefficient	−0.138*	0.399**	0.367	0.094
		P value	0.031	<0.001	<0.001	0.144
	SpaSpp/MGo	Coefficient	——	0.841	−0.043	0.554**
		P value	——	<0.001	0.503	0.001
Dental values	+1/SpaSpp	Coefficient	−0.266**	−0.234**	−0.100	−0.115
		P value	<0.001	<0.001	0.121	0.075
	−1/MGo	Coefficient	−0.367**	−0.367**	0.149	−0.340**
		P value	<0.001	<0.001	0.021	<0.001

**Correlation is significant at the 0.001 level (2-tailed).
*Correlation is significant at the 0.010 level (2-tailed).

found and a slightly less significant correlation with the distance between Go-Pg ($P = 0.001$, $r = -0.201$). The SN/MGo angle showed a statistically high significant correlation with SN/SpaSpp ($P \leq 0.000$, $r = 0.399$), SNA ($P \leq 0.001$, $r = -0.516$), SNB ($P \leq 0.001$, $r = -0.685$), and ANB ($P \leq 0.001$, $r = 0.259$). In addition, highly significant correlations were detected for SN/MGo and angles between +1/SpaSpp and −1/MGo ($P \leq 0.001$, $r = -0.234$ and -0.367). The NS/Ar angle has a highly significant correlation with the SNA and SNB angle, respectively

($P \leq 0.001$, $r = -0.419$ and -0.430). There were significant negative correlations ($P \leq 0.001$, $r = -0.335$ and -0.326) for the gonial angle (MGo/Ar) and the distances Ar-Go and Go-Pg. Similarly, there were statistically significant correlations ($P \leq 0.001$, $r = 0.554$ and -0.340) for the gonial and SpaSpp/MGo angles and −1/MGo, respectively. No statistically significant correlation was found between the ANB angle and the overjet using Pearson's correlation analysis ($P = 0.072$, $r = 0.262$).

For the computation of the multivariable linear regressions for distances p and t, all predictors listed in Table 1 with exception of chronological age and dental inclination were used. As far as distance p is considered, inclusion of all variables led to a model with adjusted R Square = 0.05, $P = 0.029$. No significant covariates could be found. The backward model selection procedure arrived at a smaller model with adjusted R Square = 0.062, $P = 0.002$. SNA and Ar-Gn showed a positive, whereas overjet SNB, SN/MGo, SpaSpp, and S-Go showed a negative association with distance p. For distance t, the inclusion of all predictors led to a model with adjusted R Square = 0.041, $P = 0.052$. Backward model selection procedure arrived at a smaller model with adjusted R Square = 0.061, $P = 0.001$. SNA, Go-Pg, and SNBa showed a positive, whereas the overjet and the Ar-Go expressed a negative association with distance t.

Discussion

The characteristics of Class II division 1 malocclusions are discussed extensively in the literature because of their high prevalence. Cross-sectional studies usually compare Class II individuals to either a group with Class I occlusion or to existing cephalometric standards but not to cases differing in Class II severity (Wylie, 1947; Wylie and Johnson, 1952; Fisk *et al.*, 1953; Sassouni, 1969, 1970; Moyers *et al.*, 1980). Therefore, the aim of this study was to examine whether overjet or ANB angle really allow for differentiation in respect to the severity of Class II in individuals with malocclusion.

It was found that the primary statistically significant difference between Class II patients with a large overjet (≥10 mm) as compared to patients with a small overjet lay in their incisor inclination. Remarkably, the only statistically significant skeletal difference was the length of the upper jaw. Therefore, it seems that the overjet is determined rather by the function of the soft tissue or by individual tooth position than by the underlying skeleton. Lower lip interposition under the upper incisors, often in combination with forced lip closure and a deep labiomental fold, is a common finding in Class II malocclusion subjects with increased overjet (Bishara and Jakobsen, 2006). For example, one might presume that lower lip interposition between the upper and lower incisors, or lower lip sucking habits, were more frequent in the large overjet group than in the smaller overjet group. Such lip pressure leads to more proclined upper incisors and retroclined lower incisors, thereby increasing the overjet beyond the underlying skeletal discrepancy (Luffingham, 1982; Lew, 1991).

With regard to the differences between the ANB groups (<7 degrees/≥ 7 degrees), as expected, the SNA angle was significantly greater in the group with the higher Class II severity. This difference in SNA can also be partially explained by the degree of the upper incisor inclination since the position of point A can be altered to some extent by the position of the roots of the upper first incisors (van der Linden, 2008; Al-Abdwani *et al.*, 2009).

Surprisingly, there was no difference regarding SNB in our sample. There were, however, significant differences in the configuration and length of the lower jaw. As expected, the SNB angle is an important discriminator between various degrees of class II severity in other studies (Sayin and Turkkahraman, 2005). In this sample, dental inclination and soft tissue function obviously played a more important role, probably because the records represented different degrees of Class II severity with a wide range of overjets on plaster models rather than different skeletal patterns on lateral radiographs.

In the present sample, there was a statistically significant correlation between the gonial angle (MGo/Ar) and the length of the horizontal (Go-Pg) and the vertical (Go-Ar) part of the mandible. A large gonial angle (MGo/Ar) correlates with a smaller horizontal and vertical dimension of the mandibular body and with a wider angle between SpaSpp and MGo.

Correlations to the measured minimal airway distances were in general quite weak. Contrary to expectation, correlations to SNA, SNB, ANB, overjet, or any vertical dimension could not be found. However, there was a tendency in retrognathic patients towards smaller airway dimensions. One explanation might be that it is not the absolute length of the jaws but rather their position relative to the cranial base, which might be important for the size of the airway. Therefore, it is not surprising that a negative correlation for SN/Ar was not only found for the SNA and SNB angle but also for the upper airway dimension.

However, it seems that the size of the airway shows wide interindividual variation and is generally quite independent of the skeletal parameters. An explanation for this could be that among individuals with a small airway, there is an overlapping between those that have a small airway because of their abnormal skeletal structure and those that have normal craniofacial structures but are obese, have excessive soft tissue thickness or reduced airway dilator muscle activity (Ferguson *et al.*, 1995).

The group with higher ANB values had a more vertical skeletal pattern. In our sample, the intermaxillary divergence (SpaSpp/MGo) correlates statistically significantly with SNA, SNB, and SN/Pg angles and to a lesser degree but also statistically significantly with the ANB angle. This would be logical if we assume only a certain measure of growth potential for the upper and lower jaw. An increased vertical development would then lead to a limitation of sagittal growth and anterior displacement of the upper and lower jaw at the end of growth. Increased vertical growth leads to posterior rotation of the mandible in relation to the cranial base, resulting in a downward and backward displacement of the chin.

There were significant negative correlations between the SpaSpp/MGo angle and the SN/MGo angle to the −1/MGo angle and the +1/SpaSpp angle, respectively. Correlation between the vertical dimension and the position of the lower anterior teeth is supposedly of an adaptive nature to maintain a functional overbite and ensure masticatory function or through the influence of the surrounding soft tissues. In a posterior growth pattern of the lower jaw within the surrounding soft tissues, the lower incisors are more likely to be pushed into the lower lip because of the backward and downward rotation of the chin. Consequently, the lower anterior teeth are more likely to be influenced by the lip pressure, resulting in a lingually directed force on those teeth during forced lip closure. At the same time, occlusal forces might also cause a reclined position of the lower incisors. A large gonial angle (MGo/Ar angle) and intermaxillary divergence (SpaSpp/MGo angle) correlate to a statistically significant degree with more retrusion of the lower anterior teeth relative to the mandibular base (−1/MGo angle).

A statistically significant negative correlation was found between the angle SpaSpp/MGo and the overbite. Contrary to the statistically significant correlation between the overbite and the intermaxillary divergence (SpaSpp/MGo), the overjet and the ANB angle did not show a statistically significant correlation.

In the present study, the computed correlation coefficients (r) are, in general, low (mostly around 0.2) with one only reaching 0.685. While some of these may statistically be significant, their clinical relevance is questionable. When the r values are squared to assess the variability, their relevance becomes even more disputable. The adjusted R Square values of at most 0.062, provided by the multivariable linear regression analysis, reinforce that only a small relevant association between the predictors and the distances p and t exist.

Conclusions

Overjet, often the first clinical impression of Class II severity, is not necessarily an adequate parameter for determining the true (skeletal) severity of a Class II malocclusion. The overjet is more likely to be influenced by functional factors, such as the lips or tongue than by skeletal factors.

In general, the difference between low severity and high severity Class II patients and their treatment challenges is revealed far more accurately by the gonial angle of the mandible, the vertical dimension, the growth pattern, and the position of the jaws in relation to the cranial base rather than by the overjet.

Supplementary material

Supplementary material is available at *European Journal of Orthodontics* online.

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