Changing in Dental Setting and Postural Analysis – A Case Report

Sergio Palandri (✉ danaskully@bl1036.org)

AO Ordine Mauriziano - Turin Italy <https://orcid.org/0000-0001-9776-3618>

Research Article

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Abstract

Background

Dental structure and posture is now well known to be closely linked to each other. This work is not intended to be the definitive proof of this link, but rather the exposure of a case that presents the particularity of an absolute procedural asepsis as the operator was not aware of the change in the dental setting of the subject examined.

Material sand Methods

The study began in 2020 and ended in 2021. The subject involved was a young woman of about 37 years old, weighing 52Kg and 1.58m tall, at the first postural analysis performed on 2020 January the third. Subsequently, two other postural analysis were performed, 13 months and 22 months after the first respectively. For the postural analysis, an identical protocol was followed in the three analyzes performed.

Results

Observing the results obtained in the three analysis, it can be deduced that approximately 63% of the controlled parameters (12 out of 19) underwent modifications, even if not all of them could be related to the variation of the dental setting.

Conclusion

The study, even within the limits of its design, highlights how the different systems that make up the human body are interdependent and an action performed on one of them can be found as a modification of the initial state of others.

Background

The relationship between dental structure and posture is well known and documented, as evidenced by recent and less recent articles in literature [1–8], especially when it comes to surgical interventions or bracing [9–11]. However, it is perhaps less known how even minimal interventions or changes in the dental setting, e.g. the extraction of a tooth, can directly affect the posture of the person involved.

The aim of this study is not to constitute the definitive proof of this statement, but rather to describe a particular case, characterized by a peculiar occasional situation of procedural asepsis.

Materials And Methods

The study began in 2020 and ended in 2021. The subject involved was a young woman, aged 37 years and 10 months, weight of 52Kg and height of 1.58m, for a BMI of 21, at the first postural analysis

performed on 2020 January the third.

The subject requested this analysis for herself personal knowledge only, free from particular specific situations or suggesting clinical one or symptoms.

From the findings of the first analysis, a second analysis was agreed after about one year. The outbreak of the SARS-COV2 pandemic event, made the second analysis possible only on 2021 February the third. Some unexpected finding in this second analysis, moved operator to discuss with subject. This brought the subject to inform the operator on the extraction of 3.6, occurred more or less one month after the first analysis, as pathological. Then another analysis was agreed when 3.6 would be restored, since was still missing at the moment, waiting for the optimal condition of restoration of the mandibular bone.

3.6 was restored in 2021 April and the third agreed analysis was performed on 2021 November 10th

For each of the three postural analysis performed, a postural analysis system described in literature was used [12]. It should be noted that in the first postural analysis the objectification system of the coronal and sagittal rotations of the pelvis was not available, instead present in the second and third. The indications given in this regard in the first analysis are therefore those found by the operator.

Results

The results of the three postural analysis performed, relative to the considered items, together with the specific and general conditions concerning each postural analysis itself, are reported in Table 1. Comparing the results of the individual items in the three analysis, it can be noted that the slight disharmony of the temporo-mandibular axis is normalized after the extraction of 3.6. while it is overall highlighted that the Meersseman test was positive in correspondence with the lack of 3.6.

Also changing in dominance and changing in CPP can be observed contextually to the extraction of 3.6, passing, for CPP, from a situation of high capacity (first analysis) to a paraphysiological situation (second analysis), which is accentuated in the third.

Always from Table 1 it is possible to observe how there was a change in the cervical ROM with an increase in the rotation range on the left side.

Furthermore, a clear asymmetry of the iliac crests in the coronal plane is observed in particular, as shown in Fig. 1.

The analysis of the femoral-tibial joint and of the feet standing also show differences among the three analysis carried out.

Looking at Bassani test and De Cyon test results, changing among the three analysis could be found and the Fukuda test shows a progressive decrease in the angle of rotation during them.

Finally Taperulè test shows modifications in results across the analysis performed.

Discussion

An analysis of the differences highlighted in the comparison of the three postural analysis performed, leads to objectively suppose that not all of them are attributable to the absence and reinstatement of 3.6.

Indeed, e.g., the cervical ROM changes only from the second to the third analysis, it remains unchanged between the first and the second therefore both in the presence and absence of 3.6. Similarly, the condition of the femoro-tibial joint presents variations that can be logically related more to physical activity and body re-harmonization path chosen by the subject, rather than to the intervention on 3.6, especially in a lack of support by recent available literature about.

A completely similar argument can be made for feet standing.

Bassani test and De Cyon test results, present same value both in presence and absence of 3.6, so is not easy to argue a possible dependence on it, even more so in the analogue lack of support by recent available literature about, noticed above.

Fukuda test results show the angle of rotation decreasing progressively over the three analysis performed, drawing attention rather to physical activity and re-harmonization practiced and increased by the subject, instead of the presence or the absence of 3.6, as previously highlighted.

Something similar happens to Taperulè test results, where each analysis gives a different one with no reasonable link with 3.6 presence or absence.

On the other hand, different considerations concern the result of the Meersseman test, that is reasonably correlated to the history of 3.6 as well as the variation in improvement of the position of the temporo-mandibular axis from the first to the second analysis.

Regarding the changing in dominant eye and the worsening variation in the values of the CPP, although changes in the stomato-gratic system may be responsible in visual system changes and some article in literature [13–14] reported diplopia after dental anesthesia, there seems to be no sufficient reasons to support a relationship between 3.6 extraction / restoring and changing in dominant eye or worsening variation in the values of the CPP.

Instead pelvic rotations seems to be well related to 3.6 since the appearance of rotation on the coronal plane is inserted in the absence period of 3.6, preceded by a situation of absence of and followed by the restoration of this condition after the replacement of 3.6.

Conclusion

Undoubtedly, the case reported does not constitute inferential proof, but nevertheless highlights the interdependence of the different systems that make up the human body.

More studies are also need to fill the lack in literature about this specific topic.

Abbreviations

CPP

Convergence Proximate Point

Declarations

Conflict of interest

the author declare to have conflict of interest

Authorization

The subject kindly voluntarily agrees to the study and verbally authorized to publish this article and figure, concealing her face and keep her anonymous, as we done

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Table

Table 1 is available in the Supplemental Files section

Figures

Fig.1 Pelvic rotation in coronal plane: absent in first analysis (left), present in second analysis (middle), absent in third analysis (right)

Figure 1

Pelvic rotation in coronal plane: absent in first analysis (left), present in second analysis (middle), absent in third analysis (right)

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