

Response to Reviewer #1 Comments

Dear Authors, I have read the manuscript with interest and some questions raised. Enlisted please find my comments. Overall. General English grammar revision (Minor spelling errors). Key words. “dentistry” and “orthodontics” could be added in my opinion. Introduction. This section should be implemented explaining to a non-orthodontic reader the meaning of malocclusion, Second class, the materials usually used, and some general details. A couple of paragraphs are needed. Case Presentation. Authors stated “Pretreatment facial photographs showed a convex profile and shallow mentolabial sulcus.[...] telerradiography [...] panoramic radiograph”. For each machinery used, please add details about commercial name manufacturer, City and State. Case Presentation. Authors stated “The maxillary midline was coincident with the facial midline, and the mandibular midline demonstrated a right deviation of 1.5 mm”. Please detail how this measure was performed. Case Presentation. Please add details about all software used, version, Manufacturer, City and State. Case Presentation. Authors stated “Intraoral photographs showed bilateral angle class II, division 1 malocclusion.”. Please detail how this diagnosis was performed. Case Presentation. Authors stated “Cephalometric analysis demonstrated a skeletal class II malocclusion”. Please add details about cephalometric landmarks chosen along with reference. Case Presentation. Figure 1. Please enlarge the photographs in order to see details Case Presentation. Figure 2. Teleradiography is shown but cephalometric tracing is missing. Please add cephalometric tracing. Treatment progress. Authors stated “Initial leveling progressed over the bimaxillary arch with 0.016-inch × 0.022-inch ISW. [...] A 100-gf Ti–Ni closed-coil spring was used for canine retraction”. For each material tested, please add details about commercial name manufacturer, City and State. Case Presentation. Figure 7. Teleradiography is shown but cephalometric tracing is missing. Please add cephalometric tracing. Additionally, final panoramic radiograph is missing. Discussion. Authors stated “To avoid the buccal flaring effect of anterior teeth, we applied an active tie-back mesial to the first molars using a crimpable hook and elastic chain”. Please add a paragraph concerning the treatment alternatives. It could be added that “The treatment has been completed without the use of miniscrews, thus avoiding risks of root injuries (Root Injury During Interradicular Insertion is the most Common Complication Associated with Orthodontic Miniscrews. Montasser, M.A., Scribante, A. Journal of Evidence-Based Dental Practice, 2022, 22(1), 101688), failure (Miniscrews for orthodontic anchorage: analysis of risk factors correlated with the progressive susceptibility to failure. Yilin Xin, Yeke Wu, Chenjou Chen, Chen Wang et al. Am J Orthod Dentofacial Orthop. 2022 Oct;162(4):e192-e202) or fracture (Failure load and stress analysis of

orthodontic miniscrews with different transmucosal collar diameter. Sfondrini MF, Gandini P, Alcozer R, Vallittu PK, Scribante A. J Mech Behav Biomed Mater. 2018 Nov;87:132-137.)". These important concerns should be added to Discussion section. Discussion. Please elongate a bit this section. Discussion. Please add a paragraph showing the limitations of the present report. Discussion. Provide a general interpretation of the results in the context of other evidence, and implications for future research. References. Some references are quite old (1990;1986;1977;1992;1994;1994;1998;1988;1983;1960;1997). If possible, please switch with some more modern research. Some recent studies have been suggested in the sections above.

Point 1: Key words. "dentistry" and "orthodontics" could be added in my opinion.

Response: We appreciate the Reviewer for this comment. "dentistry" and "orthodontics" has been added into key words.

Point 2: Introduction. This section should be implemented explaining to a non-orthodontic reader the meaning of malocclusion, Second class, the materials usually used, and some general details. A couple of paragraphs are needed.

Response: The definition of malocclusion and the usually used materials were adding into introduction. Thank you very much.

Point 3: Case Presentation. Authors stated "Pretreatment facial photographs showed a convex profile and shallow mentolabial sulcus.[...] telerradiography [...] panoramic radiograph". For each machinery used, please add details about commercial name manufacturer, City and State.

Response: The commercial name and relevant information has been added as following:
A panoramic film radiograph revealed missing maxillary and mandibular third molars. Initial lateral and anteroposterior cephalometric radiographs (Romexis 3.2.0., Helsinki, Finland) were taken in centric occlusion with closed lips (Figure 2).

Point 4: Case Presentation. Authors stated "The maxillary midline was coincident with the facial midline, and the mandibular midline demonstrated a right deviation of 1.5 mm". Please detail how this measure was performed.

Response: We have corrected the sentence to following: Anteroposterior cephalometric radiographs showed mandibular midline deviated 1.5 mm to the right side from mid sagittal plane (Cg - ANS).

Point 5: Case Presentation. Please add details about all software used, version, Manufacturer, City and State.

Response: Thank you for reminder. In our hospital, all cephalometric tracings are done by hand tracing, so no software was used.

Point 6: Case Presentation. Authors stated “Intraoral photographs showed bilateral angle class II, division 1 malocclusion.”. Please detail how this diagnosis was performed.

Response: The detail information was added as following: Intraoral photographs showed the mesio-buccal cusps of maxillary first molars are ahead of the buccal grooves of mandibular first molars, which represented bilateral Angle class II, division 1 malocclusion.

Point 7: Case Presentation. Authors stated “Cephalometric analysis demonstrated a skeletal class II malocclusion”. Please add details about cephalometric landmarks chosen along with reference.

Response: ANB angle was chosen as the cephalometric landmarks as diagnosis: Cephalometric analysis demonstrated a skeletal class II malocclusion (ANB angle: 8.0°)

Point 8: Case Presentation. Figure 1. Please enlarge the photographs in order to see details

Response: Thank you for reminder. The photographs was been enlarged.

Point 9: Case Presentation. Figure 2. Teleradiography is shown but cephalometric tracing is missing. Please add cephalometric tracing.

Response: Cephalometric tracing has been added.

Point 10: Treatment progress. Authors stated “Initial leveling progressed over the bimaxillary arch with 0.016-inch × 0.022-inch ISW. [...]A 100-gf Ti–Ni closed-coil spring was used for canine retraction”. For each material tested, please add details about commercial name manufacturer, City and State.

Response: The material name and relevant information has been added as following: Before orthodontic treatment, the bilateral maxillary first premolars were extracted. Full-mouth DBS was performed with preadjusted edgewise metal brackets, Micro-arch, Roth type (Tomy International, Tokyo, Japan). Initial leveling progressed over the bimaxillary arch with 0.016-inch × 0.022-inch ISW. A 100-gf Ti–Ni closed-coil spring (Tomy International, Tokyo, Japan) was used for canine retraction (Figure 3).

Point 11: Case Presentation. Figure 7. Teleradiography is shown but cephalometric tracing is missing. Please add cephalometric tracing. Additionally, final panoramic radiograph is missing.

Response: Cephalometric tracing and final panoramic radiograph has been added.

Point 12: Discussion. Authors stated “To avoid the buccal flaring effect of anterior teeth, we applied an active tie-back mesial to the first molars using a crimpable hook and elastic chain”. Please add a paragraph concerning the treatment alternatives. It could be added that “The treatment has been completed without the use of miniscrews, thus avoiding risks of root injuries (Root Injury During Interradicular Insertion is the most Common Complication Associated with Orthodontic Miniscrews. Montasser, M.A., Scribante, A. Journal of Evidence-Based Dental Practice, 2022, 22(1), 101688), failure (Miniscrews for orthodontic anchorage: analysis of risk factors correlated with the progressive susceptibility to failure. Yilin Xin, Yeke Wu, Chenjou Chen, Chen Wang et al. Am J Orthod Dentofacial Orthop. 2022 Oct;162(4):e192-e202) or fracture (Failure load and stress analysis of orthodontic miniscrews with different transmucosal collar diameter. Sfondrini MF, Gandini P, Alcozer R, Vallittu PK, Scribante A. J Mech Behav Biomed Mater. 2018 Nov;87:132-137.)”. These important concerns should be added to Discussion section.

Response: We appreciate for all reference from the reviewer, and we rearrange all these data in the following paragraph:

In this case, the treatment has been finished without the use of temporary anchorage devices (TADs), thus avoiding risks of soft tissue irritation and root injury. While miniscrews placed in loose alveolar mucosa, it may result in soft tissue irritation, such as tissue overgrowth or ulceration.[15] Root injury is highly relevant to insertion site, especially in the interradicular insertion sites.[16][17] In order to intrude anterior teeth, the insertion site is usually between the apexes of upper central incisor, where the risk of root injury is higher, and is more prompt to soft tissue irritation like labial frenum. It also reduces the problems which might derive from TADs. TADs may become loose, tip and extrude under orthodontic load. If TADs become mobile, it will not regain stability, and need to be removed and reinserted. [18][19] Besides, if the inappropriate insertion and removal torque was given, it might lead to failure, or even implant body fracture.[20] Generally in maxilla, the insertion torque of TADs is about 12.1 ± 3.1 N-cm, and the average removal torque is reported to be 15.8 ± 3.6 N-cm.[21]

Point 12: Discussion. Please elongate a bit this section.

Response: We have elongated the discussion section, including comparing with traditional continuous wire system, and the advantage without using TADs.

Point 13: Discussion. Please add a paragraph showing the limitations of the present report. Discussion. Provide a general interpretation of the results in the context of other evidence, and implications for future research.

Response: The limitation and the implications for future research are included in this paragraph:
The limitation of current case report is lacking case series to estimate the mean intrusion amount by ISW intrusion arch. Without the aid of TADs, it was reported that the intrusion amount of utility arch is $2.95 \text{ mm} \pm 0.78 \text{ mm}$, [22] which is close to the result of our case report. In the future research, quantitative analysis should be conducted, like the relationship between second-order bends and intrusion in ISW system.

Point 14: References. Some references are quite old (1990; 1986; 1977; 1992; 1994; 1994; 1998; 1988; 1983; 1960; 1997). If possible, please switch with some more modern research. Some recent studies have been suggested in the sections above.

Response: Thank you for kindly advise. We have added newer study you have mentioned above. We appreciate for all your suggestion. It really help us a lot!

Response to Reviewer #2 Comments

This is a simple case report on the treatment of a class II malocclusion. The case has been well treated and well illustrated. However, the authors failed to illustrate what major advantage of the current treatment compared with the conventional approach. A lot of the writing focused on the treatment procedures and I'd like to have a more indepth discussion. I'd suggest the authors to revise the manuscript as suggested.

Point 1: However, the authors failed to illustrate what major advantage of the current treatment compared with the conventional approach.

Response: Comparison of conventional and current treatment was added in following paragraph: Anterior teeth intrusion in a continuous wire system can be performed in several ways, such as the use of a utility arch[9] or Connecticut intrusion arch[10]. However, in these traditional protocols, premolars are bypassed. In premolar

extraction cases, it might be difficult to simultaneously intrude teeth and close extraction space. Figure 10 summarizes several ways to achieve this procedure in the ISW system. For incisor intrusion without extraoral appliance or skeletal anchorage, the amount of intrusion can be classified into small (<2.0 mm) and large (2.0–5.0 mm). In the present case, we applied an ISW intrusion arch for the upper incisor intrusion and an ISW curve plus active tie back for the lower incisor intrusion.

Point 2: A lot of the writing focused on the treatment procedures and I'd like to have a more indepth discussion.

Response: Thank you for all these helpful comments. The treatment procedures was added, and some discussion about TADs was also included. Following is the paragraph talking about some complications with TADs.

In this case, the treatment has been finished without the use of temporary anchorage devices (TADs), thus avoiding risks of soft tissue irritation and root injury. While miniscrews placed in loose alveolar mucosa, it may result in soft tissue irritation, such as tissue overgrowth or ulceration.[15] Root injury is highly relevant to insertion site, especially in the interradicular insertion sites.[16][17] In order to intrude anterior teeth, the insertion site is usually between the apexes of upper central incisor, where the risk of root injury is higher, and is more prompt to soft tissue irritation like labial frenum. It also reduces the problems which might derive from TADs. TADs may become loose, tip and extrude under orthodontic load. If TADs become mobile, it will not regain stability, and need to be removed and reinserted. [18][19] Besides, if the inappropriate insertion and removal torque was given, it might lead to failure, or even implant body fracture.[20] Generally in maxilla, the insertion torque of TADs is about 12.1 ± 3.1 N-cm, and the average removal torque is reported to be 15.8 ± 3.6 N-cm.[21]