Journal of Contemporary Orthodontics 2023;7(1):74–76

Content available at: https://www.ipinnovative.com/open-access-journals

Journal of Contemporary Orthodontics

Journal homepage: https://www.jco-ios.org/

Short Communication

Modified bracket holder with magnifying lens: A precise bracket positioner

Priya Balakrishnan[1]*, Shashikumar Balasubramanyam [1], Praveen Kumar Prabhu[1], Roopak D Naik[1]

[1]*Dept. of Orthodontics and Dentofacial Orthopaedics, Shree Dharmasthala Manjunatheshwara College of Dental Sciences and Hospital, A Constituent Unit of Shree Dharmasthala Manjunatheshwara (S D M) University, Dharwad, Karnataka, India*

ARTICLE INFO

Article history:
Received 07-12-2022
Accepted 06-03-2023
Available online 29-03-2023

Keywords:
Bonding
Bracket positioning
Bracket holder
Magnifying lens

ABSTRACT

A well finished orthodontic case is a result of precise bracket positioning during initial bonding. Orthodontists strive for accurate positioning of brackets so that we can avoid / minimize finishing arch wire bends. During the Bonding procedure, placing the bracket on tooth surface and then adjusting it to ideal position is time-consuming, also bracket displacement will reduce the bond strength. Therefore, to avoid these drawbacks this modified bracket holder with magnifying lens gives magnified image of tooth surface with precise visibility, so that bracket placement can be accurate according to the tooth contour with respect to mesio –distal and vertical position of tooth.

1. Introduction

A well-finished orthodontic case has the proper alignment of crowns and roots and level marginal ridges. With pre-adjusted brackets (straight-wire appliances), the position of the bracket on the crown determines the tooth's final tip, torque, height, and rotation. Poorly positioned brackets result in poorly positioned teeth and necessitate many more archwire adjustments. This can lead to an increase in treatment time or a final occlusion that is less than ideal. [1–5]

During the bonding procedure of placing the bracket, checking the position with the mouth mirror and then adjusting to the ideal position is time-consuming and the bracket displacement while repositioning might reduce the bond strength.

Therefore, to avoid these drawbacks, a modified bracket holder with magnifying lens will make the procedure simple and accurate. With precise visibility, the magnified image of the tooth surface allows orthodontists to place the bracket accurately according to tooth contour with respect to the mesiodistal and vertical position of the tooth. This magnifying lens which magnifies about 40X is detachable and autoclavable so it can be replaced when damaged.

2. Materials and Methods

1. Bracket holding tweezer
2. Magnifying lens
3. Palatal sheath
4. Band material
5. Spot welder

2.1. Methodology

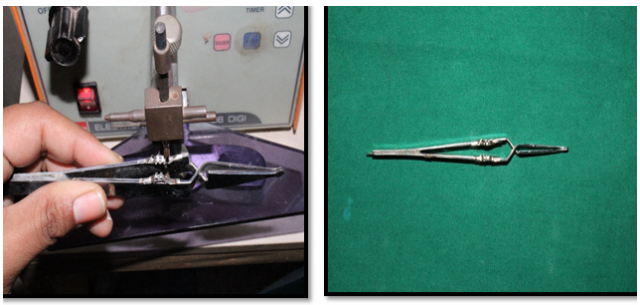
1. Weld palatal sheath with band material.
2. Check the distance from the tooth surface to the lens for a precise magnifying effect and mark the position on the tweezer.
3. Weld the band material with the sheath to tweezer on the marked point.[Figure 3 A]

* *Corresponding author*.
E-mail address: priyabalakrishnan96@gmail.com (P. Balakrishnan).

https://doi.org/10.18231/j.jco.2023.013

Figure 1: Armamentarium

Figure 2: Welding palatal sheath with band material



A **B**

Figure 3: A) welding the palatal sheath to tweezer B) tweezer with welded sheaths.

Place the lens on welded sheaths of the tweezer. This allows the sliding of lens over the sheath so there will not be a hindrance during the opening and closing of tweezer [Figure 4].

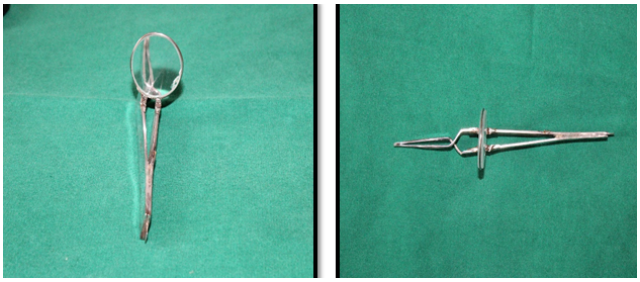


Figure 4: Bracket holder with magnifying lens.

Take the bracket with tweezer and place over tooth surface and position it precisely with help of magnifying lens. [Figure 5]

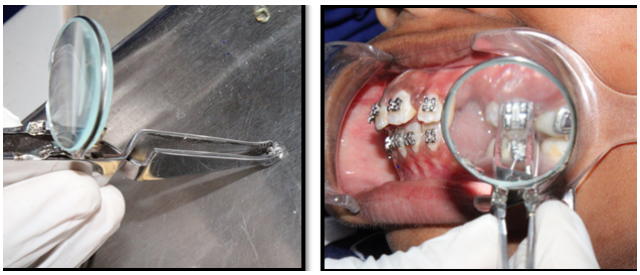


Figure 5: Bracket positioning with modified bracket holder with magnifying lens.

3. Conclusion

This instrument can be a greater advantage to our daily practice for better finishing of cases.

3.1. Advantages of instruments

1. Single instrument –ergonomic design.
2. Time saving.
3. Precise positioning of brackets.
4. Detachable magnifying lens – Replacable.
5. Economical.
6. Autoclavable.

3.2. Limitation of instrument

1. As the magnifying lens is attached to the bracket holding tweezer, the instrument compared to the normal tweezer instrument weighs more.
2. Repeated autoclaving of magnifying lenses cause damage to the lens so the new lens needs to be changed often.

4. Source of Funding

None.

5. Conflict of Interest

None.

References

1. Mclaughlin RP, Bennett JC. Bracket placement with the preadjusted appliance. *J Clin Orthod*. 1995;29(2):302–313.
2. Samuels RH. A new bracket-positioning instrument. *J Clin Orthod*. 2000;34:482–485.
3. Carlson SK, E J. Bracket positioning and resets: Five steps to align crowns and roots consistently. *Am J Orthod Dentofacial Orthop*. 2001;119:76–80.
4. Armstrong D, Shen G, Petocz P, Darendeliler MA. Accuracy of bracket placement by orthodontists and inexperienced dental students. *Aust Orthod J*. 2007;23:96–103.
5. Manni A, Grassi R, Carbone M. Customized bracket positioning with level marginal ridges. *J Clin Orthod*. 2004;38:348–50.

Author biography

Priya Balakrishnan, Post Graduate

Shashikumar Balasubramanyam , Associate Professor

Praveen Kumar Prabhu, Assistant Professor

Roopak D Naik, Professor and Head

Cite this article: Balakrishnan P, SB, Prabhu PK, Naik RD. Modified bracket holder with magnifying lens: A precise bracket positioner. *J Contemp Orthod* 2023;7(1):74-76.