



Letter to the Editor

DENTAL IMPLANT IN TONGUE THRUST HABIT: WISE / UNWISE?

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Dear Editor

Parafunctional tongue thrust is the unnatural force of the tongue against the teeth during swallowing.^[1] A force of approximately 41 to 709 g/cm² on the anterior and lateral areas of the palate has been recorded during swallowing.^[2] In orthodontic movement, a few grams of constant force is sufficient to displace teeth. Six different types of tongue thrust have been identified: anterior, intermediate, posterior, and either unilateral or bilateral may be found, and in most any combination ^[3]. A common question is which came first, the aberrant tongue position or the misalignment of teeth? Regardless, this condition can contribute to implant healing and prosthetic complications^[4]. Although the force of tongue thrust is of lesser intensity than in other parafunctional forces, it is horizontal in nature and can increase stress at the per-mucosal site of the implant. This is most critical for one-stage surgical approaches in which the implants are in an elevated position at initial placement and the implant interface is in an early healing phase^[5]. The tongue thrust may also contribute to incision line opening, which may compromise both the hard and soft tissues^[6,7,8].

A tongue thrust habit may lead to tooth movement or mobility, which is of consequence when implants are present in the same quadrant. If the natural teeth in the region of the tongue thrust were lost as a result of an aberrant tongue position or movement, the implants are at increased risk during initial healing and early prosthetic loading ^[9]. If the remaining teeth exhibit increased mobility, the implant prosthesis may be subject to increased occlusal loads. To evaluate anterior tongue thrust, the doctor holds the lower lip down, irrigates water into the mouth with the water syringe, and asks the patient to swallow ^[6]. A normal patient forms a vacuum in the mouth, positions the tongue on the anterior aspect of the palate, and is able to swallow without difficulty. A patient with an anterior tongue thrust is not able to create the vacuum needed to swallow when the lower lip is retracted, because the seal and vacuum for the patient are achieved between the tongue and the lower lip^[10]. As a consequence, the patient is unable to swallow while the lower lip is withdrawn ^[11].

Tongue Thrust Evaluation

A posterior tongue thrust is evaluated by retracting one cheek at a time away from the posterior teeth/edentulous region with a mirror, injecting water into the mouth with a water syringe, and asking the patient to swallow. Visual evidence of the tongue during deglutition may also be accompanied by pressure against the instrument and confirms a lateral force. The posterior tongue thrust may occur in patients wearing a maxillary denture opposing a Kennedy Class I mandibular arch, without a mandibular prosthesis replacing the posterior teeth. Under these conditions the maxillary denture often loses valve seal and drops posteriorly, as only anterior teeth contact. To limit this problem, the patient extends the lateral aspect of the tongue into the edentulous region to prevent the maxillary denture from dislodgement.

Prosthetic Difficulty with Tongue Thrust

A potential prosthetic complication for a patient with a lateral tongue thrust is the complaint of inadequate room for the tongue once the mandibular implants are restored [10,12]. A prosthetic mistake is to reduce the width of the lingual contour of the mandibular teeth [13]. The lingual cusp of the restored mandibular posterior teeth should follow the curve of Wilson and include proper horizontal overjet to protect the tongue during function. A reduction in the width of the posterior teeth often increases the occurrence of tongue biting and may not dissipate with time [14]. Rather than being a short-term inconvenience, the prosthesis may need to be refabricated. The restoring dentist should identify the tongue position before treatment and inform the patient about the early learning curve for the tongue once the teeth are delivered on the implants [15].

Even in the absence of tongue thrust, the tongue often accommodates to the available space, and its size may increase with the loss of teeth. As a result, a patient not wearing a mandibular denture often has a larger-than-normal tongue. The placement of implants and prosthetic teeth in such a patient result in an increase in lateral force, which may be continuous. This patient complains of inadequate room for the tongue and may bite it during function. However, this condition is usually short-lived, and the patient eventually adapts to the new intraoral condition.

A common complication occurs when patients are missing teeth and no interim prosthesis is worn [16]. This can be especially problematic on the mandibular arch because the tongue will gradually increase in size. After implant restoration, whether a removable or fixed prosthesis, the patient will often report a “crowded” tongue with insufficient space. This usually will take weeks to months for the patient to adapt. If the patient refuses to wear the interim prosthesis socially, he or she can be instructed to wear it during the day to allow for better adaptation.

Conclusion

Even in the absence of tongue thrust, the tongue often accommodates to the available space, and its size may increase with the loss of teeth. As a result, a patient who is not wearing a mandibular denture often has a larger-than-normal sized tongue. The placement of implants and prosthetic teeth in such a patient result in an increase in lateral force, which may be continuous [5,17]. The patient then complains of inadequate room for the tongue and may bite it during function. However, this condition is usually short-lived, and the patient eventually adapts to the new intraoral condition.

However, it has been observed that a fixed restoration is more advantageous for this type of patient. If the patient has an RP-5 prosthesis, it should be turned into an RP-4. An RP-5 restoration is much less stable in patients with tongue thrust or size issues and patient complaints are more common with removable restorations in general.

Authors Contribution

Apoorva Singh: Manuscript drafting, Literature search, data collection

Varun Wadhvani: Data Analysis, manuscript drafting

Vaishnavi Rajaraman: Manuscript editing

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Conflict Of Interest

All the authors declare no conflict of interest

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