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## RESEARCH ARTICLE

### LINGUAL ORTHODONTICS - A CASE REPORT

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#### ABSTRACT

The integration of counterfeit insights (AI) strategies has revolutionized numerous ranges of drug disclosure and item advancement. This article talks about the worldview move caused by AI and illustrates the capacity of AI to optimize molecular structures and items. AI-powered frameworks use the control of machine learning, quantum mechanics, and data-driven procedures, permitting researchers to reveal connections between molecular properties and results. The combination of counterfeit insights and molecular testing quickens the distinguishing proof of successful candidates, diminishes labor-intensive work and blunders, and uncovers modern pathways for molecular alteration. Furthermore, this article clears the way for distant better; a higher understanding of the past by highlighting the moral and administrative measurements of the application of AI in the drug revelation and information era. As insights evolve into an imperative device, its advancement from molecular advancement is obvious, pushing us towards a period of revelation and development.

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## INTRODUCTION

As in contemporary preadjusted edgewise labial orthodontic appliance, the greatest challenge in the success of lingual orthodontic therapy depends undoubtedly on the perfection in bracket design, prescription, its positioning, treatment planning and knowledge of biomechanics in addition to the orthodontist's skill and training.<sup>1,2</sup> In this article, a basic idea of lingual orthodontics would be described along with a detailed description of treatment for a patient with Angle's Class I bimaxillary protrusion with crowding of teeth treated with lingual appliance is described

### GUIDELINES FOR SELECTING PATIENTS FOR LINGUAL TREATMENT

A patient selected for lingual orthodontics usually falls in one of the basic three categories. They are:

#### DEAL LINGUAL CASE

##### Nonextraction

- Deep bite, Class I with either mild crowding or spacing having a good facial pattern
- Deep bite with mild Class II showing good facial pattern

- Class II Division 2 with retruded mandible
- Patients requiring expansion
- Extraction
- Class II, maxillary first bicuspid and mandibular second bicuspid extractions
- Bimaxillary protrusions with four first or second bicuspid extractions

#### DIFFICULT LINGUAL CASES

- High angle/dolichofacial patterns
- Surgical cases
- Class III tendencies
- Class II, four first bicuspid extraction
- Cases with multiple restorative work.

#### CASES CONTRAINDICATED FOR LINGUAL THERAPY

- Unadaptable or demanding personality types
- Poor oral hygiene or unresolved periodontal involvement
- Short clinical crowns
- Acute temporomandibular joint (TMJ) dysfunction.<sup>3,4</sup>

## ADVANTAGES OF LINGUAL THERAPY

- Esthetic advantage.
- The labial enamel surface is preserved
- Oral hygiene is better performed
- Clinical judgement of treatment program can be enhanced
- Less Soft time response of the lips and cheeks



Fig 1. Indirect bonding tray

## APPLIANCE ADVANTAGE

- Inherent bite opening effect
- There is an inherent arch expansion (maxillary)
- Bodily movement for molar distalization
- Ideal for tongue thrusting habit
- The use of indirect bonding technique paves way for accurate bracket placement.



Fig. 2. upper and lower arches bonded

## DISADVANTAGES

- Treatment needs to be done under indirect vision.
- Speech might be distorted initially.
- Treatment not possible if lingual crown height is less.
- Chair side time is greatly increased.
- Lab backup is essential
- Expensive technique
- Expertise skills required. <sup>5</sup>

## DIFFICULTIES ENCOUNTERED

- Tissue Irritation and Speech Difficulties
- Appliance placement and bonding
- Wire Placement and Ligation<sup>6</sup>

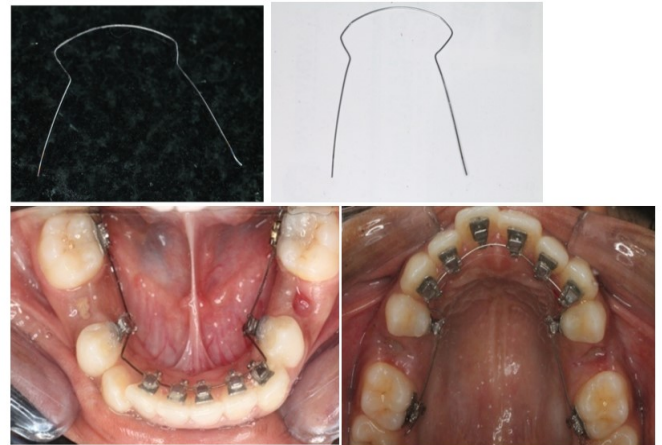


Fig. 3. Upper and lower -014" NITI

## CASE REPORT

A patient with a chief complaint of irregularly placed teeth and mild proclination of teeth came us for treatment. All the essential diagnostic aids were taken and she was diagnosed as :Class I skeletal base, having orthognathic maxilla and mandible with a vertical growth pattern displaying mild upper and lower crowding with mild proclination of incisors

**TREATMENT PLAN:** All four second bicuspids were extracted and a lingual appliance using 018 slot STB 7<sup>th</sup> generation brackets was planned as the patient was very conscious about her appearance.

**TREATMENT:** We made impressions of the upper and lower arches and sent it to lab for the fabrication of indirect bonding trays (Fig 1) using TAD BPD. After thorough oral prophylaxis, indirect bonding of brackets was done using light cure (Fig :2). After bonding we extracted all the second bicuspids. This was done inorder to avoid mild migration of teeth following extraction. The initial aligning arch wire was 0.014" Niti which was bent to place an offset in the premolar region (Fig :3). After the alignment correction was completed and prior to retraction, torque expression was done using 17/25 TMA wires. Horizontal and vertical anti bowing bends were incorporated in the arch wire (Fig4).

The torque expression wires was left for one month after which retraction was done using 16/22 SS wires. Class I force was given using E chains and the case was completed with minimal settling (Fig 5).

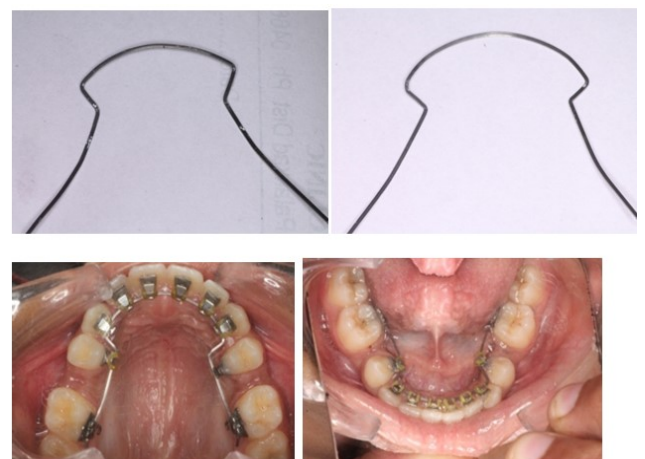


Fig 4 :Upper and lower 17/25 TMA WITH ANTI-(BOWING BENDS)

## POST TREATMENT



Fig. 5. Post treatment intraoral and extraoral

## CONCLUSION

For Lingual orthodontics aims at just that. Apart from the esthetic face left a contribution in arena of orthodontics, it also renders mechanical advantages such as inherent expansion, bite opening extra with these appliances the practitioner can achieve excellent results while providing his or her patients with a unique and valuable service.

The only criteria for achieving successful results on the part of the operator is to develop the necessary skills. Hope in future the lingual orthodontics will culminate to “invisible orthodontics” in the real sense.

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