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Case Report

Mandibular Incisor Extraction: Whether Or Not - A Couple of Case Reports

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ABSTRACT

Mandibular incisor extraction is a controversial treatment option in orthodontic treatment planning. It has often been described as a compromised treatment of malocclusions. Careful case selection and planning may lead to acceptable results. In this study a couple of cases have been put forward, one with mandibular incisor extraction and other without extraction aiming to conclude that mandibular incisor extraction is case dependent regardless of malocclusion. Mandibular incisor extraction indication and contraindications6 are all valid during decision making but the most important fact to be remembered is that it is case dependent.

Keywords: Mandibular incisor; extraction; malocclusion; orthodontic treatment

INTRODUCTION

One of the most critical decisions in fixed orthodontic treatment planning is whether to extract teeth or not. The orthodontic pendulum has swung from a predominantly non-extraction philosophy in the early 1900s, toward a more extraction- oriented therapy in the middle of the century, and now back towards a non-extraction emphasis. Selecting the best treatment is often difficult, and all guidelines do not apply to every case. The decision to extract permanent teeth as an aid in resolving arch length deficiencies presents a challenge to the orthodontist. Teeth which can be extracted ideally for orthodontic treatment are the 1st premolars, 2nd premolars. But nowadays, extraction of mandibular incisors (any 1) is also considered frequently [1]. In deciding which lower incisor to extract- lateral or central, right or left one must take certain factors into consideration?

- Amount of anterior arch length deficiency,
- Amount of anterior tooth ratio,
- Periodontal and tooth health condition, and
- Upper and lower midline relationship.

The Mandibular incisor extraction remains a controversial treatment modality in orthodontics. Mandibular incisor extraction has often been described as a compromise treatment of malocclusions because of the side effects associated with it [2].

The advantages of mandibular incisor extraction include potential reduction in treatment time, possibility of achieving better long-term stability in the mandibular anterior segment since intercanine width is not increased, and maintenance of the soft-tissue profile because retraction of the mandibular incisors is less compared with mandibular premolar extractions. These advantages are counterbalanced, however, by some potential disadvantages. The most significant of these is the possibility of the space reopening in the long term [3].

Factors associated with successful outcomes of treatment following mandibular incisor extraction: Careful case selection and planning, including tooth-size analysis and diagnostic set-up. IPR of the maxillary and mandibular incisors. Optimal angulation of the remaining mandibular incisors. Equilibration of mandibular canines.

In this study of ours we are putting forward a couple of cases, one with mandibular incisor extraction and other without extraction aiming to conclude that mandibular incisor extraction is case dependent regardless of malocclusion.

CASE REPORT 1

Patient with initials RY, age 15yrs, with a classic Class II Div 2 malocclusion with a lingually placed right mandibular lateral incisor. After the procurement of pre-treatment records (fig 1), treatment plan as decided was expansion along with levelling and aligning of the upper arch and extraction of the lingually placed mandibular incisor in lower arch due to its

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malpositioning and also alignment of the rest of the lower arch (fig 2).

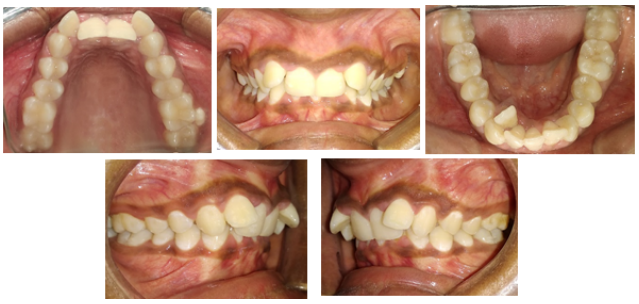

Figure1: Pre-treatment intra-oral photographs of case 1.

After expansion and levelling aligning of the upper arch, there was an increase in overjet from 1mm to 6mm which was of concern and we had to reconsider the extraction of mandibular incisor. After careful assessment of the stage casts and cephalometric readings, extraction was omitted from the line of treatment and further space gaining for the incisor was done using closed coil spring. Later the incisor was brought in the arch using a 0.014" NiTi segmental wire and the alignment was done. The overjet improved from 6mm to 4mm and furthermore decreased to 3mm using reverse inclined plane [4].

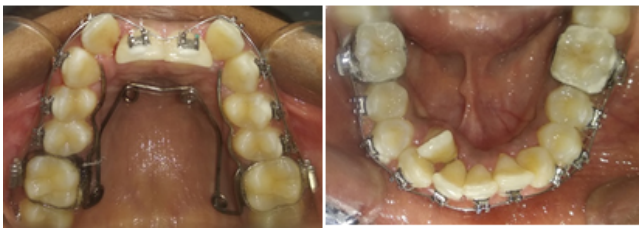

Figure2: Expansion in upper arch; first wire in lower arch.

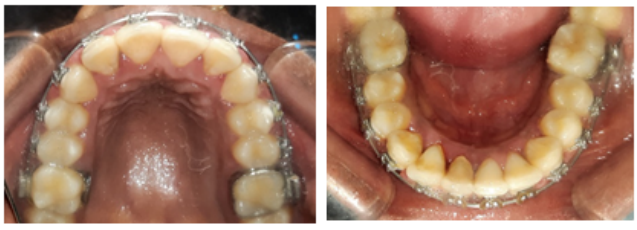

Figure3: After levelling and aligning of both arches.

The case is yet to be debonded as further aligning of the lower molars are left. A fixed lingual bonded retainer in the lower arch along with a hawleys appliance with reverse inclined plane is to be delivered to the upper arch for retention

CASE REPORT 2

Patient with initials MS, age 22yrs, Class I Deweys type 1 malocclusion had moderate crowding in both the arches anteriorly. After obtaining the pre-treatment records and analysing the case, a non-extraction approach was decided. The plan was to proceed with expansion in both the arches followed with levelling and aligning. A hyrax and expansion screw appliance were delivered in the upper and lower arches respectively.

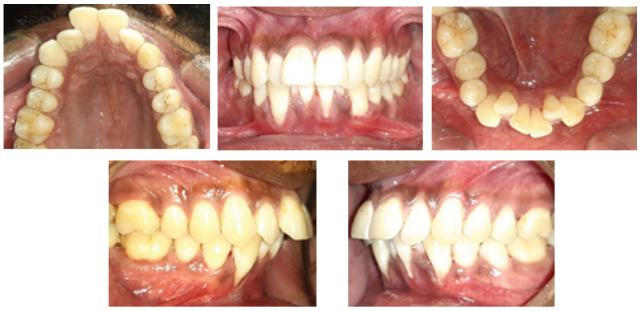

Figure4: Pre-treatment intra-oral photographs of case 2.

After a couple of months of expansion, stage records were analysed to check whether any change in the course of treatment plan was needed. As anticipated, the upper arch did not need any kind of modification other than levelling and aligning but while considering the lower arch, expansion did not completely gain space for the anterior crowding; hence extraction of a single mandibular incisor was planned. Keeping in mind the overjet, periodontal condition of the lower arch i.e., future prognosis of the anterior it was decided that left mandibular lateral incisor needs to be extracted before levelling and aligning of the arch [5].

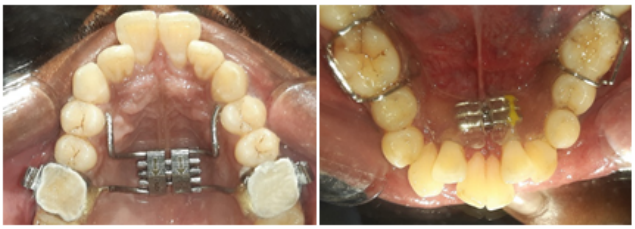

Figure5: hyrax appliance and expansion screw in upper and lower arches respectively.

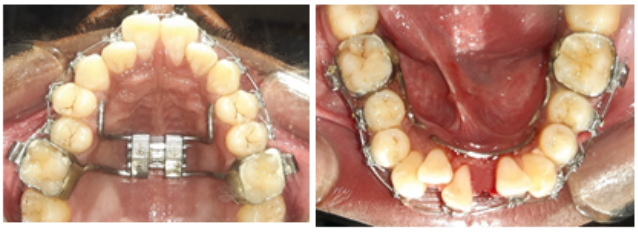

Figure6: after expansion of hyrax appliance and extraction in upper and lower arches respectively.

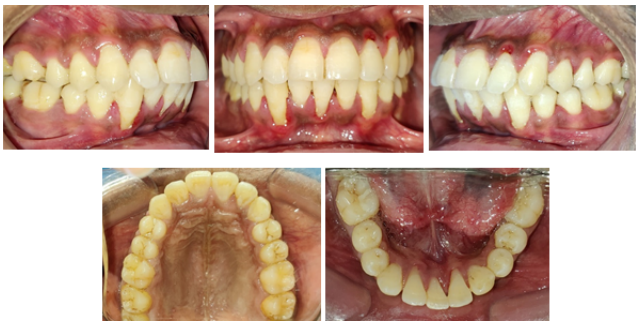

Figure7: debonded case 2 intra-oral photographs.

The case was completed in a period of 18months. Furthermore, hawleys retainer was delivered to both arches and a periodontic management for the lower anteriors recession was planned.

DISCUSSION

As discussed above both the cases had a pretreatment planning but both were reversed after the stage record analysis. Mandibular incisor extraction indication and contraindications are all valid during decision making but the most important fact to be remembered is that it is case dependent [6].

CONLUSION

Very limited conclusions can be reached about the signs and the impacts of extraction of lower incisors for orthodontic reasons, as most of the articles found were of descriptive nature mainly which don't take into account solid proof-based suggestions. There is a low degree of proof that mandibular incisor extractions can be viably utilized as an appropriate treatment choice or elective extraction decision in the resolution of crowding in carefully chose cases. Then again, clinicians ought to be mindful so as to keep away from helpless results like gingival recession, open interproximal gingival embrasures, expanded overjet and overbite.

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