Original Article
Journal of Pierre Fauchard Academy (India Section), *Vol 33(1), DOI: 10.18311/jpfa/2019/22316, March 2019, p. 15-18*
ISSN (Print) : 0970-2199
ISSN (Online) : 2405-772X

Flipping of Extraction Forceps: A Unique Method of Extraction of Lingually Erupted Mandibular Incisor Teeth: A Prospective Study

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Abstract

The objective of the study is to check the utility of an alternative forceps to overcome difficulties during extraction of lingually erupted mandibular incisors with conventional mandibular incisor forceps. Twenty-five patients indicated for extraction were subjected for the study with the informed consent. All the participants were followed up for first and seventh post-operative days. All the patients were treated uneventfully. No complications or difficulties were observed during intra-operative or post-operative period. The success rate was found to be 92%, as follow up was lost with two patients at the end of the study. To conclude, the maxillary premolar extraction forceps can be used easily and successfully as an alternative for the extraction of lingually erupted mandibular incisors.

Keywords: Anomalous Eruption, Ectopic Erupted, Lingually Erupted, Lower Incisor Teeth, Novel Approach

1. Introduction

Malposition or ectopic eruption of mandibular permanent anterior teeth is not uncommon[1]. Mader and Konzelman (1979) have addressed positional anomalies in terms of transposition[2]. Transported teeth had a prevalence of 0.03% involving the mandibular canine and lateral incisor in 8-9 years of age and 0.08% in 2-12 years of old individuals[1,3]. These findings may require orthodontic correction of mal-aligned teeth or extraction.

Prevalence of lingual eruption of permanent mandibular incisor is found to be 18.4%[4]. The extraction of lingually placed lower anterior tooth may find difficulty while applying extraction forceps due to its ectopic position. Many times it is difficult to get a proper grip and adapt the extraction forceps to cover maximum crown portion due to crowding.

The aim of this study is to find out the difficulties in extraction of lingually placed lower incisor teeth and propose a novel approach to overcome it.

2. Materials and Methods

Patients reported to the Department of Oral and Maxillofacial Surgery, indicated for extraction of lingually erupted lower anterior teeth was included in this study. Irrespective of their genders, the age group of 15 to 25 years were selected. Informed consent was obtained from all the participants. Total 25 patients were treated with this unique approach uneventfully.

Inclusion criteria:

i. Lingually erupted mandibular incisor teeth only.
ii. Healthy individuals in which extraction is indicated.
iii. Age range between 15-25 years.
iv. Ready for consent.
v. Ready to take part into study and follow-up.

Exclusion criteria:

i. Medically compromised or especially abled individuals.

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2.1 Method

Under all aseptic conditions, mental nerve block and lingual infiltration with 2% Lignocaine HCL and 1:80,000 Adrenaline was administered. All subjective and objective symptoms were ensured. The upper premolar forceps were used to remove the lingually placed lower incisor teeth.

2.2 Technique

The upper premolar extraction forceps were held upside down by the operator standing in 11 O'clock position (Figure 1). The beaks of upper premolar forceps were placed on mesio-distal surface of the tooth to be extracted. The alveolar process and mandible were guarded with left hand. The tooth was held firmly ensuring the long axis of tooth and beaks remains parallel in two point adaptations with the tooth (Figure 2). The forceps were gradually rotated mesio-distally to detach the periodontal ligament from the root surface with simultaneous gentle pull. Eventually, an upward movement was practiced to extract the tooth (Figure 3). The socket was toileted and haemostasis was achieved mechanically by pressure pack.

Post extraction routine medications were prescribed to all the patients. Post-operative follow up was carried out on 1st and 7th days. No complications were observed during extraction procedure as well as post-operatively in all the participants. Healing of extraction socket was found to be uneventful.



Figure 1. Operator's position (11 O'clock) holding upper premolar forceps upside down.

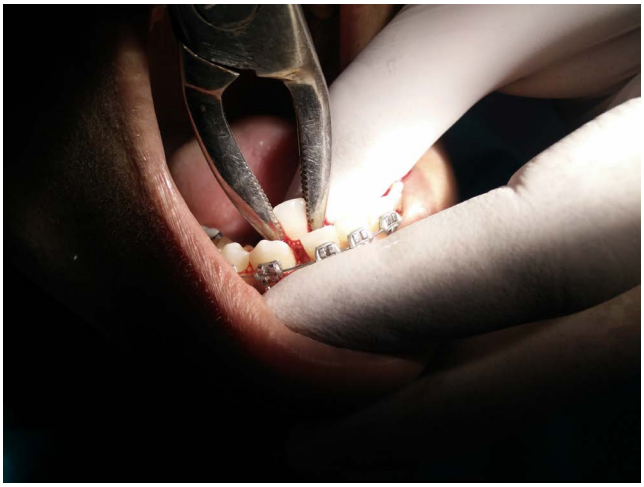


Figure 2. Two-point adaptation of beak of upper premolar forceps holding the tooth as apical as possible.



Figure 3. Upward movement to remove tooth from its socket.

3. Result

Total 25 patients were treated including 12 males and 13 females with mean age of 17.5 years. The success rate was found to be 92%, however, follow up was lost with 2 patients at the end of study (Table No. 1).

4. Discussion

Ectopic eruptions of permanent teeth were reported in frequencies of 12 and 52 %[5–7]. This study includes extraction of ligually erupted mandibular permanent incisors with

Table 1. List of patients with extracted lingually erupted mandibular permanent incisor teeth.

Sl. No..	Age/sex	Lingually erupted tooth (FDI notation)	Complications (if any)
1	23/ M	31	NF
2	16/ F	42	NF
3	17/ F	32	NF
4	15/ F	31	NF
5	16/ M	31	NF
6	20/ F	32	NF
7	22/ M	41	NF
8	24/ F	42	NF
9	18/ F	32	NF
10	19/ M	32	NF
11	22/ M	41	NF
12	23/ M	32	Follow up lost
13	25/ F	31	NF
14	15/ M	32	NF
15	16/ F	42	NF
16	17/ M	42	NF
17	18/ M	31	NF
18	15/ F	42	NF
19	19/ F	31	Follow up lost
20	20/ F	32	NF
21	21/ M	41	NF
22	25/ M	41	NF
23	17/ F	32	NF
24	18/ M	41	NF
25	17/ F	32	NF

NF = Not Found

upper premolar forceps. Routinely a mandibular anterior extraction forceps is used; however, many times less space is available to adapt the beaks of extraction forceps because of crowding. Therefore, the upper premolar extraction forceps were alternatively used to extract the lingually erupted lower incisor teeth (Figure 1).

Tooth should be removed through its path of withdrawal by placing the beak of extraction forceps as parallel as possible to its long axis[8]. In general, lower anterior extraction forceps are used for removal of lingually erupted lower permanent incisors keeping the beaks parallel to the long axis of the tooth. It was difficult to adapt the beaks properly and got a firm grip due to



Figure 4. Difficulty in adapting the beaks of mandibular anterior extraction forceps due to crowding.

crowding and lack of labial space (Figure 4). If applied improperly it might result into tooth breakage or damage to the adjacent soft or hard tissues.

Larry J. Peterson[9] has stated the goal of forceps use as twofold: (1) expansion of bony socket with the use of wedge-shaped beaks of forceps and (2) removal of the tooth from the socket. He has further added that during the extraction of mandibular anterior tooth, the lower anterior extraction forceps should be seated as apical as possible and moderate labial pressure is to be applied to initiate luxation process. Lingual force is used to continue expansion of bony socket and tooth is delivered in labial-incisal direction.

The 90 degrees of bend in the junction of beaks and handle of mandibular anterior forceps facilitate to adapt the crown and allow operator to get an adequate grip on the handle to perform extraction. This could not be achieved due to lack of space to get adaptation of beaks to the crown and firm grip on the tooth as well as handle. Hence, in this study, the same principles were followed with the flipping of extraction forceps to achieve the goals of extraction forceps[9]. The upper premolar extraction forceps was used to remove the lower incisors. Where, the beaks of forceps placed parallel and as apical as possible to displace the centre of rotation to the long axis of the tooth (Figure 1). The rotational moments were applied and the tooth was delivered in all the cases uneventfully.

This has been achieved due to the curved beaks, where the beaks were well adapted with the crown without involving or touching adjacent or underlying tissues and

its curvature allows the handle of forceps directing outside the oral cavity. This position facilitated the operator to hold it firmly and movements could be controlled adequately. The method is easy to perform, safe and the breakage of tooth or damage to the underlying hard or soft tissues can be avoided.

5. Conclusion

It is just an attempt to add ease and comfort in exodontia procedures. Alternatively, an upper premolar forceps can be applied to remove ligually erupted permanent mandibular incisors. This may otherwise avoid accidental crown fracture due to lack of tooth surface available to hold, maladaptation of beaks and availability of less space on labial side.

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