

**Management of ectopically erupted maxillary central incisor through abnormally thickened labial frenum - Interdisciplinary Approach**

<sup>1</sup>Dr. Manisha Verma, Department of Periodontology, FODS, KGMU Lucknow.

<sup>2</sup>Dr. Anjani Kumar Pathak, MDS, Additional Professor, Department of Periodontology, FODS KGMU, Lucknow.

<sup>3</sup>Dr. Nand Lal, Professor and Head Department of Periodontology, FODS KGMU, Lucknow.

<sup>4</sup>Dr. Mohammad Abdurrahman Khan, Assistant Professor, Department of Forensic Medicine and Toxicology, Hind Institute of Medical Sciences, Barabanki.

<sup>5</sup>Dr. Lobsang Chhodon, MDS, Orthodontics Department of Plastic Surgery, KGMU Lucknow.

**Corresponding Author:** Dr. Manisha Verma, Department of Periodontology, FODS, KGMU, Lucknow.

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**Abstract**

Ectopic eruption occurs when a tooth does not follow its regular eruption pattern and erupts somewhere else. Ectopic eruption is most frequently associated with the maxillary incisors. Normal tooth eruption, location, and morphology are critical for craniofacial development, facial aesthetics, and phonetics. The treatment plan is based on correcting the identified etiological factors that are primarily responsible for producing ectopic tooth eruption.

**Keywords:** Ectopic eruption, pseudo-pouch, alignment, aesthetics.

**Introduction**

When the permanent tooth erupts through the bone along its path it is clearly visible into the oral cavity. However, if a tooth's eruption path is disturbed, it will emerge in

the mouth in an incorrect position or may not erupt at all. This unsatisfactory eruption is called “ectopic eruption”. Maxillary anterior teeth are most important to facial esthetics, often referred to as “social six” as they are on maximum display during speech and smile in most of the individuals. During the transitional dentition phase, a variety of eruption disturbances occur, which can be divided into two categories: a) time-related disturbances and b) position-related disturbances. Ectopic eruption and transposition are disturbances related to position, which can cause a delay in eruption time; however, commonly the involved erupts within the expected period with an abnormality in position <sup>1</sup>. Any tooth can show this type of ectopic path of eruption, studies show that ectopic eruption of upper and lower permanent central incisors amounts to more than half of the total

frequency<sup>2</sup>. O'Meara stated that it may be due to many factors but insufficient intercanine and anteroposterior growth of the jaws contribute the most<sup>3</sup>. Therefore, early diagnosis and treatment can prevent a more complicated malocclusion.

### Case report

A 18-year-old healthy girl reported to the Department of periodontology with the chief complaint of swelling upper lip and unattractive smile(fig-1).



Fig 1: Frontal view of patient profile

Patient had a history of fall from stairs at the age of 10 months. They also reported that primary maxillary right central incisor had been severely intruded. No radiographic examination has been carried out at that time. Her parents also complained that, at the age of 10 years the right maxillary central incisor was erupted inside the inner aspect of the upper lip which caused painful swelling.

Clinically, the maxillary right central incisor was absent on intraoral inspection. The tooth had been displaced to a horizontal position due to trauma to the deciduous incisor. Irritation to the soft tissue caused swelling of the inner labial mucosa leading to encased maxillary right central incisor in a pseudo pouch (fig:2)



Fig 2: Ectopically erupting central incisor encased in a pseudo-pouch of hypertrophied maxillary frenum, also showing space loss.

Treatment plan was formulated as surgically excision of soft tissue followed by fixed orthodontic treatment. The patient was scheduled for surgical excision of hypertrophied labial frenum of “ectopically erupted central incisor encased within the abnormally thickened labial frenum”. Overlaying mucosa was removed by the conventional method of frenectomy with the help of a scalpel using local infiltration of xylocaine 2% with 1,80,000 parts epinephrine (fig:3).



Fig 3: Intraoperative surgical excision of hypertrophied labial frenum

Remaining tissue tags of thickened mucosa was refined with castrovejijo (fig:4,5)



Fig 4: After surgical excision of thickened labial frenum



Fig 5: Post-operative view after excision of pseudopouch of labial Frenum.

After excision of pseudo pouch of labial frenum, suture were placed (fig:6)



Fig 6: After suturing

and at the end placement of periodontal dressing after complete removal of fibrous tissue (fig:7).



Fig 7: Periodontal dressing

Fixed orthodontic therapy was initiated to extrude the maxillary right central incisor for correct alignment within the maxillary arch followed by finishing and detailing to achieve aesthetically and functionally optimum occlusion (fig:8,9).



Fig 8: Central incisors was engaged in orthodontic wire to guides its alignment





Fig 9: Extra oral profile after inter-disciplinary management

### Discussion

Traumatic dental injury in primary teeth may potentially interfere with odontogenesis. The percentage of developmental disturbances of permanent incisors that could be attributed to the injuries of their predecessors ranges from 12 to 74%<sup>4,5,6</sup>. The reported developmental disturbances for permanent teeth include enamel hypoplasia, crown and/or root deformation, eruption disturbances<sup>7, 8, 9</sup>. The age of the child at the time of sustained trauma is another major point of concern.

The influence of trauma to the primary incisors on their permanent successors can be related to several factors such as the spatial relationship of the involved teeth, the degree of resorption of the primary root at the time of injury, the direction of the traumatic force, the type of injury to the primary incisor, the developmental stage of the permanent tooth bud, and the child's age at the time of the injury<sup>10,11</sup>.

The thickness of the hard tissue barrier between primary incisors and their successors was found to be < 3mm<sup>11</sup>. This finding may also help to understand the potential

serious disruptive effect of severe injuries on permanent tooth germs during odontogenesis.

This case presents a similar outcome, except that the severity of impact caused the successor to erupt in an atypical pattern without any crown-root or root dilaceration. The permanent right central incisors deviated from their normal route as a result of injury, resulting in "ectopic eruption enmeshed within the abnormally thickened labial frenum," resulting in pseudo pouch buccally and palatally (fig:1). Considering the position of ectopically erupted incisor, fixed orthodontic therapy was carried out to ensure sufficient traction of teeth in the right direction and to achieve functionally and esthetically optimum occlusion.

### References

1. Barberia-Leache E, Suarez-Clua MC, Saavedra-Ontiveros D. Ectopic eruption of the maxillary first permanent molar: characteristics and occurrence in growing children. *Angle Orthod* 2005;75(4):610-615.
2. Kumagai E, Sai S, Nozaka K, Yamada S, Amari E. Clinical study of ectopic eruption of permanent incisors and first molars. *Shoni Shi Kagaku Zasshi* 1989; 27:30-40.
3. Meara O, Williams F. Ectopic Eruption pattern in selected permanent teeth. *J Dent Res*. 1962; 41:607-16
4. Brin I, Fuks A, Ben-Bassat Y, Zilberman Y. Trauma to the primary incisors and its effect on the permanent successors. *Pediatr Dent* 1984; 6:78-82.
5. Andreasen JO, Ravn JJ. Epidemiology of traumatic dental injuries to primary and permanent teeth in a Danish population sample. *Int J Oral Surg* 1972; 1:235-9
6. Ben Bassat Y, Fuks A, Brin I, Zilberman Y. Effect of trauma to the primary incisors on permanent successors in different developmental stages. *Pediatr Dent* 1985; 7:37-40.

7. Skaare AB, Jacobsen I. Primary tooth injuries in Norwegian children (1–8 years). *Dent Traumatol* 2005; 21:315–9.
8. Da Silva Assunç,ao LR, Ferelle A, Iwakura ML, Cunha RF. Effects on permanent teeth after luxation injuries to the primary predecessors: a study in children assisted at an emergency service. *Dent Traumatol* 2009; 25:165–70.
9. Altun C, Cehreli ZC, Gu`ven G, Acikel C. Traumatic intrusion of primary teeth and its effects on the permanent successors: a clinical follow-up study. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2009; 107:493–8.
10. Andreasen JO, Ravn JJ. The effect of traumatic injuries to primary teeth on their permanent successors II. A clinical and radiographic follow-up study of 213 teeth. *Scand. J Dent Res* 1971; 79:284–94.
11. Smith RJ, Rapp R. A cephalometric study of the developmental relationship between primary and permanent maxillary central incisor teeth. *ASDC J Dent Child* 1980; 47:36–41.