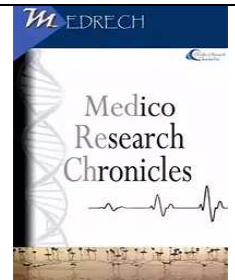




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BILATERAL MANDIBULAR IMPACTION: A CASE REPORT AND REVIEW OF LITERATURE

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ABSTRACT

CASE REPORT

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Impacted tooth refers to a tooth that fails to erupt in the dental arch in its normal position due to its surrounding structures. Multiple local and systemic factors influence this condition. Impaction of mandibular permanent lateral incisor and canine on either side is rare phenomenon in dental practice. As they are positioned in aesthetic and functionally important zone, treatment is quite challenging and requires multidisciplinary intervention.

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INTRODUCTION

Impacted tooth is defined as a tooth which is completely or partially unerupted and is positioned against another tooth and bone or soft tissue, so that its further eruption is unlikely, described according to its anatomical position. Etiology is varied with hereditary playing a pivotal role. It affects all the teeth in the permanent dentition. However, the incidence of impacted lateral incisor and canine on either side is a rare phenomenon.¹

Despite being a common entity detected in day to day dental practice, they do pose threat to surrounding tissues thus affecting the maintenance of dental health. Multidisciplinary approach is mandatory for the management of such condition.²

The present article focuses on a case report of bilateral impaction of mandibular

anterior in a 45 year old female with a brief review of literature.

CASE REPORT

A 45 year old female reported with a chief complaint of pain in relation to the mandibular anterior teeth since 2 months. Her medical history was excellent with no comorbidities. No history of trauma was elicited. Dental evaluation revealed edentulous region in the mandibular canine on the left side and lateral incisor on right side with no evidence of periapical or periodontal condition. Absence of any causative agent for the persistent pain led to radiographic evaluation for the same.

Orthopantomogram revealed impacted mandibular canine at level A on the left side and lateral incisor on the right side which were in the close approximation to the roots of the mandibular anteriors. (Fig. 1)



Fig. 1. Photograph depicting orthopantomogram revealing impacted mandibular canine on the left side and lateral incisor on the right side

The patient was explained about the presence of the same and the need to undergo surgical extraction to relieve the discomfort and prevent further complications associated with the same. Patient was planned for surgical extraction under local anesthesia after thorough hematological evaluation. Post

preparation of the surgical site, bilateral inferior alveolar nerve block was given. A crestal incision was given extending from mesial aspect of 45 to distal aspect of 34 with vertical releasing buccal incisions on either side. (Fig. 2)



Fig. 2. Intraoral photograph depicting crestal incision with vertical releasing buccal incision on either side

Mucoperiosteal flap was reflected. (Fig. 3)

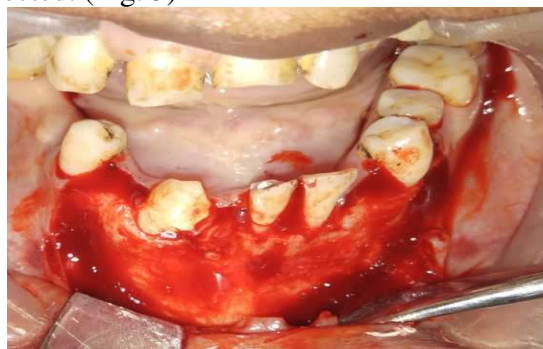


Fig. 3. Photograph depicting reflection of mucoperiosteal flap

Exposure of the right mandibular lateral incisor was done following bone removal from the labial aspect. (Fig. 4.a) Sectioning of the

tooth was done (Fig. 4.b) and retrieval of crown followed by the root was done. (Fig. 4.c, d).

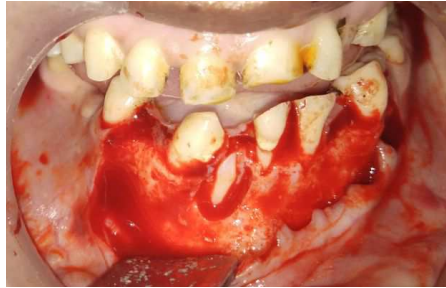


Fig.4. a: Photograph depicting exposure of the tooth

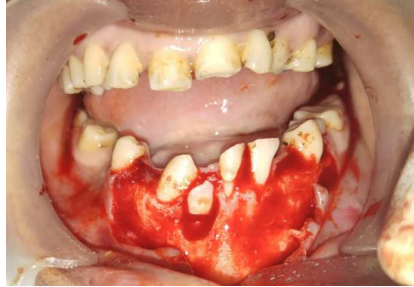


Fig. 4. b: Photograph depicting sectioning of Crown of the tooth



Fig. 4. c: Photograph depicting retrieval of the root of the tooth



Fig. 4. d: Photograph depicting extracted specimen

Exposure of the left mandibular canine was done following bone removal from the labial aspect. (Fig. 5.a) Sectioning of the tooth was

done (Fig.5 b) and retrieval of crown followed by the root was done. (Fig. fig. 5.c, d)



Fig. 5. a: Photograph depicting exposure of the tooth

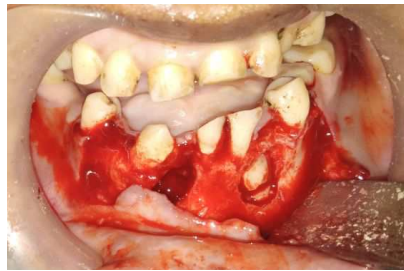


Fig. 5. b: Photograph depicting sectioning of Crown of the tooth

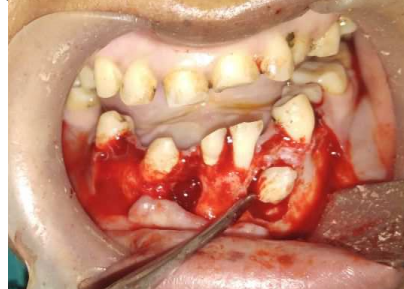


Fig. 5. c: Photograph depicting retrieval of the root of the tooth



Fig. 5. d: Photograph depicting extracted specimen

Post extraction, surgical site was thoroughly irrigated with betadine and saline and examined for any remnants of any tooth structure or any cystic lining. (Fig. 6.a)

Primary closure was done with 3.0 Vicryl. (Fig. 6. b) Post-operative period was uneventful.

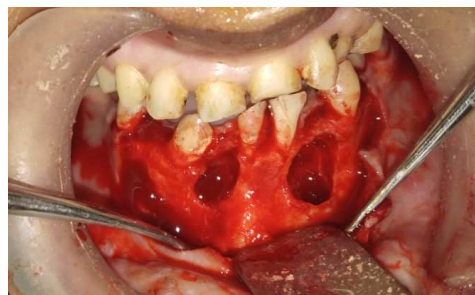


Fig. 6. a: Photograph depicting surgical site post extraction



Fig. 6. b: Photograph depicting primary closure

DISCUSSION

Impaction of mandibular anteriors, may it be a canine or lateral incisor, is a rare phenomenon. Etiology is broadly categorized into localized and systemic. Localized factors vary from mechanical obstruction (by a supernumerary tooth, cyst or tumor), skeletal deformity (micrognathia), trauma, tooth arch size discrepancy and the premature loss or retention of the deciduous teeth. Genetic disorders, endocrine deficiencies and previous irradiation of the jaws are the systemic factors leading to failure of tooth eruption.^{2,3}

The order of frequency of involvement of impacted teeth include mandibular third molars, maxillary third molars, maxillary canine, mandibular premolar, maxillary premolar, mandibular canine, maxillary central incisors and maxillary lateral incisors. Incidence rate of impacted mandibular canines is rare ranging from 0.10 % to 1.29 % and of impacted mandibular lateral incisor is much rarer ranging from 0.04% to 0.65%.¹ Grover and Lorton reported incidence of 0.22 % of impacted canines in the mandible in 5000 individuals. A study by Chu et al reported 0.07 % incidence in 7486 individuals. Rohrer reported incidence rate of 0.1 % in 3000 patients while Aydin et al found incidence of 0.44% in 4500 patients.²

Impacted teeth affect the second and third decade of life with a slight female predilection. Impacted mandibular anteriors are located on the labial aspect than the lingual aspect.¹

Impacted mandibular canine is categorized based on the depth into three levels by Yavuz et al⁴

Level A: The crown of the impacted canine is at the cervicoenamel junction (CEJ) of the adjacent teeth

Level B: The crown of the impacted canine is between CEJ and apices of root of the adjacent teeth

Level C: The crown of the impacted canine is apical to apices of the root of the adjacent tooth

Most of the cases are asymptomatic. It is mostly detected when the patient complains of referred pain secondary to the external root resorption of the neighbouring tooth occurs secondary to the pressure exerted by the impacted tooth. Few cases of dentigerous cysts, squamous odontogenic tumors, ameloblastoma and odontogenic keratocyst are found in association with a long standing impacted teeth resulting in infection, pain and extra oral fistulae.⁴

Management of the impacted teeth requires multidisciplinary team as the treatment protocol varies from conservative to invasive procedures keeping in mind the aesthetic and functional needs of the patient as well as the risks involved with the same. Treatment options include conservative, transplantation, orthodontic intervention and surgical extraction.^{2,3}

Asymptomatic impacted teeth can be left in situ but under observation with periodic clinical and radiographical follow up. Other cases kept under observation include patient refusal, uncontrolled systemic condition contraindicative of surgical intervention, geriatric patients with deeply seated disease free impacted tooth and retention of aesthetically pleasing and functionally stable deciduous tooth. Autogenous transplantation is another treatment of choice in the cases with normal position of the adjacent and adequate space for the impacted tooth. However, it requires complete root formation and prognosis is unpredictable in long term. Mechanical reposition of the impacted tooth is possible if adequate space persists. It can be done in three ways

1. Exposure of the tooth surgically and allowing passive eruption of the tooth in case of favorable angulation
2. Forced eruption with orthodontic alignment
3. Realignment of the adjacent teeth and aesthetic modification of the teeth in case of difficulty in favorable positioning of the tooth despite having space for eruption

Orthodontic treatment begins after cessation of pubertal spurts.² Surgical removal of the tooth is mandatory in following conditions:²

1. Failure or refusal of other treatment modalities
2. Presence of infection, cysts, tumor, pain
3. Periodontal status of the adjacent tooth is affected
4. Therapeutic extractions
5. Root resorption of the adjacent tooth

Procedure is mainly via intraoral approach either labially or lingually, although literature does suggest extra oral approach in few cases. If found in association with any other pathology, surgical excision of the associated lesion is necessary to avoid complications.

CONCLUSION

Bilateral mandibular anterior impaction is a rare phenomenon. Designated treatment plan is highly dependent on the age of the patient. Choice of treatment varies from non-invasive to invasive procedures keeping in mind the aesthetic and functional interest and

need of the patient and possible complications associated with the same.

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