CASE REPORT

MANAGEMENT OF AN UNUSUAL FOREIGN BODY (METAL BALL) INTO A DECIDNOUS TOOTH- A rare case report

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Abstract

Children and infants are known to naturally put objects in their mouth. However it is rare to see a foreign object in a deciduous tooth. The mention of such an incidence in dental literature is very rare. The following case reports of a foreign body (metal ball) lodged in a deciduous tooth of a 4 year old female patient.

Key Words Foreign body (Metal ball), deciduous tooth, permanent tooth bud.

INTRODUCTION

Although putting any kind of objects into mouth is very common during early childhood. But impinging of foreign body into a deciduous tooth is not commonly reported. Usually children do not report to their parents about this kind of incidence, because of fear to get punished. Very low rate of prevalence nearly (1 to 2%) of exactly impinging foreign body within/through a deciduous tooth, where developing tooth bud is present underneath the intact deciduous tooth. Any tooth can be affected in this way but the occurrence rate in higher for posterior teeth because of their larger width and wider occulsal surface with respect to other teeth in the oral cavity. Clinical appearance is very rare, which makes it an unique one of its kind.

Though it is rather very rare that foreign body insertion cases have been documented in various dental literature, Example : i) stapler pin impinged in dental pulp[6] and root canal[9] , ii) Metal wire lodged in the pulp chamber, iii) broken needle present in both side of the tooth. This present article is focused on removal of the foreign body from the affected deciduous tooth in most preventive approach, iv) inner tube of a biro forming a coller in the cervical one third of a tooth[7], v) screw found in pulp chamber[11] , vi) Iatrogenic influenced foreign body - broken endodontic instruments[10] , vii) It is reported that in some adult patient metal strap found in premolar region[12]. The present article is focused on removal of the unusual foreign body from deciduous tooth.

CASE REPORT

A 4-year old female child came to the department of Dental Surgery, Out-Patient Department (OPD) of Diamond Harbor District Hospital with the chief complaint of pain and discomfort in the left upper back teeth since last evening, due to accidentally insertion of a unusual foreign body through her decayed deciduous tooth. There was no swelling present. The patient had no significant medical and dental history.

Extra-oral examination had revealed no such gross abnormalities. On intra-oral examination, it had revealed that, generalized grade - I stain present and oral hygiene is not maintained properly. The patient have complete primary dentition. A medium size metal ball having well polished surface (foreign body) has impinged through the decayed area on 64 (FDI – system) / +D (Z-P system) tooth. The affected tooth is grossly decayed (disto – buccal portion is mostly affected) also having dark stain in occusal surface grooves. The tooth was immobile. On closure observation, it was found that approximately 2/3 portion of foreign body (metal ball) was inside the tooth and rest

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was outside of it. The foreign body was interfering the normal occlusion and the child could not take her daily meal due to difficulty in chewing because during chewing some portion of the foreign body was interfering with the opposing tooth and causing this comfort in the left side of temporomandibular joint. Due to shape and unusual position it was practically impossible to grip the foreign body by any forcep or other instruments.

An intra-oral periapical radiograph (IOPAR) was advised to get an exact idea about the location of foreign body. The radiograph revealed that the foreign body is mostly placed in the coronal pulp portion of the pulp chamber, disto-proximal aspect w.r.t. +D (Z-P system) tooth/64 (FDI – system), however in closure interpretation, 1st premolar tooth bud is present underneath the affected tooth. The 1st premolar is in crown formation stage. Permanent 1st molar (respective side) tooth bud is also present on its respective location under the soft gum pad on the left upper maxillary teeth region. Both erupting tooth buds are normal and no abnormal radiolucency was found with respect to them.

The patient was taken to different rural clinics, but the problem could not be properly treated. The child was utterly confused and traumatic due to pain and uncomfortable feeling. The decision has taken to remove the foreign body under local anesthesia by keeping the deciduous tooth remain intact and immobile in its own position.

Patient was advised for pulpectomy and followed by proper restoration[5]. Parent counseling was done. Patient has been kept on regular follow up. Patient has been kept a regular follow up. Patient is asymptomatic.

CLINICAL PROCEDURE

Patient's guardians were properly informed about the immediate and delayed consequences. The operating surgeons were decided to remove the foreign object/body but keeping the affected tooth intact in its position.

Picture 1 - Pre Operative Stage, Intra oral view, Occulsal aspect.

Picture 2 - Post operative view, Intra oral view, Occluasal aspect

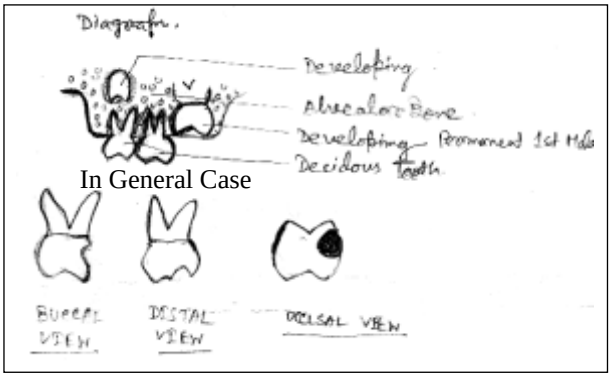
Picture 3 – Removed foreign body (Metal ball – 4 mm) From left maxillary deciduous 1st molar tooth.

Operating surgeons had created an artificial screen by sterilized gauge and put that in her mouth in such way, so that it can prevent the aspiration/ swallow of the foreign body during procedure. Also the operating surgeons had recontoured the Sheperd's hook end of an explorer, by the help of an orthodontic plire. So that it can be engaged more deeply through the decayed area seen in the crown portion of affected tooth (64 FDI) from distobuccal aspect. Primary intension was to engage the instrument as deep as possible by which it can be placed behind the foreign object/body. By giving minimal traction /pullying force the impinged foreign body came out slowly from the tooth. During the procedure clinicians have tried to minimize the chances of luxation of the affected tooth and troma to the surrounding tissue structures.

Measurement of the foreign body is done by vernier caliber instrument, its exact diameter is 4mm (>1/8 inch) and it is confirmed that the object is made up of ferromagnetic substance by its magnetic property.

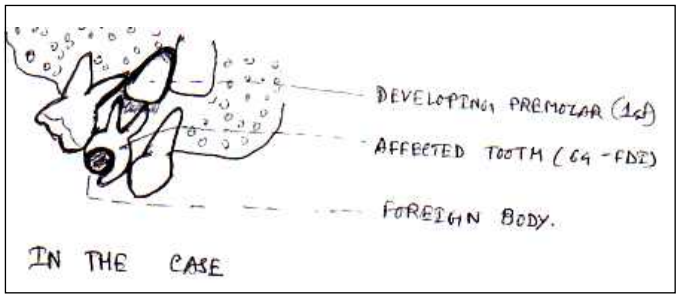
DISCUSSION

All though insertion of foreign body is very commonly seen in children and infants. But insertion of an metal ball through a decayed deciduous tooth is



Picture 4 - In General View of development of 1st pre molar were deciduous teeth are intact.

Picture 5 - An illustrative Ischematic Diagram showing the normal orientation of developing 1st pre molar tooth bud and fully erupted deciduous 1st & 2nd molar, loss of tooth structure due to caries from different visual aspect.



Picture 6 - The radiograph showing the exact location of the foreign body.

very rare case where the affected tooth is not in exfoliating stage, which makes the case report more unusual perspective. Close clinical examination, elucided that the remaining buccal and distoproximal was of the crown is very thin and their was a high chance of fracture of the tooth due to any unusual-uneven pressure in the process of removing the foreign object.

Radiograph shows developing tooth bud is present underneath the deciduous left maxillary first molar (+D), mostly the developing 1st premolar tooth bud (crown) is present, which is in between 4th-5th stage of development, according to Nolla's tooth development classification stage. The 1st premolar (crown) is roughly 2/3rd developed. Although the tooth (+D) was decayed but their was no such furcal radiolucency found in the radiograph and clinically the tooth was immobile, which is a vital criteria for deciding the treatment protocol (pulpectomy).

The foreign object has an approximate diameter of 4mm on the radiograph and most of its part is impinged into the pulp chamber, mostly distoproximal aspect.

Possible immediate complications are :

a) Due to accumulation of food surrounding the foreign object may cause localized infection.

b) Occulsion is interfered by the foreign object during chewing causes discomfort and pain in left temporomandibular joint region.

c) Aspiration of the foreign body may cause any severe medical emergency situation.

Possible delayed complications are :

a) Normal deciduous tooth acts as a natural space maintainer. So early loss of deciduous tooth may give arise any kind of mal-alignment in permanent dentition.

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CONFLICTS OF INTERESTS

There are no conflicts of interest.

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