



**ORIGINAL RESEARCH PAPER**

**Endodontic**

**MANAGEMENT OF MANDIBULAR MOLAR PERFORATION- USING MTA AS SEALING MATERIAL.**

**KEY WORDS:** Furcation Perforation, MTA, Microleakage

**Dr.Darshan Dakshindas\***

MDS Assistant Professor, Department of Conservative Dentistry, Government Dental College \*Corresponding Author

**Dr.MM Warhadpande**

MDS & HOD, Department of Conservative Dentistry, Government Dental College & Hospital, Nagpur

**ABSTRACT** Unpredictable endodontic root/pulp chamber floor perforations resulting in unacceptable high rate of clinical failure has now been a lesser threat with the advent of new technologies and biocompatible materials that utilize the applications of basic research along with tissue engineering concept in clinical practice. Present case report illustrates the use of MTA for the repair of the perforation defect and regeneration of the lost periodontium in furcation area. The autologous and biocompatible nature of the components of MTA seems to be beneficial for the long term clinical results obtained in our case.

**Introduction-**

Iatrogenic pulp floor perforation can occur if the operator becomes disorientated when trying to locate canal orifices. Perforation repair can be technically challenging, and offering referral if treatment is beyond the expertise of the operator is good practice. Management of iatrogenic perforation is dependent on several factors (Fuss and Trope, 1996). There is a high risk of micro leakage when perforation occurs at crestal bone level. Obtaining adequate coronal seal can be difficult, and direct communication with the oral cavity via the periodontal tissues means the prognosis may be guarded. If bone is present on the external aspect of the perforation, repair is normally feasible. There are numerous perforation sealing materials used in endodontics like Calcium Hydroxide, Glass Ionomer Cement, RMGIC, Composite, MTA etc. This paper describes a case of mandibular molar perforation sealed using Mineral Trioxide Aggregate (MTA) as a perforation sealing material<sup>1</sup>.

**Case Report-**

A 36 year old male patient was referred to our center after a failed attempt of root canal treatment. He had pain and intermittent bleeding from his permanent mandibular right first molar. On clinical examination, access opening was seen with 46 and a cotton plug was placed in it. The tooth was painful on percussion.

IOPA revealed furcation perforation in 46 (Fig 1). Non-Surgical repair of perforation with MTA after root canal therapy was planned and patient was appointed accordingly.

After achieving profound pulpal anesthesia, 46 was isolated using rubber dam and the cotton plug was removed and the chamber was copiously irrigated with 5% sodium hypochlorite. The root canal orifices were located and they were blocked using G.P plugs. The perforated area was irrigated with 2% Chlorhexidine and then sealed with MTA. A wet cotton plug was placed on it and temporary restoration was placed in 46. Patient was recalled after 24 hrs and Root Canal Therapy was completed. (Fig2)

After 6 month recall (Fig 3) the non-symptomatic tooth was referred to department of Prosthodontics for cusp capping.



**Fig 1- Perforation seen in furcation of 46**



**Fig 2- Perforation in 46 sealed with MTA**



**Fig 3- 6mths follow up of 46**

**Discussion-**

A tightly sealed repair in the perforation site is the key to successful treatment as it disrupts path of microbial contamination and guards the periodontium apparatus for optimal healing. It is stated that mineral trioxide aggregate is not only able to create a biocompatible barrier against which the repair material can be packed, but also it acts as a repair material itself that provides a physical seal when applied in perforation repair<sup>2</sup>. MTA cement proved to be similarly and reliably applicable, both as a barrier and repair biomaterial<sup>3</sup>; MTA stimulates the formation of an additional biological seal via hydroxyapatite sediments at the interface between the biomaterial and soft vital tissue.

**REFERENCES :**

- 1) A Review on Perforation Repair Materials Abhijeet Kamalkishor Kakani , Chandrasekhar Veeramachaneni, Chandrakanth Majeti , Muralidhar Tummala , Laxmi Khiyani Journal of Clinical and Diagnostic Research. 2015 Sep, Vol-9(9): ZE09-ZE13
- 2) Ghodduji J, Sanaan A, Shahrami F. Clinical and radiographic evaluation of root perforation repair using MTA. NY State Dent J. 2007;73:46-9.
- 3) Schwartz RS, Mauger M, Clement DJ, Walker WA 3rd. Mineral trioxide aggregate: A new material for endodontics. J Am Dent Assoc. 1999;130:967-75