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TRANSIENT APICAL INTERNAL RESORPTION A RARE CASE REPORT

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ABSTRACT

Root resorption is the osteoclastic activity caused by dental trauma like accidents, surgical procedures like reimplantation, excessive pressure or irritation from bleaching agents from sodiam perborate that can lead to loss of dental hard tissues. Internal root resorption is a inflammatory process initiated within the pulp space due to chronic irritation with the loss of dentin. Internal root resorption of the affected tooth create great challenge for endodontist in preparation and obturation of the canals which is effected by internal resorption. Transient apical internal resorption is a self-limiting process followed by spontaneous repair by itself. As the resorption defect is usually too small to even be detected radiographically.This paper present the case report of Transient internal root resorption in the apical third region in the maxillary central incisor caused by trauma 15 years back which was successfully managed by endodontic treatment.Twelve month follow up demonstrated clinically asymptomatic and adequately functional tooth, with radiographic signs of healing.

Key Words:- Trauma, Transient Internal Resorption, Self limiting process

INTRODUCTION :-

Bell first reported on internal resorption in 1830[1]. Internal root resorption is a resorptive defect as a result of inflammation which caused resorption of the internal part of the root due to necrosis of the odontoblasts .It is caused by transformation of normal pulp tissue into granulomatous tissue with giant cells, which resorb dentin[2]. Internal resorption happened in theinner surfaces of dentinal walls that form the pulp cavity[3]. Internal resorption discovered through periapical radiographs occassionally revealing a uniform, round to oval radiolucent enlargement of the pulp space. In the cases of accidental trauma, the interpulpal hemorrhages occurs which forms the blood clots that are replaced by granulomatous tissue and a giant multi-nuclear cells that resorb dentin[4]. Resorption appears sometimes as a pink stain as the enlarged pulp become visible through the thin walls of the crown [5]. It is also called as Pink tooth of Mummery or odontoclastoma [6]. The pink color is due to the granulation tissue in the coronal dentin, undermining the coronal enamel. Transient apical internal resorption is another form of trauma induced non-infective root resorption which is usually too small to even be dectected radiographically which was identified by Andreasen in 1986[7].This resorptive process can follow luxation injuries and may be associated with a transient apical breakdown – recognized by a confined periapical radiolucency which resolves within a few months. Often there is a progressive color change due to intrapulpal haemorrhage[8]. In the case of internal resorption, the contours of the canal are discontinuous and a slight protrusion in the canal space is normally visible on the radiograph[5]. The progress of internal resorption depends on vital tissues. Treatment must aim at complete removal of the resorptive tissue from the root canal system, in an attempt to prevent further loss of hard tissue. However, selecting a suitable restorative material for these cases remains a challenge, especially if tooth loss is extensive. Various materials like Glass ionomer cement, Light-cured composite resin, Amalgam, Mineral Trioxide Aggregate (MTA) and Biodentine have been recommended to restore the resorption . Recently, Septodont introduced a bioactive calcium-silicate based formulation (Biodentine) which could conciliate high mechanical properties with excellent biocompatibility, as well as a bioactive behaviour. Manufacturer claim its sealing ability to be equivalent to glass-ionomers, without requiring any specific conditioning of the dentine surface. The endodontic indications of Biodentine are similar to the usual calcium silicate based materials, like the Portland cements (i.e. ProRoot MTA). However, Biodentine has some features which are superior to MTA e.g. it's consistency is better than MTA's and it does not require a two-step obturation as in the case of MTA because of its faster setting time of about 12 minutes [9-11].

This article described a case in which patient came with complaint of pus discharge in the vestibular area in relation to tooth 11. After taking the intraoral periapcal radiograph Internal resorption in

the apical third portion in the root was detected in relation to tooth 11 .This case report presents successful endodontic treatment of the right maxillary central incisor (11) and fill the resorption defect with the help of Biodentine with 12 month follow up.

CASE REPORT

A 55 year old, male patient came to the Department of Conservative Dentistry and Endodontics with chief complaint of pain, swelling and pus discharge from upper right front tooth region since 1 month back (**Fig 1**). He gave the history of trauma 15 years ago.

Clinical examination revealed sinus tract in the labial vestibule in relation to tooth 11 and discoloration with respect to tooth 11. Pulp vitality tests were performed showed no response with respect to tooth 11. Radiographic examination of the same teeth revealed an oval shaped radiolucency in the apical third of root of tooth 11 (**Fig 2**).Diagnosis of Transient internal resorption in relation to tooth 11 was made. It was decided to do non-surgical endodontic treatment of the right maxillary central incisor(11).

An access opening was done for the right maxillary central incisor and canal was then negotiated and working length is determined with the help of 20 number k file**(Fig 3)**followed by Biomechanical preparation of the tooth was done with K-files and canal was irrigated alternating with saline and 5.25% sodium hypochlorite.Master cone was selected. Biodentine was mixed and fill the resorption defect in the apical third of the canal and the remaining canal was the obturated using lateral condensation technique. (**Fig 4**).Six month follow up radiograph revealed successful healing of the lesion (**Fig 5**)

DISCUSSION:-

Resorption is a condition associated with a physiologic or a pathologic process resulting in a loss of dentin, cementum, or bone[12].Internal resorption is a pathologic intra-radicular process that involves permanent teeth during which transforming pulpal cells resorb dentinal walls[13]. The exact cause of Internal resorption is unknown; however, chronic inflammation of coronal pulp tissues and loss of predentin following traumatic injuries have been stated as the major factor for starting Internal resorption.

Clinically Internal resorption has usually no symptoms and is diagnosed during routine radiographic examination. Internal root resorption was not detectable on radiographs at their early stages, when they are small, also ecause of limitations of this 2-dimensional periapical radiograph of three dimentional object..Radiographically, Internal resorption illustrates a uniform radiolucent lesion inside the root canal space that disturbs root canal natural outline .internal resorption in the canal space would not displace following obtaining radiographic images with different angulations[14]. The root resorption requires two phases: injury and stimulation. Injury is related to the nonmineralized tissues covering the internal surface of the root canal, the predentin and the odontoblasts layer. Infection is the

main stimulation factor in internal root resorption.. Teeth are not symptomatic in the early stage of resorption. The resorbing cells in the pulpal space, coming from the apical vital part of the pulp[15].

Internal resorptions can be located at the level of the crown or in different thirds of the root[3]. Transient apical internal resorption is a self-limiting process followed by spontaneous repair. As the resorption defect is usually too small which is very difficult to detect radiographically.The treatment of Transient internal resorption is to remove vital tissues from the root canal space to prevent further resorption of dentine. The success of treatment in cases of internal resorption depends upon the size of the resorptive lesion[16].

When determining a prognosis for a tooth with internal root resorption after endodontically treatment, the need for radiographic control every six months for at least two years should be considered. Such fact is due to the possibility of the area involved by the resorption to present a lateral canal, which would allow the continuity of the resorption process and compromise the treatment[3]. it will be important to follow these cases to check for continued absence of symptoms for a long time.

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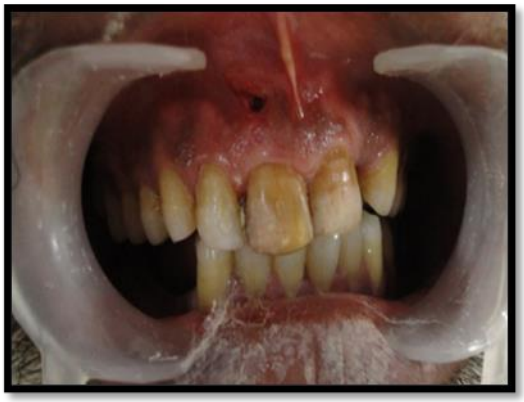

Fig No:- 1

Fig No:- 2

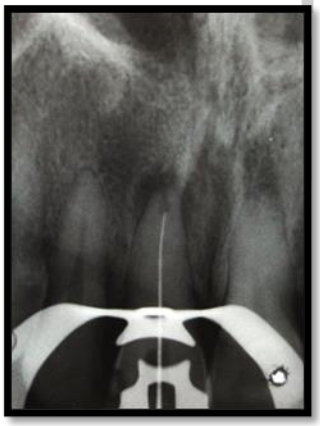

Fig No:- 3

Fig No:- 4

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