



## **Management of Gutta-Percha over Filling of Mandibular First Molar By Intentional Replantation: Case Report**

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**Abstract:** One of the most critical and difficult situations in endodontic field is to retrieve the overfilling material which considered as a foreign body by immune system and may initiate the foreign body reaction in many cases. The removal of these gutta percha may be difficult or impossible, this situation may necessitate the periapical surgery which may not be amenable due to close proximity to vital structures, thus intentional replantation may be considered the best treatment option in such cases.

**Keywords:** intentional replantation, overfilling, RVG, periotome.

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### **I. Introduction**

Extrusion of root canal filling materials beyond the apical foramen is a recurrent complication in endodontic practice, it may cause damage to the periapical osseous tissues and may initiate the foreign body reaction, damage to the inferior alveolar nerve or maxillary sinus [1-3]. The non-surgical retrieval of extruded gutta percha beyond the apical foramen may be impossible or difficult [4]. Thus, the periapical surgery may be indicated but in some situations it may not be impossible due to proximity to vital structures and dentist experience for performing the periapical surgery [5]. In these situations, the clinician should direct his sight to another option of the treatment before extraction of the tooth which is intentional replantation (IR). Intentional replantation (IR) or "Controlled Avulsion" is a modality of treatment since 10<sup>th</sup> century by a well-known Arabic surgeon Abulkasim El Zahrawy [6]. IR is the process of controlled extraction of the affected tooth and treating it extra orally then reinserting it again in its socket [7]. It doesn't look like all other dental procedures in terms of patient or even clinician acceptance and continuous development which may be related to many factors like patient education level and awareness also some failure cases mainly due to ankylosis and root resorption may cause the dentist to disagree with this line of treatment [8]. The evaluation of healing of the IR cases is mainly done by radiography [9]. Radiovisography (RVG) is an integrated part in the field of endodontics diagnosis and follow-up evaluation, it is a routine in daily work by all dental practitioners [10].

## II. Case Report:

A 24 years old female was referred to the Endodontic Department, Faculty of Dentistry, Alazhar University, Assuit Branch, the patient was presented with persistent pain after previous endodontic treatment from 7 months and retreatment from 4 months for the tooth #46.

The patient was asked for all past dental history and general medical history, she explained she has no previous dental treatment in this side with no existing medical condition. Dental examination was performed both clinically and showed composite restoration in the tooth#46, by radiographic examination by RVG ((vatech HD, South Korea) and x-ray machine (xgenus, de Gotzen s.r.i., Italy) was set at 70 kV and 8 mA. The exposure time for the PA was 0.200 s.) the periapical radiograph showed extrusion of the Gutta-percha beyond the apical foramen in both mesial and distal root with file separated at the apical third of the mesiobuccal canal(fig:1).

Furthermore, the tooth was examined for presence of developmental anomalies, cracks, fractured root, large furcal perforation and severe root curvature and showed no one of them.

The possible treatment option (periapical surgery and intentional replantation) was explained to the patient with all possible outcomes and complication of each procedures and the patient was verbally accept the IR treatment option. The written consent was signed and obtained from the patient.

The inferior alveolar nerve block, lingual and long buccal nerve were anaesthetized with carpule of articaine hydrochloride local anesthetic solution with epinephrine (Artinibsa 40 mg/0.01 mg /ml, laboratories inibsa, S.A., Spain.), then the occlusal surface of the examined tooth was reduced infraocclusion.

the tooth extraction was achieved byusing periotome (Medica, Titanium Blue Coated, pt3, BCI 3972, Pakistan). The periotome was inserted in the buccal, mesial, lingual and distal surfaces of the tooth at the bone level with apical pressure, then the tooth delivery was done by using the conventional forceps (Falcon Medical Polska sp z.o.o., Poland) (fig: 2 a, b &c). The Socket was examined for any root fragment or filling residue then the patient was asked to bite on 2x2 piece of gauze. Tooth was held from the crown by a well moistened gauze without. The apical 3mm from the root apex was cutted by using fissure bur mounted in high-speed hand piece with coolant, then the retrograde cavity was done with depth of 3mm.within the root canal which is filled after that by retrograde filling material (MTA). After retrograde cavity filling the tooth was re inserted back into its own socket, the tooth was splinted by using 000 silk non-resorbable suture crossing over the occlusal surface for 1 week. The patient was instructed to avoid brushing in the side of splinting till splint removal. Chewing was avoided on this side with ibuprofen 600mg prescribed 4 days. The patient was informed for follow up evaluation (fig:3 a,b,c).



figure (1): radiograph showing over extruded gutta-percha in both roots with file separated in MB canal.

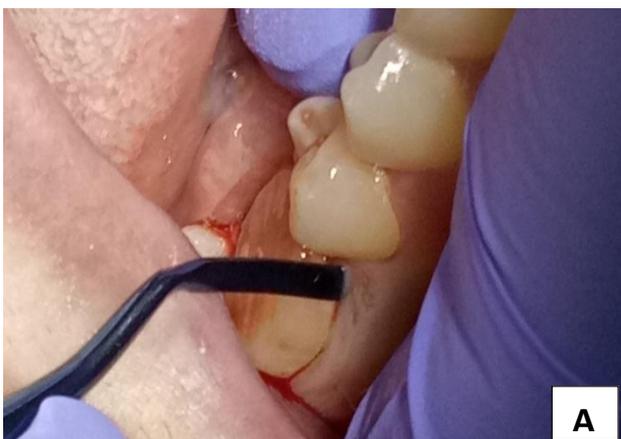


Figure (2): showing periotome assisted extraction (A), forceps delivery(B)and tooth handling (C)

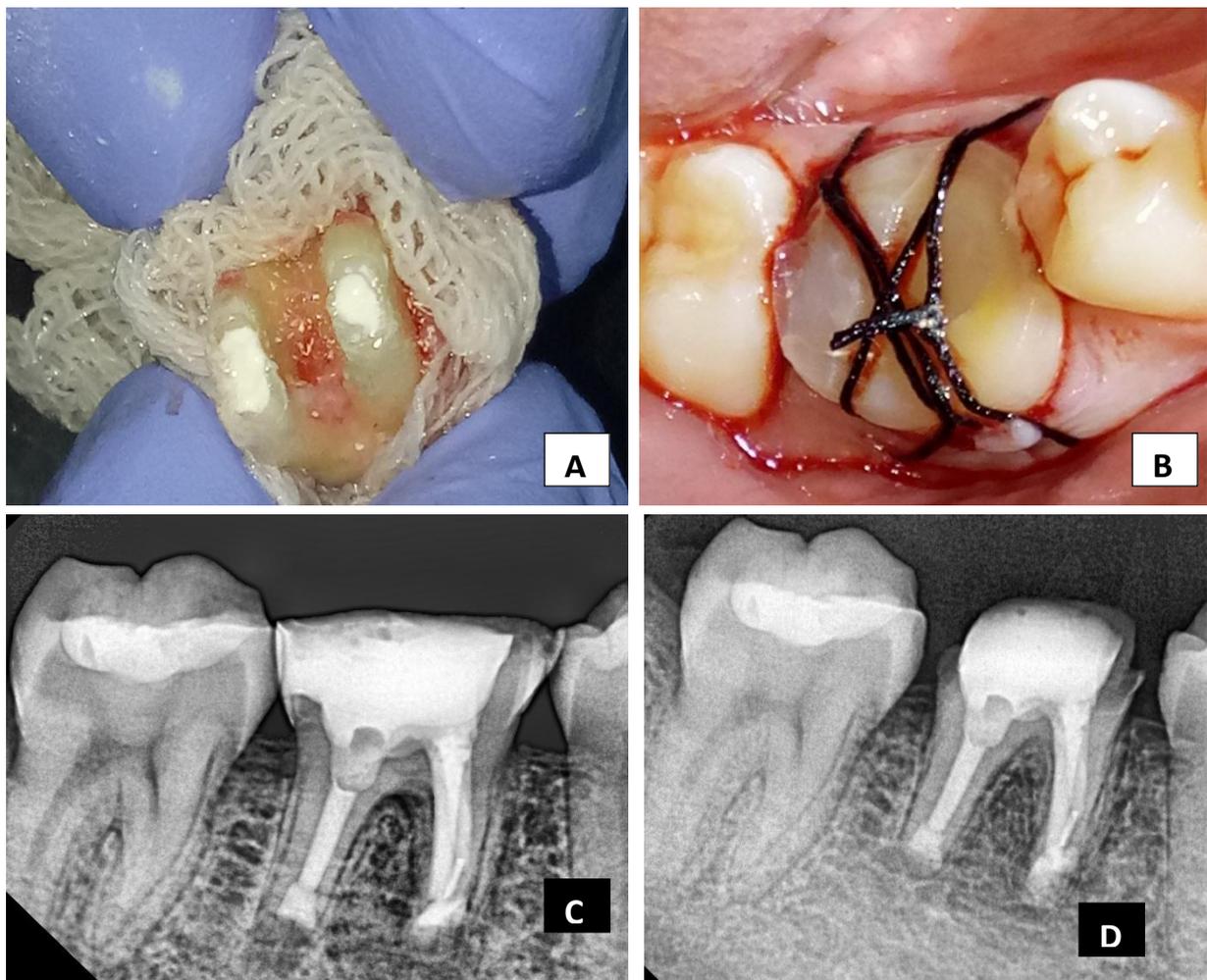


Figure (3): showed retrograde MTA(A),splinting (B),3month follow up radiograph(C) and 6 months follow up radiograph(D).

### III. DISSCUSION

Overfilling after endodontic treatment is a common complication that may require intervention [11].The difficulty in surgical management of the overfilled gutta percha in mandibular molars was the main cause behind the selection of this IR technique [5,12].Moreover, it is well known that the key factor for success of IR cases is atraumatic extraction. Hence the use of periosteal assisted extraction was designed for this case [13,14].In apicectomy stage the fissure bur was used due to a non-clogging property and leaving smooth surface behind it. Moreover, incidence of fracture and cracking after ultrasonic root end preparation in extracted teeth [6,15].Moreover, non-resorbable suture was used for splinting in this study as it is simple way and a 7 days to avoid the tooth ankylosis [16].in this case the patient was reviewed after 3 and 6 months and represent amazing healing criteria which may advocated to a traumatic extraction technique and strict handling protocol.

### IV. Conclusion:

Intentional replantation is suggested as available treatment option for management of over filling, moreover, the use of periosteal assisted extraction may help in a traumatic extraction and PDL saving.

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