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Tooth Replantation : the long extraoral time avulsed tooth

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I . Introduction

Dental avulsion is a rare and complex injury that affects multiple tissue compartments. The periodontal ligament, alveolar bone, cementum, gingiva, and dental pulp are all changed when a tooth is avulsed. The single most important factor in the success of replantation is the speed with which the tooth is replanted. Of utmost important thing is the prevention of drying which causes loss of normal physiologic metabolism and morphology of the periodontal ligament cells. Every effort should be made to replant the tooth within the first 15 to 20 min. As the extraoral time increases, there is a diminished likelihood of PDL healing.

Time is of the essence when performing replantations, as there is a greater chance of success when the root is prepared quickly. When the root has been dry for 60 min. or more the PDL cells are not expected to survive. In these cases, the root should be prepared to be as resistant to resorption as possible.

The following cases detail replantations that were performed when the extraoral time had exceeded one hour.

II . Clinical case

• Case 1

He was a 37-year old man.

At 11:00 am, he came to emergency department. He was intoxicated. The #11 and #21 teeth were avulsed, and the #12 had a crown fracture and mobility II. At the emergency department, the avulsed teeth were stored in cold saline.

The teeth were then prepared with the extraoral endodontic treatment. This consisted of grinding the denatured tissue of the periodontal ligaments from the avulsed teeth using a superfine diamond bur.

The teeth were soaked in a solution made of tetracycline and acidulated phosphate fluoride for about 5 min. Then the canal enlargement was carried out and root-resection was performed with 3mm of extension. The retrograde filling was used IRM. From #13 to #23, a resin-wire splint was inserted. Amoxapen was prescribed to him for 3 days.

After 10 days, the splint was removed. At that time, it was found that the #12 canal needed to be obturated, and this procedure was performed. The next day, from #12 to #21, a 3 unit temporary bridge was inserted. After

70 days, an examination of the progress of the teeth revealed a problem. The #21 was found to have a metallic sound when struck. This was indicative of ankylosis. Eventually, #11 had to be extracted because of periodontal problems.

Finally, about 100 days after the initial treatments, a permanent 3-unit bridge was restored.

• Case 2

She was a 26-year old woman.

At 8:00 pm, she fell down and the #11 and 21 teeth were avulsed. They were stored by her in dry gauze. She came to our department the next morning, 11:00 am. As soon as it arrived, the avulsed tooth was stored in the saline and tetracycline solution.

The avulsed tooth then had the decayed periodontal ligament with superfine diamond bur. The canal enlargement was made by cutting 3mm apically. The retrograde filling used the IRM. Then the canal was filled with vitapex. The teeth were soaked in acidulated phosphate fluoride for about 5min. They were then replanted.

The resin-wire splint was inserted. Amoxapen was prescribed to her for 3 days.

After 17 days, the splint was removed.

After 40 days, the canal was obturated with Obtura II. Walking bleaching was carried out on #11, 21 and 22. After this, resin core was performed.

III. Discussion

When the root has been dry for 60 min, or more, as a general guideline, teeth should be soaked in acid for 5 min. to remove all remaining periodontal ligament and thus remove the tissue that will initiate the inflammatory response on replantation. The tooth should then be soaked in 2% stannous fluoride for 5 min. and replanted. The endodontics may be performed extraorally.

If an avulsed tooth has been extraoral for an extended period of time, the prognosis for replantation will be improved if the proper treatments are carried out. Additionally, long-term follow-up examinations are essential in the cases of avulsed teeth.

In some situations, dentists will not attempt to replant avulsed teeth that have been extraoral for more than one hour. However, it has been found that some attempts to replant teeth after long extraoral periods meet with success. For this reason, every effort should be made to execute the proper treatments for replanting avulsed teeth.