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Case Report

Root retrieval by endodontic K File

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ABSTRACT

Case Report discusses 3 cases of the recovery of root tip or root by root canal instrumentation in differently indicated circumstances. It recommend the use of endodontic files for the removal of root tips in orthodontic extractions and root tips in close proximity to maxillary sinus and inferior alveolar canal.

Introduction

During specific minor surgical extraction procedures in a dental clinic, a few situations can be dealt with the vigilant use of Endodontic armamentarium. Authors hereby recommend the use of endodontic files for the removal of root tips in close proximity to maxillary sinus and inferior alveolar canal. The correct indications for use of instruments are of prime importance.
Authors have discussed the 3 cases of the recovery of root tip or root by root canal instrumentation in differently indicated circumstances.

Report of cases

Case 1

A healthy 14 years old male patient presented for the therapeutic orthodontic extraction of right maxillary first premolar. After obtaining informed consent local anesthesia (lidocaine 2%) with 1:80000 adrenaline was administered to the patient as an infra-orbital nerve block and nasopalatine nerve block.
After the effectiveness of blocks with positive subjective symptoms and objective signs, periosteal elevator was used to reflect the flap. After reflection of flap the maxillary premolar forcep was applied and adapted to the premolar. Traction force was applied for the extraction of tooth. During extraction it was seen that there was palatal root fracture and rest of the tooth was extracted (Figure 1). It was choosen to remove it with endodontic file so that amount of bone removal can be minimal as required for orthodontic cases. First a 15 number file was inserted to localize and see the patency of the canal. After visualizing the canal a 45 number 25 mm endodontic file was threaded into the canal and traction force was applied. By hand the pull was not sufficient to pull the root so the file was holded with mosquito forcep and traction pull was given. The root was recovered without any trauma to the other surrounding structures like bone and soft tissue. And also the time taken to extract the root was minimal with no specialized surgical instrumentation.

Case 2

A middle aged adult male came for the removal of right maxillary first molar. After visualizing the intra oral apical radiograph it was seen that palatal root was in close approximation with maxillary sinus (Figure 2). After obtaining informed consent maxillary posterior superior alveolar, infra orbital and greater nerve blocks

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Figure 1: Retrieval of root with 45 No endodontic K file after Orthodontic therapeutic extraction

Figure 2: IOPA X-ray representing the close proximity of maxillary sinus with the palatal root of maxillary first molar

Figure 3: Clinical photograph showing the remaining palatal root in socket of maxillary first molar

Figure 4: Retrieval of palatal root of maxillary first molar with 30 No endodontic K file

Figure 5: IOPA X-ray showing the close proximity of distal root to the inferior alveolar canal

were given with lidocaine 2% with 1:80000 adrenaline. After the effectiveness of anesthesia periosteal elevator was used to elevate the flap. Maxillary right cowhorn

Figure 6: Retrieval of distal root tip of mandibular second molar with 45 No endodontic K file

forcep was used for the extraction as the tooth was grossly decayed with intact furcation. After extraction it was observed that palatal root was fractured (Figure 3). Decision regarding the use of endodontic file for the retrieval of root was made as the extensive procedure would have caused the slippage of root into the maxillary sinus or removal of bone in intimate relation to the sinus. Similarly the canal was localized and patency was checked with 15 number file. And subsequently a 30 number 25 mm file was threaded and by giving the traction force the root was retrieved within few seconds without any complications (Figure 4).

Case 3

A 62 year adult male presented for removal of painful symptomatic mandibular right second molar which was in proximity to inferior alveolar canal (Figure 5). After obtaining informed consent inferior alveolar and long buccal nerve block were given with lidocaine 2% with 1:80000 adrenaline. After the effectiveness of anesthesia periosteal elevator was used to elevate the flap. Mandibular molar forcep was applied to extract the tooth. After extraction apical part of distal root was observed to be fractured and was in close proximity to inferior alveolar canal. Socket site was cleared of blood and after obtaining appropriate visualization, canal of remaining root tip was located with 15 no file and was threaded with 45 no endodontic file. Successful retrieval was achieved within negligible time without much trauma to related hard and soft tissue (Figure 6).

Discussion

The use of endodontic file for the retrieval of root tips in some special situations is a well appreciable tool. Firstly a 15 or 10 number file can be used for visualizing the canal and checking the patency of the canal. After that such endodontic file should be pondered this can be threaded easily into the canal by giving just two or three twists. Files of 40 to 80 number 25 mm in size can be

used.[1] Due consideration should be given to not apply extensive apical force while threading the endodontic files.

The pros and cons of the technique are to be weighed before using this technique. According to the authors few indications of the use of endodontic file are retrieval of root tips or root of orthodontic extraction, roots close to maxillary sinus, apical third of the roots which would require extensive removal of bone, root tips close to vital structure like inferior alveolar canal where use of instruments can be hazardous. However usually the use of endodontic file for retrieval of root is free from complications and it can be a reasonable alternative for retreival of root tips or root as and when needed.

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