CASE REPORT

Specialty Dentistry for the God's Forgotten Child

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ABSTRACT

Hemophilia constitute an assemblage of hereditary disorders caused due to the deficiency of one or more clotting factors leading to sustained clotting time and excessive bleeding tendency that may be ill-fated. Anticipation of bleeding during dental regimen by both patient and dental surgeon has been the elementary logic for curtailment of dutiful dental care for hemophiliacs. The apparent complexities in diagnosis and handling of a bleeding dilemma drives us to bypass such patients in clinical practice. This article presents a systematic approach to successful endodontic management in a patient with severe hemophilia A.

Keywords: Hemophilia, Endodontic management, Clotting time, Clotting factors, Hereditary disoders.

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INTRODUCTION

Hemophilia has often been called the royal disease. Queen Victoria of England was a carrier of hemophilia gene and subsequently passed the disease on to several royal families.[1] Hemophilia is an X-linked congenital bleeding disorder due to the deficiency of factor VIII or also known as the antihemophilic factor.[2] It is broadly divided into hemophilia.

A (deficiency of FVIII), hemophilia B or Christmas disease (deficiency of FIX) and hemophilia C or rosenthal syndrome (deficiency of FXI). Fear of bleeding during dental treatment by both patients and dental surgeon has been the primary reason for lack of good dental care for hemophiliacs.[3] Systematic approach is mandatory while handling hemophiliacs the inadequacy of which can lead to disastrous aftereffects. This article presents a case report of successful endodontic management in a child patient with severe hemophilia A.

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CASE REPORT

A boy aged 12 years with known history of hemophilia A reported to the Department of Pedodontics and Preventive Dentistry, Rama Dental College Hospital and Research Centre, Kanpur, Uttar Pradesh with a chief complaint of intermittent pain and swelling in lower right back teeth region since 3 days.

On clinical examination, deep carious cavity was seen in relation to 46. The tooth was tender on percussion. Electric pulp test and thermal pulp test were performed to test pulp vitality with 46 showing no response, thus indicating a nonvital pulp.

On radiographic examination, carious lesion was seen approaching the pulp. There was diffuse periapical radiolucency seen periapically at mesial and distal root of 46 (Fig. 1). On the basis of clinical and radiographic examination, a final diagnosis of chronic periapical abscess was made in relation to 46 and it was decided to opt for nonsurgical endodontic treatment considering patients medical history.

Before commencing with dental procedure, case was reviewed with the concerned physician and hematologist and opinion was undertaken with regard to the bleeding disorder. On investigation the patient was found to be severe hemophiliac with active factor VIII level less than 1%.

Treatment plan was confered with the patient and medical consent for root canal treatment was taken from parents prior to the procedure. Patient was given factor VIII intravenously, 1 hour before the treatment to buildup the concentration to atleast 50% so as to minimize the chances of postoperative bleeding.

As the tooth was nonvital, endodontic procedure was performed without the administration of local anesthesia. The procedure involved cavity preparation, removal of all carious tooth structure, making a straight-line access, extirpation of pulpal debris from the root canals using barbed broaches and copious irrigation with 2.5% sodium hypochlorite and normal saline. The working length was determined 1 mm short of the radiographic apex and canals were shaped with k-files until an apical preparation of ISO # 40 was achieved.

As there was periapical infection in 46, it was planned to place calcium hydroxide and iodoform paste (Metapex) in the root canal and was seal the tooth with temporary restoration (Fig. 2).

Patient was prescribed antibiotics and analgesics for 3 days and chlorhexidine mouth rinse to reduce microbial flora during appointments. The patient was then recalled after 7 days.

Tooth was completely asymptomatic on 7th day, without any swelling or pain so the patient was kept on further follow-up and was recalled after 4 weeks.

The patient when recalled after 4 weeks revealed significant healing (Fig. 3). At this appointment, the tooth was reopened, metapex was removed and the canal was obturated with gutta percha and AH plus sealer using the lateral compaction technique (Fig. 4). The final restoration was done with amalgam.

DISCUSSION

Hemophilia, being one of the most well-known bleeding disorder generally affects males on the maternal side with a prevalence of one in every 10,000 persons. Family history of bleeding is commonly observed in hemophilia patients. Recent discoveries have proved that both FVIII and FIX genes are prone to new mutation and as many as one-third of all patients may not have a family history of these disorders.[4]

The dental management of patients with hemophilia A invest on the severity of the condition and the invasiveness of the planned dental procedure.[5] Preventive and restorative treatments is of paramount concernment as the progressive dental conditions and subsequent therapeutics are more intricated and hazardous. However, both restorative and endodontic treatment should be carried out bearing some considerations in mind.

Endodontic therapies, such as pulpotomy, pulpectomy and root canal treatment are endorsed over extraction whenever possible. Avoiding instrumentation through the periapical area is of primo paramountancy in endodontic therapy. Nonvital teeth should be treated at least 2 to 3 mm short of the radiographic apex.[6] Use of high speed suction while carrying out dental procedure can mutilate the mucosa on the floor of the mouth and can cause hematoma or ecchymosis.

Tranexamic acid as a matter of course reduces blood loss and can be given topically or systemically.[7]

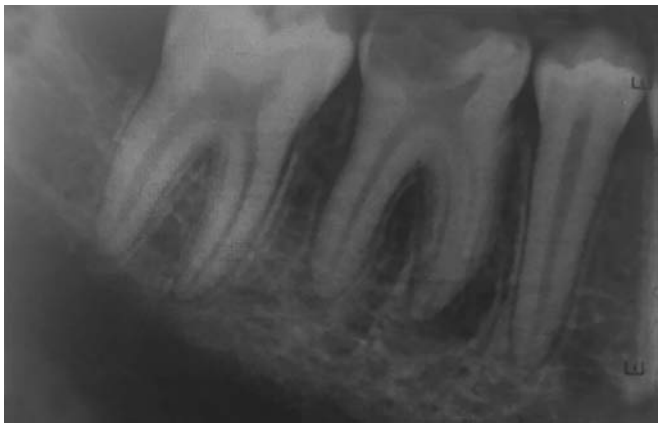

Fig. 1: Preoperative IOPA X-ray (IRT 46)

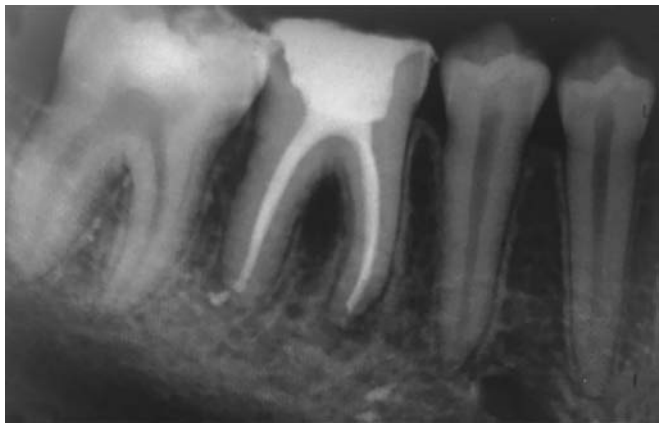

Fig. 2: IOPA X-ray after placement of metapex intracanal medicament (IRT 46)

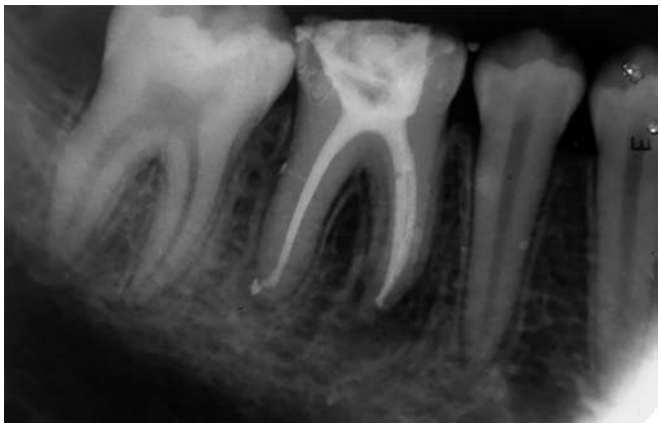

Fig. 3: IOPA X-ray after 4 weeks of metapex intracanal medicament (IRT 46)

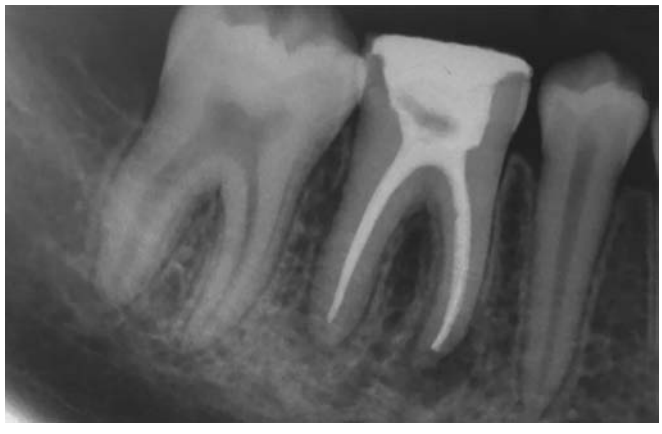

Fig. 4: IOPA X-ray after obturation (IRT 46)

Administration of intracanal injection of LA solution containing adrenaline or topical application of adrenaline 1: 1000 can be profitable to curtail bleeding.[8] Surgical endodontics requires FVIII replacement up to 50 to 75%. Local anesthetic regional blocks or injections into the floor of mouth must not be used in the absence of factor VIII therapy because of the possibility of hemorrhage hazarding the airway that may be life-threatening.[8]

The adoption of any nonsteroidal anti-inflammatory drug must be rationalized with the patients hematologist because of their effect on platelet aggregation, hence trustworthy alternatives for pain control are acetaminophen and COX-2 inhibitor.[9]

Therefore, it is justifiable to envisage that present day dental surgeon can and should administer the care so devotedly required by the hemophiliacs.[10]

CONCLUSION

Hemophilic patients forms a prerogative category for dental professionals, since after effects of dental treatment in the form of uncontrolled bleeding can be life-threatening. Anticipatory dental care is of utmost relevance to circumvent invasive procedures at a future date. Organized evaluation and foreknowledge of potential hazards is preferable rather than being encountered unaware with inadequate local hemostatic measures. Once diagnosed, strong emphasis has to be made on preventive measures, so that complex and completed therapeutic procedures can be avoided at later stage in life as hemophilia is a life long disease.

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