Emergency endodontic care of patient with inconclusive diagnosis of von Willebrand disease

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ABSTRACT

Introduction: Patients presenting bleeding disorders need special care when submitted to dentistry procedures. **Objectives:** The aim of this case report is to provide information on how to handle a patient with a probably diagnosis of von Willebrand disease and acute periapical abscess in tooth #23. **Methods:** The patient was a white female, 35 years old, who presented to the emergency program of the School of Dentistry - Federal University of Paraná, Brazil, with extensive decay below gum level, projecting into the palate, and crown fracture exposing the root canal to the oral environment. Attention was focused on isolating the operative field, which could not be done in the conventional manner due to the extension of the caries, the proliferation of gum tissue and the patient's systemic conditions. **Conclusion:** The strategy used in this case was effective in management of coagulopathy and allowed for emergency care to be carried out without complications.

Keywords: Von Willebrand factor. Endodontics. Periapical abscess.

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Introduction

Von Willebrand disease (VWD) is a hereditary bleeding disorder caused by deficiency or dysfunction of a protein called von Willebrand factor.[1] Diagnosis is performed in different steps.[2] Specific tests for a complete laboratory characterization are needed to confirm or exclude the diagnosis.[3] Meanwhile, patients are susceptible to emergency endodontic care.[4,5] Endodontic procedures can be developed safely and with predictable results as long as a correct treatment plan is established.

The aim of this clinical case is to describe endodontic emergency care for a patient with acute periapical abscess and VWD disorder suspect.

Case history

A 35 year-old woman presented to the Emergency Care Center of the School of Dentistry of the Federal University of Paraná, with pain in the left upper region. A discomfort in the canine fossa for approximately two weeks, culminating in fever and continuous, spontaneous and long-lasting pain that was not relieved by common analgesics was related. The patient presented history of relentless bleeding following dental extraction which required hospitalization six months ago. She presented a letter from the Medical Care Center of the Federal University of Paraná relating suspect of VWD, requiring dental treatment and reporting that 1.0 g of y-aminocaproic p.o. acid had been administered every 6 hours, for 7 days.

Clinical examination showed crown fracture and extensive decay, exposing the root canal to the oral environment for the last 4 months. There was sensitiveness to palpation and no extraoral edema. The radiographic examination showed a poor endodontic treatment limited to the middle third of the root canal and apical radiolucency (Figs 1 and 2).

The treatment was performed using anesthesia with 2% mepivacaine with 1:100.000 epinephrine (DFL Indústria e Comércio S.A., Rio de Janeiro, Brazil). The rubber dam could not be done in the conventional manner, due to the extension of the carious process, the proliferation of gum tissue and the patient's conditions. It was sequentially perforated three times in order to involve teeth #22, #23 and #24. After positioned, ethyl cyanoacrylate (Loctite® - Super Bonder Precisão - Henckel Ltda, São Paulo, SP, Brazil) was applied

Figure 1. Clinical aspects of tooth #23.

Figure 2. Radiographic aspects of tooth #23.

between the rubber dam and the periodontium on the vestibular and palate surfaces (Fig 3), irrigation with 1% sodium hypochlorite solution was used to disinfect the operative field and as an irrigating solution. Special instruments were prepared using files #15 and #20 according to Kobayashi,[6] to remove the filling material in association with orange oil (Citrol® – Fórmula & Ação – São Paulo, SP, Brazil). Instrument #70 (Dentsply-Maillefer, Ballaigues, Switzerland) penetrated a few millimeters in the apical direction, followed by instrument #60 (Dentsply-Maillefer, Ballaigues, Switzerland) which, when rotated and pulled, removed the filling material at once (Figs 4 and 5). As soon as the filling material was removed, drainage was present for few minutes. The root canal was completely emptied using instruments #15, #20 and #25 (Dentsply-Maillefer, Ballaigues, Switzerland) and filled with paramonochlorophenol 2% (PRP®- Fórmula&Ação- São Paulo, SP, Brazil) intracanal dressing.

An auxiliary suction tip controlled the slight bleeding of the gum tissue, originated from the inevitable trauma caused by the teeth conditions. Zinc oxide-eugenol cement (IRM® - Dentsply Indústria e Comércio Ltda, Petrópolis, Rio de Janeiro, Brazil) was used to seal the cavity (Fig 6).

Paracetamol 750 mg, 8/8 hours for 2 days and Amoxicillin 500 mg, 8/8 h for 7 days were prescribed and the patient referred to the Surgery department (Fig 7), where appropriate evaluation was performed in order to remove the remaining root.

Figure 3. Applying ethyl cyanoacrylate between the rubber dam and the periodontium.

Figure 4. Removing of the filling material.

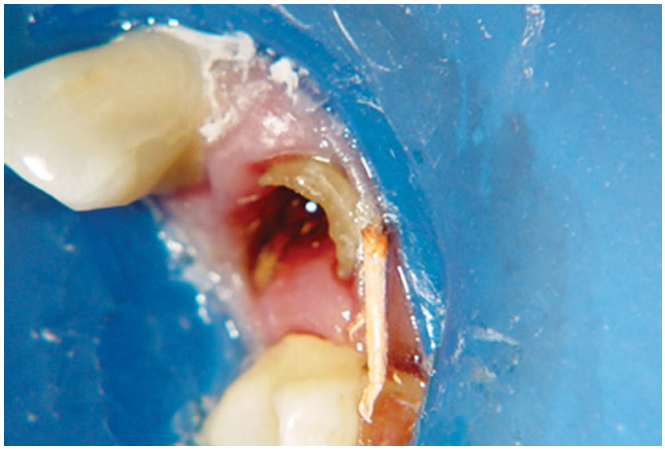

Figure 5. The filling material removed.

Figure 6. Zinc-oxide cement sealing the cavity.

Discussion

VWD is a heterogeneous clinical entity, with variable degrees of bleeding manifestations. It presents different clinical phenotypes, being the most common mucocutaneous bleeding, especially epistaxis and menorrhagia. Bleeding in other regions, such as the genitourinary tract and the digestive tract have also been reported, although less frequently.[3] The patient presented a chronic ulcer with active bleeding in the lower left limb, urinary bleeding, daily epistaxis and menorrhagia.

Complementary exams are necessary to confirm the disease: Screening tests for initial evaluation of hemorrhagic coagulopathies, specific tests for diagnostic confirmation, and discriminatory tests that allow the classification of the disease, which may take some time.[3]

Figure 7. Radiograph after root extraction.

The patient was conducted to the emergency care of the Dental School from the University Hospital presenting pain and infection, but the diagnosis of VWD was still not conclusive. The patient was under prescription of an antifibrinolytic. Extra care must be taken during dental procedures[3] in order to avoid complications.

There are no restrictions regarding the use of vasoconstrictors, which provide more time and comfort for endodontic emergency procedures.[4,7] In infiltrative and intraligamentar anesthesia techniques, prior administration of coagulation factors is not necessary. The administration is recommended for the inferior alveolar nerve blocking,[8] due to the possibility of bleeding in the retromolar region, with the presence of trismus and the risk of asphyxia.[4] The administration of an antifibrinolytic was beneficial because it prevented excessive bleeding following trauma to the hyperplasic gum tissue.[7]

The use of rubber dam is almost mandatory in modern endodontic practice to provide aseptic operating field and to protect the patient against foreign body aspiration or ingestion.[9]

When the margins of the root are submerged by gingival ingrowths, it is necessary to excise sufficient tissue to expose the margins, not possible in this case. An alternative method for retaining the dam was applied. The rubber dam was perforated three times in order to involve teeth #22, #23 and #24, the holes were connected using a scissor and ethyl cyanoacrylate was applied between the rubber dam and the gum tissue on the vestibular and palatal surfaces. No clamp was necessary and the procedure should be carried out in the least traumatic way possible.[10]

The endodontic procedure was performed removing the filling material with specials instruments and a solvent in order to permit some drainage and relieve of pain.

Systemic medication for managing pain and infection must be careful for these patients. Painkillers derived from acetylsalicylic acid as well as nonsteroidal anti-inflammatory drugs (NSAIDs) should be avoided because they affect platelet aggregation when used for prolonged periods. There are no restrictions regarding antibiotics.[4,11]

In the treatment of patients with hemorrhagic disorders, the interaction between professional and hematologist is a pre-requisite for safe procedures.[11]

During dental emergencies, knowledge of the risks is essential in the decision-making process, once local bleeding control measures may not be enough.[4,12,13]

Conclusion

Emergency endodontic care may be necessary while VWD diagnosis is still not confirmed. The emergency procedures must be defined for safe and predictable emergency dental procedures in patients with bleeding disorders. An alternative method for retaining the dam could be provided and the procedure should be carried out under the least traumatic course management.

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