

Endodontic Rx for the von Willebrand patient

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Endodontics, when possible, rather than extraction, is considered the preferred treatment for patients with a bleeding tendency. Von Willebrand's disease has been established as the most common of the hereditary hemorrhagic diatheses. Principles of treatment of such a patient are presented and illustrated by a case history. Recommendations for treatment are discussed.

Improved diagnostic therapeutic techniques have increased the possibility that a dentist will treat a patient with the diagnosis of von Willebrand's disease. A number of authors¹⁻³ have stressed that endodontics is far better than extraction in patients with any type of blood dyscrasia.

Von Willebrand's disease is a hereditary bleeding disorder characterized by a prolonged bleeding time and mild to moderate factor VIII deficiency. Increased awareness and improved diagnostic tests have established that it is the most common of the hereditary hemorrhagic diatheses.^{4,6} Various names have been applied to this disorder including; pseudohemophilia, angiohemophilia, and vascular hemophilia. These names suggest that the abnormality in primary hemostasis is the result of either a primary vascular defect or an intrinsic abnormality of the platelets. Neither of these hypotheses has found significant support.⁵ There is evidence that bleeding is a result of a deficiency of a humoral factor, usually termed the anti-bleeding factor, which is possibly a subunit of the factor VIII molecule.⁵

Severity of the disease is quite variable and is determined by the degree of factor VIII deficiency. Because the

disease is inherited as an autosomal dominant trait, it occurs in females as well as males. Bleeding from the gums and during exfoliation of the deciduous teeth have been reported as dental difficulties.⁶ Diagnosis is often difficult, but laboratory findings will include a prolonged bleeding time and a diminished level of factor VIII. The following case illustrates principles of treatment of a patient with von Willebrand's disease.

CASE HISTORY

A 26-year-old white woman was referred to the endodontic service, reporting pain from the maxillary left lateral incisor. The pain had lasted approximately three weeks and had steadily increased in spontaneity and severity.

The patient had been a registered nurse, who was now medically retired. The medical history included a history of frequent fainting spells, an allergic response to general anesthetics, and an intolerance to aspirin and lactose. She had a history of dysmenorrhea and hypermenorrhea since menarche. After a breast biopsy in 1980, the patient experienced severe bleeding problems. At that time, the diagnosis of von

Willebrand's disease was made. This diagnosis was based on a low factor VIII assay of 38%, low platelet adhesiveness of 28%, and prolonged bleeding time. The patient's lifestyle was constricted by a low hematocrit, causing fainting spells and frequent bleeding episodes.

Clinical examination of the maxillary anterior teeth showed a noncarious left lateral incisor, which was tender to palpation and percussion (Fig 1). Vitality testing with ice and electric vitalometer elicited a hyperresponse. Radiographically, a slightly enlarged periodontal ligament space could be observed periapically (Fig 2). Excellent oral hygiene was noted and the remaining teeth in the area were symptomless and apparently free of

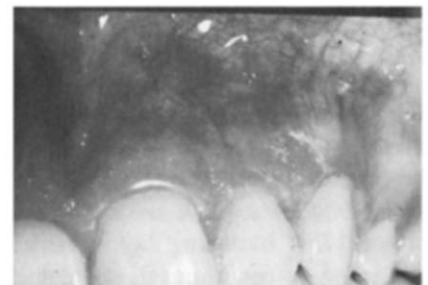


Fig 1—Clinical examination showed absence of caries and excellent oral hygiene in area of pain.

pathosis. Possible etiology of the pulpal breakdown was originally in doubt. The patient denied any history of trauma to the region. However, after being closely questioned about the incidence fainting, she recalled that approximately six months before the initiation of symptoms, she had struck the front of her mouth on a counter. Diagnosis was then concluded as irreversible pulpitis due to trauma.

The kind of anesthetic technique to be used for endodontic treatment is a matter of concern. General anesthesia was contemplated because of the risk of local bleeding. However, general anesthesia has the risk of laryngeal bleeding during intubation. Close consultation with the patient's hematologist dictated a treatment plan of premedication with factor VIII cryoprecipitate in conjunction with local anesthesia and hospitalization for observation.

The patient was admitted to the hospital, premedicated with one unit of cryoprecipitate the day before the procedure. Endodontic treatment was then performed in the normal clinic setting. Mepivacaine (1 ml 1:100,000 epinephrine) was slowly infiltrated over the lateral incisor. A rubber dam was used to isolate the area with special attention directed toward minimizing gingival trauma by blunting the jaws of the rubber dam clamp. During instrumentation, care was taken to maintain all instruments inside the root canal system. Complete instrumentation and obturation were performed in one setting and a lingual composite was the final restoration. (Fig 3). The patient was then returned to the hospital ward for observation, where she reported only minor discomfort. During the next six hours, some hematoma formation was observed in the area of the injection. Some mucosal bleeding was observed



Fig 2—Radiographic examination of lateral incisor suggested enlarged periodontal ligament space at periapex.



Fig 3—Endodontics was completed with special care to minimize trauma to periapical tissues.

from the injection site. An additional two units of cryoprecipitate were administered, and after approximately eighteen hours, the hematoma was decreased. Ecchymosis was noted and two more units of cryoprecipitate were administered.

Twenty-four hours after treatment, the patient complained of mild discomfort, and two additional units of cryoprecipitate were administered for a total infusion of seven units. The patient's experience after this point was uneventful as pain or bleeding was noted. The patient was discharged approximately 56 hours posttreatment with ecchymosis at the site of injection and on the exterior surface of the upper lip (Fig 4,5).

DISCUSSION

This case illustrates several important aspects of von Willebrand's disease. This disease is a highly variable

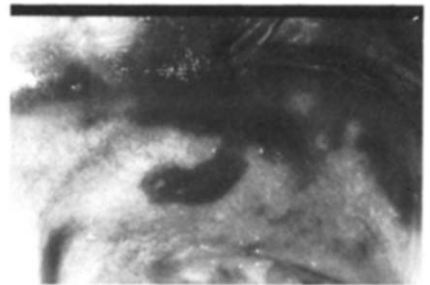


Fig 4—Fifty-six hours post-injection ecchymosis in buccal vestibule, originating from injection site.



Fig 5—Fifty-six hours post-injection ecchymosis extending to exterior surface of lip.

affliction. Although some individuals are able to function despite the disease and can be easily managed through consultation with the hematologist, others, such as this case, are difficult management situations. Even the relatively slight trauma of a 27-gauge needle initiated a hemorrhagic diathesis.

Regardless of the severity of the disease, endodontic treatment is preferable to extraction. Even though this was a severe case, the actual endodontic treatment was uneventful. Bleeding through the root canal system was not a problem; there was no difficulty obtaining a clean, dry canal for root canal obturation. Weine² suggests a stepwise management of these cases. Pulp tissue is removed until pain is elicited; fixative in the form of formocresol is then applied. This treatment is continued at subsequent appointments until total pulpal extirpation is accomplished. This method would be most useful when traumatic or carious exposure calls for endodontic treatment. In this partially vital case, initial

access would have been impossible to accomplish without anesthesia.

Finally, these patients can be treated in the normal dental setting. Even in areas where there is not a hospital dental service, treatment is possible. Because these patients are generally ambulatory, the initial factor replacement can be provided by the hospital hematologist, and the patient can be treated in a nearby dental office and returned to the hospital for monitoring and observation. The dental practitioner does not need to be overly concerned about an acute sanguinary episode in the dental office during nonsurgical treatment. Primary emphasis is on dual management with the hematologist, and providing the minimal amount of trauma to the patient should be the primary emphasis as clinician and hematologist work toward dual management of the patient.

CONCLUSION

The opportunity for treating a patient diagnosed as having von Wille-

brand's disease has recently increased due to improved diagnostic tests. Endodontics is the preferred treatment and can be completed successfully if the clinician consults with the hematologist to minimize the patient's trauma during treatment.

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