

Von Willebrand Disease and Extraction Hemostasis: A Case Report

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Introduction

Von Willebrand disease (vWD) is the most common inherited bleeding disorder. It is characterized by a marked deficiency of the von Willebrand factor, which is a key protein involved in the adhesion of platelets and the stabilization of factor VIII. Pediatric dental patients with von Willebrand disease present a unique challenge in management of their cases due to the increased risk of continuous bleeding, especially when more invasive procedures are performed such as extractions or pulpal therapy.

Ensuring adequate hemostasis in these patients requires specific preoperative evaluation, strong interdisciplinary collaboration between dentist and physician, and the use of various hemostatic measures when appropriate. Since extractions are often indicated in pediatric dentistry due to delayed exfoliation or primary caries, the dentist must consider both the need for treatment and the risk of hemorrhagic complication.

Von Willebrand Disease and Bleeding

Von Willebrand factor (vWF) is a glycoprotein essential for both *primary and secondary hemostasis*. In *primary hemostasis*, after a vascular injury, this factor acts as a bridge between the exposed endothelial collagen and platelets and allows for platelet adhesion. Once adhered, the initial platelet plug is formed.

In *secondary hemostasis*, vWF will bind to and stabilize Factor VIII in circulation. Without vWF, Factor VIII will degrade. When this factor degrades, a weakened fibrin clot forms, which leads to prolonged bleeding.

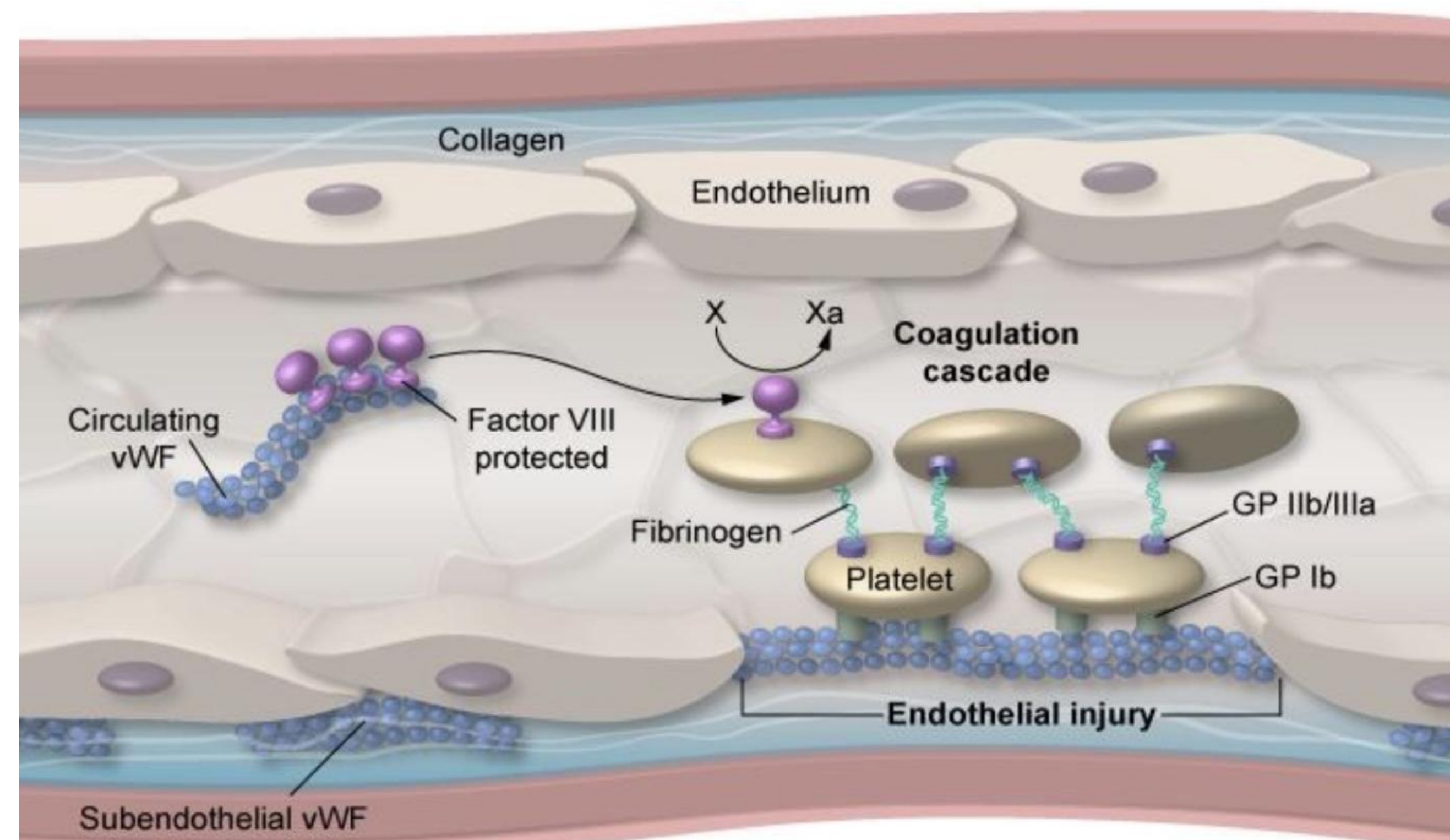


Figure 1

Case Report and Patient Background

The 9 year-old male patient presented to clinic for a routine recall exam appointment that included radiographs and a periodic exam.

Chief Complaint: none

Medical Conditions: von Willebrand disease (guardian unsure of diagnosis date)

Medications: Aminocaproic acid (Amicar) during bleeding

Allergies: none

Recent hospitalizations: none

Findings and purposed treatment plan:

- #A OB primary caries (OB composite)
- #C primary caries, all surfaces (extraction)
- #H primary caries, all surfaces (extraction) (Figure 2)
- #I primary caries, all surfaces (extraction) (Figure 2)
- #K existing pulpotomy and stainless steel crown with furcation involvement (extraction) (Figure 3)
- #R F caries (F composite)
- #19 B primary caries (B composite)
- #30 B primary caries (B composite)

The patient's next appointment was scheduled for extractions of #'s H, I, and K with local anesthesia.

Dentist and Physician Collaboration

Upon learning the patient had vWD, a consult was sent to the patient's primary physician. The consult detailed the need for extraction along with the use of nitrous oxide for anxiety and 2% lidocaine with 1:100,000 epinephrine for local anesthesia. A few days later, the consult was received indicating the patient must present to the medical clinic for an aminocaproic acid (Amicar) infusion before presenting to the dental clinic for the indicated extractions. The patient's guardian was notified. They agreed to present at the next appointment with the patient having had the infusion earlier in the day.

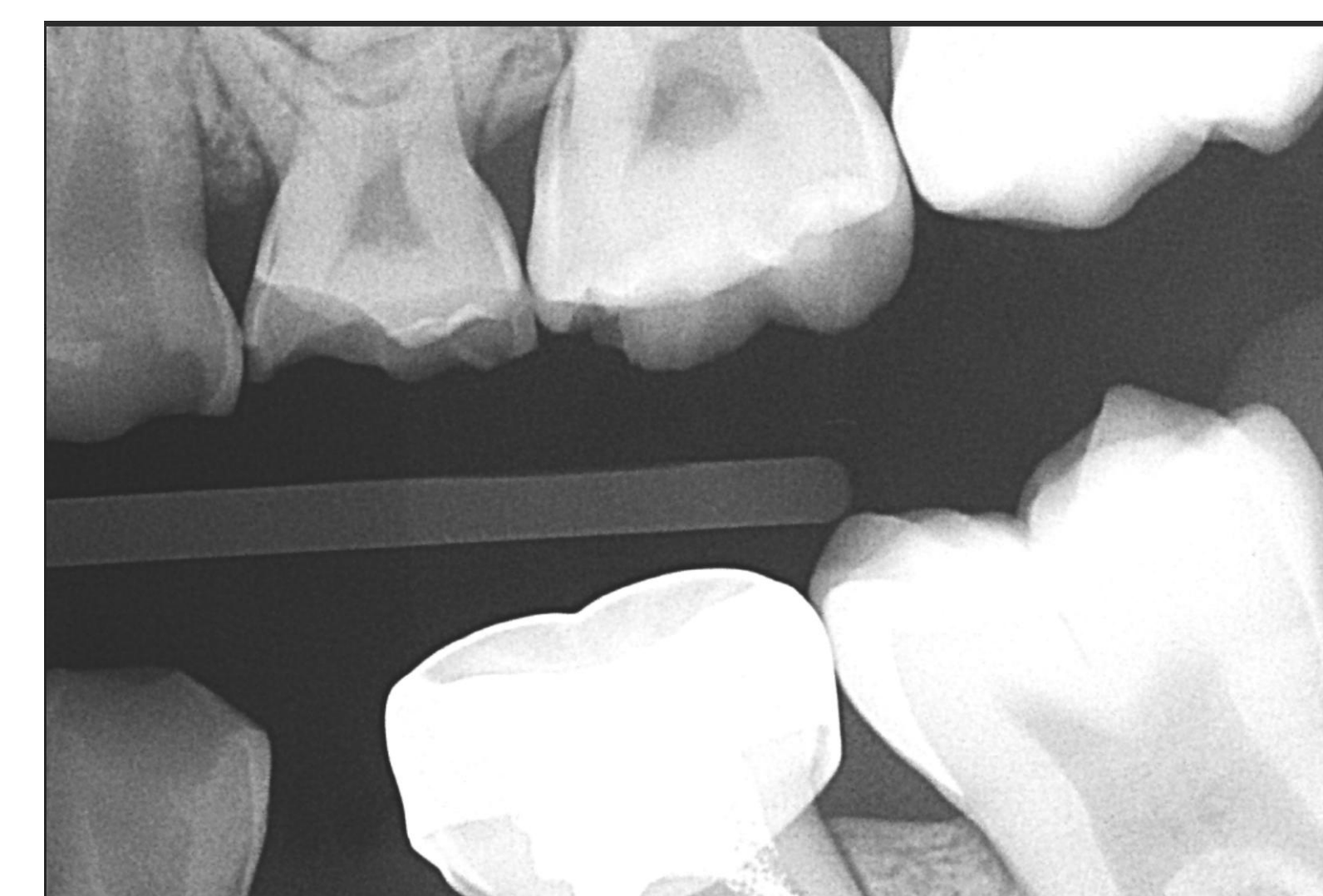


Figure 2



Figure 3

Extraction Appointment

The patient presented to clinic nine days later for his appointment for extraction of teeth #'s H, I, and K. The guardian presented with a note from the medical clinic stating the patient had an aminocaproic acid infusion hours prior. The patient also revealed the infusion site on the left forearm.

50% nitrous and 50% oxygen was administered for the duration of the appointment. 0.75 of one carpule of 2% lidocaine with 1:100,000 epinephrine was administered locally to the teeth requiring extraction. Teeth #'s H, I, and K were extracted atraumatically with forceps, and hemostasis was achieved using pressure and two 4x4 knotted gauzes.

Conclusion

This case highlights not only von Willebrand disease and the important role it plays in clotting, but also the importance of dentist and physician collaboration. A patient with von Willebrand disease requires individualized care that cannot be achieved by the dentist alone. A close collaboration was essential for optimal treatment outcomes in this case.

References

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