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Challenges in the Management of Spontaneous Gingival Bleeding in Patients with Hemophilia A: A Case Report

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ABSTRACT
Hemophilia A, a hereditary bleeding disorder caused by factor VIII deficiency, often leads to prolonged bleeding during oral conditions and invasive dental procedures. This case report shows that poor oral hygiene and adverse oral habits can be influenced by underlying systemic conditions, showing the importance of comprehensive patient evaluation and multidisciplinary management. A 38-year-old man was referred to the Oral Medicine Clinic with complaints of painless spontaneous gingival bleeding in the left upper jaw accompanied by poor oral hygiene. The patient was not taking any routine medications at the time of presentation but underwent cryotherapy periodically since teenager, with the most recent treatment performed in 2013. Laboratory examination showed a normal platelet count, mild leukocytosis, and a prolonged activated partial thromboplastin time, showing a high risk of bleeding. The patient was prescribed chlorhexidine mouthwash by the Oral Medicine Clinic to help control plaque and gingival inflammation. Successful dental management of hemophilia A patients depends on stabilization of hemostasis, prevention of oral inflammation, and good collaboration between the dentist and hematologist before any invasive procedure is performed.

Keywords: Hemophilia A; Oral Bleeding; Dental Care; Gingival Health; Oral Health;

ABSTRAK
Hemofilia A kelainan perdarahan herediter akibat defisiensi faktor VIII menyebabkan perdarahan berkepanjangan pada kondisi oral maupun tindakan kedokteran gigi invasif. Laki-laki usia 38 tahun dirujuk ke Klinik Penyakit Mulut, keluhan perdarahan gingiva spontan tanpa nyeri pada rahang atas kiri disertai kebersihan mulut yang buruk. Pemeriksaan laboratorium jumlah trombosit normal, leukositosis ringan, dan pemanjangan activated partial thromboplastin time mengindikasikan risiko perdarahan tinggi. Pasien diberikan obat kumur klorheksidin untuk membantu mengontrol plak dan inflamasi gingiva. Keberhasilan penatalaksanaan kedokteran gigi pada pasien hemofilia A bergantung pada stabilisasi hemostasis, pencegahan inflamasi oral, dan kolaborasi yang baik antara dokter gigi dan hematolog sebelum tindakan invasif dilakukan.

Kata kunci: Hemofilia A; Perdarahan Mulut; Kesehatan Mulut; Kesehatan Gingiva; Perawatan Gigi

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1. Introduction

Hemophilia A is an X-linked recessive bleeding disorder that develops from birth when clotting factor VIII shows a congenital deficiency [1]. Several studies have shown that the condition affects 1 in 5,000 to 10,000 male individuals, making up 80-85% of all hemophilia cases [1]. According to the World Federation of Hemophilia (WFH) Annual Global Survey 2022, Indonesia reported more than 3,300 registered patients, with approximately 80% being diagnosed with Hemophilia A. This makes the condition the most common inherited bleeding disorder in the country [2]. The main symptom of Hemophilia A involves prolonged bleeding that occurs after injuries or surgical procedures [1]. The intrinsic coagulation pathway dysfunction in these patients leads to prolonged aPTT results while their PT and platelet count remain normal [1]. The risk of major bleeding becomes high when patients with clotting factor defects experience any form of dental trauma [3]. Patients who neglect their oral hygiene, practice smoking and betel chewing, and drink alcohol, face an elevated chance of spontaneous bleeding in their mouth. The presence of oral diseases, such as gingivitis and periodontitis also increases the risk of bleeding. Affected individuals must understand that proper oral care practices involving gentle brushing and flossing help to minimize long-term bleeding risks without causing any harm [4]. This case report emphasizes the first aid and prevention challenges of managing oral bleeding in a Hemophilia A patient.

2. Case Report

A 38-year-old male inpatient in Universitas Indonesia Hospital was referred to the oral medicine unit for spontaneous and painless gingival bleeding in the upper left jaw. The patient first noticed blood on his pillow a week before the referral, having a medical history of Hemophilia A since the age of 10, when a leg injury was sustained with prolonged bleeding that led to hospital evaluation and diagnosis. Since then, occasional gingival bleeding was experienced, which was usually managed by rinsing with tap water or biting on gauze until the bleeding subsided. However, in the past 24 hours, the bleeding episode became more profuse than usual. The patient admitted to smoking electronic cigarettes (vaping) daily, with the last use occurring a day before hospital admission, and occasional alcohol consumption during social events. Parafunctional habits such as bruxism, lip licking, and lip biting was denied. In addition, the patient habitually chewed predominantly on the left side.

Routine brushing was maintained twice daily with toothpaste fluoride but denied the use of any mouthwash or denture. A previous visit to a dentist for gingival bleeding was recalled, where the patient was referred to an internist at another hospital 2 to 3 years ago, but scaling, extraction, or restorative procedures had never been carried out.

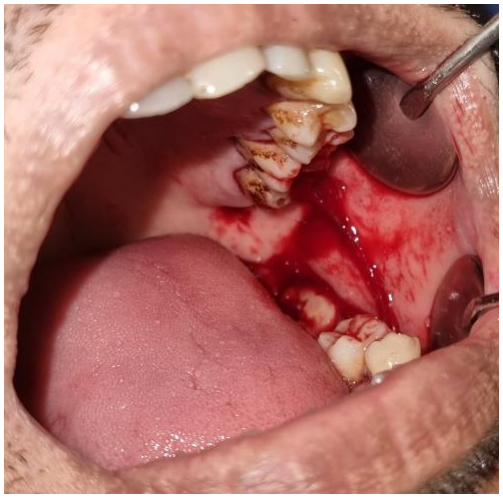

Figure 1. Initial presentations region 25 and 26, suspected the origin of bleeding

The patient reported a history of gastrointestinal bleeding during middle school, and was hospitalized and received cryoprecipitate transfusion. Last factor VIII replacement therapy was in 2013, with no subsequent treatments due to limited access to factor concentrate. Presently, the internal medicine specialist recommended

cryoprecipitate transfusion as a temporary measure while awaiting factor VIII availability, which was limited at Universitas Indonesia Hospital and Cipto Mangunkusumo Hospital (as national referred source).

Table 1. Patient laboratory test results. L for low result and H for high result.

Tests	Result	Units	Reference interval
Hemoglobin	**11.7** (L)	g/dL	13.0 - 17.0
Hematocrit	**33.8** (L)	%	40.0 - 50.0
Erythrocytes	**4.08** (L)	10 ^6/uL	4.50 - 5.50
MCV	**82.8** (L)	fL	83.0 - 101.0
MCH	28.7	pg	27.0 - 31.0
MCHC	**34.6** (H)	g/dL	31.5 - 24.5
Thrombocytes	268	10 ^3ul	150 - 410
Leukocytes	**10.34** (H)	10 ^3ul	150 - 410
PT	**9.3** (L)	Seconds	9.8 - 12.6
aPTT	**44.1** (H)	Seconds	21.8 - 28.0

MCV for Mean Corpuscular Volume, MCH for Mean Corpuscular Hemoglobin, MCHC for Mean Corpuscular Hemoglobin Concentration, PT for Prothrombin Time, aPTT for Activated Partial Thromboplastin Time

Laboratory tests result showed a normal platelet count with mild leukocytosis, but an abnormally prolonged activated partial thromboplastin time, consistent with his factor VIII deficiency, due to the high risk of uncontrolled hemorrhage.

3. Case Management

The hematology team planned factor replacement through cryoprecipitate transfusion. In anticipation of invasive dental care, coordination with hematology was initiated. Because of the bleeding risk, even routine oral hygiene procedures were modified. Scaling or deep cleaning was postponed until factor levels could be corrected. Daily tooth brushing was restricted to avoid aggravating the bleed. Instead, the patient was instructed to use a 0.2% chlorhexidine gluconate mouthwash to control plaque and gingival inflammation. The patient was advised to swish gently and avoid vigorous rinsing to prevent dislodging clots. No local invasive dental procedures (e.g. scaling, root planning) were carried out at this time.

4. Discussion

The patient in this case presented with spontaneous painless gingival bleeding accompanied by poor oral hygiene, both of which contributed to increased frequency and severity of oral bleeding episodes in individuals with Hemophilia A [5]. Inadequate plaque control promoted gingival inflammation and ulceration of the sulcular epithelium, exposing highly vascular connective tissue that became more susceptible to bleeding when coagulation was impaired [5]. Previous studies showed that patients with hemophilia often exhibited poorer periodontal conditions and more frequent gingival bleeding, partly due to fear of tooth brushing and routine plaque removal that could trigger bleeding episodes [6].

In Hemophilia A, deficiency of factor VIII disrupted the intrinsic coagulation pathway and prolonged clot formation, resulting in unstable hemostatic plugs and recurrent bleeding even after minor trauma [7]. Consequently, mild mucosal irritation or chronic gingival inflammation led to prolonged oral bleeding [6]. Current literature described oral bleeding in hemophilia as a combination of local inflammatory factors, such as plaque accumulation and gingivitis, together with systemic coagulation defects. Therefore, successful management must address both conditions simultaneously [2].

During active gingival bleeding or when mechanical plaque control was temporarily contraindicated, chlorhexidine gluconate 0.12 to 0.2% mouthwash served as an alternative non-invasive plaque control method [7]. Chlorhexidine possessed broad-spectrum antimicrobial activity and high substantivity, enabling prolonged retention on oral tissues and sustained antibacterial effects [8]. In addition, its cationic properties allowed binding to negatively charged bacterial cell membranes, leading to membrane disruption and reduction of bacterial colonization [8]. Chlorhexidine absorbed onto oral surfaces, including mucosa, pellicle, and hydroxyapatite, thereby prolonging its residual antimicrobial activity [8]. Several clinical studies reported that chlorhexidine mouthwash significantly reduced plaque accumulation, gingival inflammation, and bleeding indices when used as an adjunct to oral hygiene measures [8,9]. A randomized clinical trial showed that both 0.12% and 0.2% chlorhexidine formulations effectively reduced gingival bleeding and plaque accumulation over 6 weeks compared with tooth brushing alone [8]. Recent evidence comprising chlorhexidine-coated floss also showed reductions in bleeding on probing after short-term use [10]. Although chlorhexidine did not correct factor VIII deficiency or directly influenced coagulation, it could indirectly reduce recurrent gingival bleeding by controlling local inflammatory triggers and bacterial load [10]. Therefore, chlorhexidine was considered a temporary supportive therapy until adequate hemostatic stabilization permitted the reintroduction of routine mechanical plaque control. In addition to local plaque control, antifibrinolytic therapy played an important role in controlling oral bleeding in patients with Hemophilia A. Tranexamic acid referred to a synthetic lysine analogue that inhibited the conversion of plasminogen to plasmin, thereby preventing fibrin degradation and stabilizing the formed blood clot [11]. Unlike chlorhexidine, which reduced local inflammatory triggers of bleeding, tranexamic acid directly supported hemostasis by protecting the fibrin matrix from premature breakdown. Current hemophilia guidelines recommended tranexamic acid as an adjunctive therapy for mucosal and oral bleeding, either alone in minor bleeding episodes or in combination with factor replacement therapy for invasive dental procedures [11]. The oral cavity was particularly susceptible to fibrinolysis because saliva contained plasminogen activators capable of disrupting newly formed clots. Therefore, antifibrinolytic agents were specifically beneficial in maintaining clot stability within the oral environment [12]. In this case, the patient's use of tranexamic acid during bleeding episodes contributed to clot preservation and spontaneous cessation of gingival bleeding. However, tranexamic acid did not address plaque accumulation or gingival inflammation. Its use must be complemented by measures aimed at controlling local inflammatory factors, including appropriate oral hygiene and temporary chlorhexidine therapy when tooth brushing was contraindicated [13].

Management of oral bleeding in Hemophilia A required close collaboration between the dentist, specifically oral medicine specialist, hematologist, and patient [14]. Oral medicine specialists were responsible for evaluating oral hygiene status, local inflammatory conditions, and the need for invasive dental treatment, while the hematologist determined systemic bleeding risk through assessment of factor VIII activity, inhibitor status, and the requirement for replacement therapy [14,15]. Appropriate communication between both disciplines was essential to determine the safest timing for dental procedures and the need for perioperative hemostatic support [15]. Current recommendations suggested that invasive dental procedures must only be performed after adequate correction of factor VIII levels was achieved [16,17]. Minor dental procedures, such as supragingival scaling, required factor VIII activity levels of at least 30 to 50%, while extractions and minor oral surgery required levels above 50 to 75%. Major maxillofacial surgery required correction up to 80 to 100% [17]. Factor replacement therapy was commonly administered approximately an hour before the procedure to ensure optimal circulating factor levels during tissue manipulation and early clot formation [17]. In addition, dental treatment was preferably scheduled early in the day and early in the week to allow sufficient postoperative monitoring and emergency access when delayed bleeding occurs [18]. In this case, cryoprecipitate transfusion was selected as a temporary alternative because recombinant factor VIII availability was limited, which remained an accepted approach in resource-limited settings [18].

Recurrent gingival bleeding negatively affect oral-health–related quality of life in patients with hemophilia [19]. Persistent bleeding episodes could interfere with eating, oral hygiene practices, social interaction, and psychological well-being [19]. Previous studies reported that patients with poorer gingival conditions experienced greater discomfort, lower self-confidence, and increased functional limitations [19,20]. Improvement in oral hygiene and reduction of gingival bleeding were associated with better quality-of-life outcomes among patients with inherited bleeding disorders [20]. Therefore, early prevention, maintenance of

oral hygiene, and multidisciplinary management remained essential components in improving both oral health and overall quality of life in patients with Hemophilia A [21].

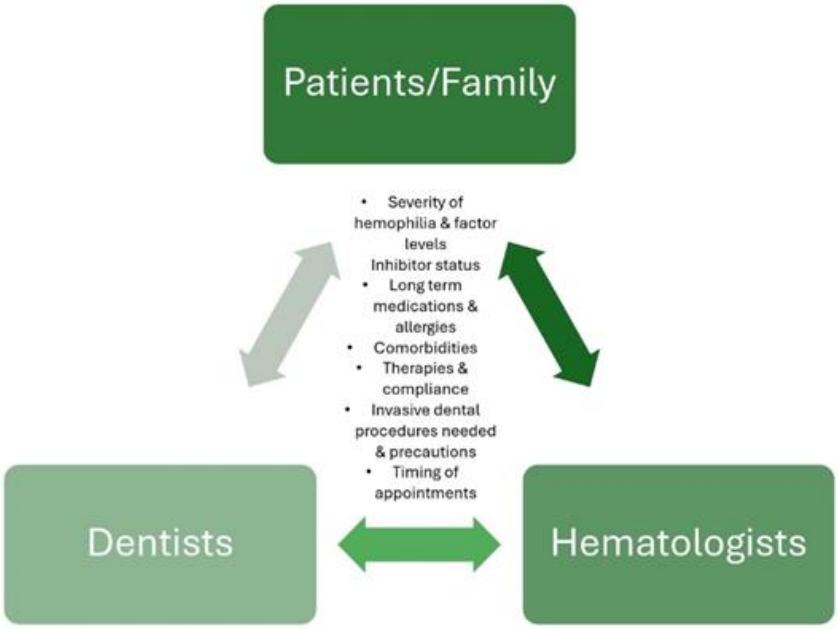

Figure 2. Multidisciplinary collaboration [14].

The foundation of dental care planning for hemophilic patients lied in correcting the coagulation defect prior to any invasive procedure. According to the World Federation of Hemophilia (WFH) and subsequent reviews, factor VIII concentrate, remained the gold-standard therapy for Hemophilia A [16].

Table 2. The timing and target levels of factor VIII replacement [17].

Procedure type	Recommended Factor VIII Activity	Timing of Administration	Duration of Coverage
Routine dental scaling (supragingival scaling)	≥ 30-50%	1 hour before procedure	12-24 hours
Simple extraction, subgingival scaling, minor surgery	≥ 50-75%	1 hour before procedure	Continue 1-2 days
Major oral or maxillofacial surgery	≥ 80-100%	1 hour before procedure	Maintain 5-7 days postoperatively

Optimization of hemostasis before dental intervention remained fundamental in the management of patients with Hemophilia A [16]. International recommendations from the World Federation of Hemophilia continued to recognize factor VIII replacement therapy as the primary approach for achieving adequate perioperative hemostatic control during invasive oral procedures [17]. Dental treatment was preferably arranged early in the morning and at the beginning of the working week, to ensure adequate postoperative observation and immediate access to emergency hematologic must support secondary bleeding arise [18]. Ideally, invasive procedures were performed shortly after administration of replacement therapy, ensuring that peak factor activity coincided with tissue manipulation and the initial stages of wound healing [17]. In this case, cryoprecipitate was administered as an interim hemostatic option because recombinant factor VIII was not readily available, a situation still encountered in several resource-limited centers [18]. Recent literature additionally emphasized the role of individualized perioperative planning, including adjunctive antifibrinolytic

therapy and emicizumab prophylaxis, to reduce postoperative hemorrhagic events during dental procedures [16]. Kumar et al. further reported that dental protocols for congenital hemophilia must not follow a uniform approach. Instead, treatment planning must consider disease severity, current factor levels, procedural complexity, and institutional hematology support [15].

Recent evidence showed that regular preventive dental follow-up contributed significantly to improved periodontal outcomes and fewer bleeding episodes among patients with hemophilia [22]. A rapid evidence reviews on dental management in hemophilic individuals emphasized that minimally traumatic approaches, preventive oral care, and coordinated multidisciplinary planning remained essential to reduce perioperative complications [23]. Moreover, systematic evaluations of chlorhexidine use in patients with special healthcare needs showed meaningful reductions in plaque accumulation, gingival inflammation, and bleeding scores, supporting its temporary role when conventional tooth brushing cannot be safely performed [22]. Additional evidence-based recommendations reinforced the importance of preventive oral health programs, continuous monitoring, and collaboration between dental practitioners and hematologists to minimize oral morbidity in congenital hemophilia [24].

Persistent gingival bleeding could adversely affect oral-health–related quality of life (OHRQoL) in patients with Hemophilia A by interfering with mastication, oral hygiene practices, social interaction, and emotional well-being [19]. Previous studies including children and adolescents with inherited bleeding disorders showed that poorer gingival conditions were associated with increased discomfort, eating difficulties, and reduced self-confidence [19]. Improvements in oral hygiene and reduction of gingival inflammation were subsequently associated with better OHRQoL outcomes following preventive oral health interventions [20]. In adult patients, recurrent gingival bleeding had similarly been linked to poorer scores on health-related quality-of-life assessments, including limitations in routine activities and increased psychological distress [21]. Additional reports suggested that fear of bleeding, restricted access due to specialized dental services in comorbid systemic conditions, and financial limitations contributed to delayed dental attendance and worsening oral conditions in hemophilia patients over time [24,25]. Consequently, preventive strategies, early intervention, and close interdisciplinary collaboration remained critical not only for hemostatic stability but also for maintaining long-term oral health and overall quality of life in individuals with Hemophilia A [26]. Recent studies showed that patients with hemophilia often have suboptimal oral hygiene and periodontal status, while structured oral health education and ongoing preventive support could improve oral-health-related quality of life and reduce bleeding-related oral morbidity. In this case, early preventive counseling, temporary plaque control during active bleeding, reintroduction of gentle tooth brushing once hemostasis was stable, and regular dental-hematology follow-up were strongly showed [21,22,27].

6. Conclusion

In conclusion, this case report emphasizes the complex balance between managing bleeding risk and preserving oral health in a patient with Hemophilia A. Key lessons include the necessity of systemic hemostatic optimization (through factor VIII replacement or equivalent therapies) before undertaking invasive dental interventions, the careful use of local hemostatic measures (pressure, absorbable hemostats, suturing, antifibrinolytics), and the avoidance of unnecessary trauma or premature invasive treatments. The roles of the dentist, hematologist, and patient must work in concert to assess risk, plan timing, execute procedures safely, and follow up diligently. While advances such as emicizumab prophylaxis are expanding the window of safer dental treatment, many situations, specifically in resource-constrained settings, require cautious delay of invasive care until adequate support is assured. Ultimately, preventive oral hygiene, early monitoring, and multidisciplinary coordination remain the foundation of safe and effective dental care in Hemophilia A.

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8. Conflict of Interest

The authors declare that there is no conflict of interest.

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