



Massive oral bleeding after full-mouth extraction in a patient with B-cell lymphocytic leukemia/small lymphocytic lymphoma reversed with recombinant activated factor VII

Collin Sprenker, PA-C; Hesham R. Omar, MD;
R. Andrew Powless, DMD; Devanand Mangar, MD;
Enrico Camporesi, MD

Full-mouth extraction is often necessary in the presence of severe dental caries. It can, however, be associated with complications such as infection, pain, trismus, and bleeding. It is important to assess the risk of developing intra- and postoperative bleeding by checking the results of blood coagulation tests, complete blood cells counts, human immunodeficiency virus infection tests, and hemophilia tests, as well as for prior or current use of anticoagulant or antiplatelet medications, and a history of liver disease. We previously reported the effect of antiplatelet agents on oral bleeding after full-mouth extraction.^{1,2} In the literature, investigators have described various agents, such as surgical glue, desmopressin, tranexamic acid, and recombinant activated factor VII (rFVIIa) (NovoSeven, Novo Nordisk), to aid in hemostasis after oral bleeding. rFVIIa has been used increasingly in a variety of off-label indications,³ with the main argument curtailing its off-label use being the increased risk of experiencing thrombotic events. Less reported is massive oral bleeding after full-mouth extraction in a patient with underlying B-cell lymphocytic leukemia/small lymphocytic lymphoma (B-CLL/SLL). Herein, we describe the successful use of rFVIIa in an elderly man with massive oral bleeding with yet undiagnosed

ABSTRACT

Background and Overview. Full-mouth extraction can be associated with intraoral bleeding, which usually is controlled with local hemostatic measures. Recombinant activated factor VII (rFVIIa) occasionally is used to stop bleeding in a variety of off-label indications, with the main argument curtailing its use being thrombotic events. The authors describe the use of rFVIIa for bleeding after full-mouth extraction in a patient with undiagnosed B-cell lymphocytic leukemia/small lymphocytic lymphoma.

Case Description. A 72-year-old man underwent full-mouth extraction (18 teeth). The next day, the patient experienced massive oral bleeding. The authors administered tranexamic acid, aminocaproic acid, and a total of 12 units of packed red blood cells in addition to local hemostatic measures without control of bleeding. On postoperative day 10, the authors administered 5,000 micrograms of rFVIIa, and within 2 hours oral the bleeding ceased. The authors performed flow cytometry and diagnosed B-cell lymphocytic leukemia/small lymphocytic lymphoma.

Conclusions and Practical Implications. Unexplained massive oral bleeding despite adequate local hemostatic measures should prompt further investigations for underlying bleeding or coagulation disorders. The authors describe the successful use of rFVIIa in massive oral bleeding. Further studies are mandatory to study the effectiveness of this drug for this off-label indication.

Key Words. Recombinant activated factor VII; oral bleeding; full-mouth extraction; chronic lymphocytic leukemia; small lymphocytic lymphoma.

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B-CLL/SLL after failed local hemostatic measures and transfusion of various blood products.

CASE REPORT

A 72-year-old man with a medical history of hypertension, diabetes mellitus, hyperlipidemia, gastroesophageal reflux disease, dementia, and schizophrenia was admitted to the hospital for elective full-mouth extraction because of dental caries. Radiographically, the patient was partially edentulous.

There was a generalized 70% horizontal alveolar bone loss to the maxilla and 50% horizontal alveolar bone loss to the mandible. Generalized coronal areas of radiolucency consistent with dental caries were present. Multiple periapical areas of radiolucency were evident in the maxilla and mandible. An inferior growth of the maxillary osseous tuberosity was visible radiographically as well.

The patient was not receiving any antiplatelet or anticoagulant medications and had no known history of blood dyscrasia. Preoperative laboratory work-up values showed a normal platelet count and coagulation profile (Table). We performed full-mouth extraction with the patient under general anesthesia with nasotracheal intubation and extracted 18 teeth. In addition, we performed 4 alveoloplasties, bilateral excision of mandibular tori, and bilateral excision of a maxillary osseous tuberosity. We placed 2 2-0 gut continuous interlocking sutures, 1 in the maxilla and 1 in the mandible, and 4 × 4 gauze sponges over the surgical site. Estimated blood loss was 30 milliliters. The patient was discharged home 8 hours later in stable condition.

The next day the patient was readmitted to the hospital because of massive oral bleeding, and he underwent emergency surgical exploration. The table lists laboratory test values on readmission. Before exploration, the patient received 3 units of packed red blood cells, 3 units of fresh frozen plasma, and 1 unit of platelets. We performed exploration with the patient under general anesthesia with evacuation of blood clots, and we placed multiple sutures to control the bleeding. There was extensive oral clotting that we debrided and suctioned. We removed the maxillary sutures. Most of the blood loss was coming from the maxilla and 1 small area in the anterior mandible. We placed thrombin-soaked sterile compressed sponge into all sockets. We placed 2 2-0 gut

TABLE

Venous laboratory test values.				
VARIABLE	PREOPERATIVE	READMISSION	BEFORE RECEIVING RECOMBINANT ACTIVATED FACTOR VII	DISCHARGE
Hematocrit (%)	28.3	17.8	21.7	28
Hemoglobin (Grams per Deciliter)	9.4	5.2	7.3	8.8
Platelets (Cells per Microliter)	168×10^3	234×10^3	113×10^3	289×10^3
White Blood Cells (Cells per μ L)	7.6×10^3	11.37×10^3	5.11×10^3	4.69
Red Blood Cells (Cells per μ L)	3.3	1.92	2.43	2.92
Lymphocytes (%)	57.9	49	47.9	61
Neutrophils (%)	37.3	43	46.6	31
Monocytes (%)	3.7	1	2.9	7
Eosinophils (%)	0.9	1	1.4	1
Bands (%)	NA*	5	2	1
Prothrombin Time (s)	12.1	11.4	9.9	NA
Partial Thromboplastin Time (s)	25.1	33.4	NA	NA
International Normalized Ratio	1.1	1.1	0.9	NA

* NA: Not available.

continuous interlocking sutures, 1 in the maxilla and 1 in the mandible, and we placed 4 horizontal mattress cross sutures, 3 in the maxilla and 1 in the mandible. We irrigated the patient's mouth with saline, and we compressed 4 × 4 gauze sponges for approximately 5 to 10 minutes. Little oozing occurred at this time. The patient remained intubated and was delivered to the intensive care unit without incident where he continued receiving mechanical ventilation because of aspiration of blood. He was extubated 2 days later without complications.

Posteroperatively, the surgical site continued to bleed. We administered tranexamic acid every 6 hours, aminocaproic acid, and a total of 12 units of packed red blood cells, in addition to 4 × 4 gauze packing (changed hourly) because of continued oozing. We consulted the hematology oncology service because of abnormalities of white blood cells on peripheral blood smear. Flow cytometry results revealed monoclonal cluster of differentiation (CD) 5, CD19, CD23, and B-cells conforming to B-CLL/SLL. Factor VIII, factor IX, and von Willebrand factor were within normal levels.

On postoperative day 10, we administered 5,000 micrograms of rFVIIa, and within 2 hours intraoral bleeding ceased. The figure shows the patient's hemoglobin and

ABBREVIATION KEY. B-CLL/SLL: B-cell lymphocytic leukemia/small lymphocytic lymphoma. CD: Cluster of differentiation. FFP: Fresh frozen plasma. PLT: Platelets. POD: Postoperative day. RBC: Red blood cells. rFVIIa: Recombinant activated factor VII.

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