



# Postoperative Bleeding after Dental Extraction in Patient with Decompensate Cirrhosis: A Case Report

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## Abstract

Patients with cirrhosis are more susceptible to bacteremia and local infection and dental extraction may be required to avoid the spread of local infection. Patients with decompensate cirrhosis may present conditions such as anemia, low platelet count, reduced production of procoagulant factors, vitamin K deficiencies, hyperfibrinolysis and acquired thrombocytopenia, which may complicate dental extraction. Therefore, special attention must be given to those who are considering any invasive procedure. Here we presented one case who underwent postoperative bleeding after dental extraction.

**Keywords:** Liver cirrhosis; Decompensate period; Dental extraction; bleeding

## Case Presentation

A 50-year-old male with decompensate cirrhosis presented with gomphiasis of right upper teeth for two years. He noted a history of bleeding easily but reported having previous dental extractions without incident. The patient has been infected hepatitis B for 20 years, and was diagnosed as decompensate cirrhosis 11 years ago. The patient received endoscopic homeostasis for upper gastrointestinal hemorrhage 11 years ago and spleen embolization due to hypersplenism, low level platelets and liver ascites 4 years ago.

At admission, the patient's vital sign was stable and there was no yellowing of skin or whites of the eyes but the shifting dullness was positive and the flanks looked fullness. The haemostatic parameters was nearly normal (White blood cell count:  $3.48 \times 10^9/L$ , Hemoglobin: 120.0 g/L, platelet count:  $63 \times 10^9/L$ , PT: 13.7/12.3 seconds, PTA: 74%, ALT: 29.2 U/L, AST: 39.1 U/L). A panoramic radiograph showed right upper 7 residual crowns and 8 residual roots, III degrees mobility, gums mild redness, gums shrink back to the root of a third area, periodontal probing depth 4 mm, no abnormal leakage, mucous membrane of the root zone no abnormalities. Then a decision was made to extract the teeth.

After the radiographic and intraoral examination, informed consent was obtained for the extract of the right upper 7 and 8 teeth. Approximately 7.2 ml of 2% lidocaine with 1:100,000 epinephrine was administered, and the teeth were extracted with minimal force or disturbance of the surrounding tissues by use of an elevator and forceps. The surrounding granulation tissue was removed with a curette, and gauze was packed over the extraction sites. Forty minutes later, the patient spit out gauze, no abnormal leakage and postoperative guide of teeth extraction surgery.

It was noted after the extractions that the patient had persistent oozing from the extraction sites and no pulsatile bleeding was noted. We curetted the wound and placed the gauge into the extraction sites, closed the wound with two sutures under local anesthesia. A gauge was packed over the sockets to obtain homeostasis and removed 40 minutes later. No oozing was noted.

The patient came to the oral clinic the next morning for oozing again. Oral examination found there was kermesinus purpura in the right extraction sites and palatal mucous. The patient was admitted into the hospital. We pressed the bleeding site with gauge, and vitamin K and carbazochrome were given to control the bleeding at the same time. Laboratory values obtained in the ED (what is ED?) showed prothrombin time: 15.3S, prothrombin activity: 64%. However, the bleeding persisted and the amount of the bleeding was estimated about 200 ml, the prothrombin complex was introduced into the sockets with gauze pressure over the sockets. The upper gastrointestinal hemorrhage was excluded by consulting with the internal medicine department.

Despite the above measures, we found the field of kermesinus purpura enlarged the third day after

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the dental extraction. Therefore the extraction site was strengthened with mattress-suture and oppressed with the prothrombin complex and the gauze continuously under local anesthesia.

The stitches were removed on the fourth day. The field of the kermesinus purpura stays stable and the color became pale. Baseline laboratory values showed a platelet count of  $40 \times 10^9/L$ , hemoglobin level of 84 g/L, prothrombin time: 16.4S, prothrombin activity: 58%. The patient was transported to the oral clinic for the exclusion of the upper gastrointestinal hemorrhage.

On the fifth day, no bleeding was reported by the patient. On the sixth day, a bleeding lasting 5.5 hours was stopped by pressing with gauze. On the seventh and eighth day, no bleeding was reported. The oral check showed that the mucosa on the right side of the palatal was reddish, and the wound has no seepage. We stopped the 4-day application of prothrombin complex and 5-day of anti-biotics. On the ninth day, the patient complained no hemorrhage. The oral check showed that the mucosa on the right side of the palatal was less reddish, and the wound was healing. At night of the same day, the patient's body temperature rose to  $38.9^\circ C$ , and dropped back to normal after the use of indomethacin. The blood check showed the WBC at  $4.16 \times 10^9/L$ , % NEUT at 87.2%, HGB at 100.0 g/L, and C-reactive protein at 8.0 mg/L. Suspecting abdominal cavity infection, we transferred the patient to liver digestive department for next treatment.

The patient was discharged from the hospital postoperatively in stable condition and followed up by the internal medicine department and oral department until one month after the dental extraction. As a result, his laboratory values have shown a considerable improvement in terms of hepatic function and hematologic parameters, the extraction wound healed well.

## Discussion

### The indications of dental extraction

Indicators(normal liver function, prothrombin activity PTA % for more than 60%, the platelet PLT over  $50 \times 10^9/L$  [1,2] of the patients conform to the standard of tooth extraction, but eventually the patient appeared hemorrhage after tooth extraction. It promoted that we should not only care the relevant indicators, but also pays special attention to the patient's general condition.

### Control the bleeding

Cirrhotic patients have varying degrees of coagulopathy, suggesting that if we give correction before extraction, maybe we can avoid post operative bleeding [3]. In this case, in view of the relatively normal blood coagulation of patients, we did not give any preoperative intervention, but the result was surprising.

The surgical procedure should be planned before teeth extraction, or a simple extraction may turn into a more complex procedure [3]. From this case, we learned, for patients with cirrhosis of in decompensate period, we should extract one by one even loose tooth, to a certain extent, it can reduce the occurrence of postoperative bleeding.

In this case, we found that the laser and the suture damaged the original wound, while local compression combined with drugs that promote blood clotting is an effective haemostatic method. Relevant clinical studies have proved that, compared with the joint use of clotting drugs, local compression can achieve the goal of the

bleeding [4]. Patatanian and Fugate [5] also reported no difference in hemostasis with the use of tranexamic acid rinses after tooth extraction in anticoagulated patients. For these, compression without tranexamic acid appears to be an acceptable approach and lowers the cost of the procedure. Al - Mubarak et al. [6] went further and reported that simple tooth extractions without sutures could be performed safely in anticoagulated patients with INRs of 3.0 or less. Recent studies have shown that use of antifibrinolytic agents with absorbable collagen sponges was effective as a local haemostatic measure after simple tooth extraction because of the fibrinolysis inhibition effect of combined with the mechanical effect of the collagen sponge placed in the tooth socket [7-8].

### Anti-infection

In this case, on the fourth day arose the obvious signs of infection such as large area of purpura (not cross the center line) appeared on the right side of the palatal of patients, neutrophil increased (77.9%), so we used the third generation of cephalosporin antibiotics. For the patients with cirrhosis, bacterial infection means the bad prognosis [9], timely and effective measures to prevent and control infection are very important [10].

Local compression for a long period of time and oral environment itself can both contribute to the occurrence of local bacterial infection and even systemic infection.

Severe infection is one of the major causes of mortality for patients with decompensated cirrhosis. For example, patients with cirrhosis were shown to have a higher probability of dying from sepsis (relative risk of 2) compared to those without cirrhosis in a large series of studies from the USA [11].

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