# TREATMENT WITH PRF AFTER TOOTH EXTRACTION, AS A PREVENTION OF THE DEVELOPMENT OF MRONJ

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**Abstract:** Exposure to the jawbone associated with the administration of bisphosphonates poses a risk of necrotic foci in the oral cavity. In the treatment of the patient in the present case, we investigated the effect of the membrane form of platelet-rich fibrin (PRF) on patients with drug osteonecrosis of the jaw due to a malignant process of the prostate. The patient underwent surgical treatment with PRF, following the surgical protocol with preparation of mucoperiosteal flap, excision of the osteonecrotic focus, hemostasis and placement of PRF, respectively, was monitored and no recurrence was found for 2 years. In 2020, the patient sought help for tooth extraction, and we decided to preventively place PRF immediately after extraction, as a prevention to prevent drug-induced osteonecrosis of the jaws, the patient was followed for a period of 6 months and no indication of osteonecrotic process and the healing of the extraction wounds went smoothly and without complications of local and general nature.
**Keywords:** PRF, MRONJ, osteonecrotic process, prevention, tooth extraction.

## 1. INTRODUCTION

Bisphosphonates are medicaments whose resorption by inhibiting osteoclast activity inhibits bone activity. Bisphosphonates are prescribed for the prevention of bone metastases for certain types of cancer and multiple myeloma, osteoporosis, Paget's disease and some other conditions (1). Bisphosphonates have been prescribed for these conditions for more than two decades with relatively few recognized side effects; however, jawbone exposure associated with the use of bisphosphonates was reported in 2003. Many similar reports have been published since then (2).

Surgical treatment remains one of the most reliable methods for eliminating necrotic foci. As a result of advances in research and the development of technology today, classical surgical techniques are combined with biological approaches such as the use of growth factors. One of these achievements is the platelet-rich fibrin membrane (PRFm), which can be obtained in an easy and affordable way in an outpatient setting.

In the treatment of the patient in the present case, we investigated the effect of the membrane form of platelet-rich fibrin (PRF) on patients with drug-induced osteonecrosis of the jaw due to a malignant process of the prostate.

## 2. DESCRIPTION OF THE CASE

In this article we present a case of a patient operated on a bilateral orchiectomy as a result of a malignant process of the prostate in 2013. In 2014, he underwent chemotherapy with Zometa due to the presence of bone metastases. In 2016, after extraction of two teeth of the lower jaw on the right, he was diagnosed with the diagnosis: drug-induced osteonecrosis of the lower jaw. In 2018 he was treated at the Clinic of Oral and Maxillofacial Surgery of UMBAL St. GEORGI - Plovdiv, and according to his data he has not been treated surgically so far, but has been prescribed antibiotics by dentists and oral surgeons.

## 3. DISCUSSION

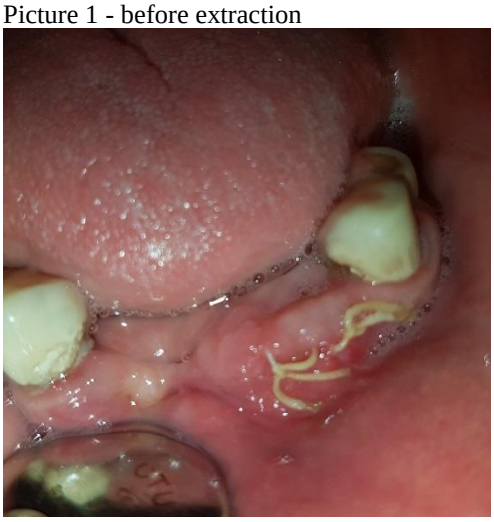
Tooth extractions and dental-alveolar surgical procedures in patients receiving bisphosphonates and other antiresorptive drugs are of increasing clinical importance in the field of oral and maxillofacial surgery. Based on clinical and epidemiological findings, tooth extraction often precedes the onset of MRONJ. Therefore, it is sometimes called a trigger event (3). In addition, tooth extractions and dental surgical procedures are also considered risk factors for the development of MRONJ (4).

As a result, some guidelines even recommend avoiding tooth extractions and dental surgery when taking bisphosphonates whenever possible (5).

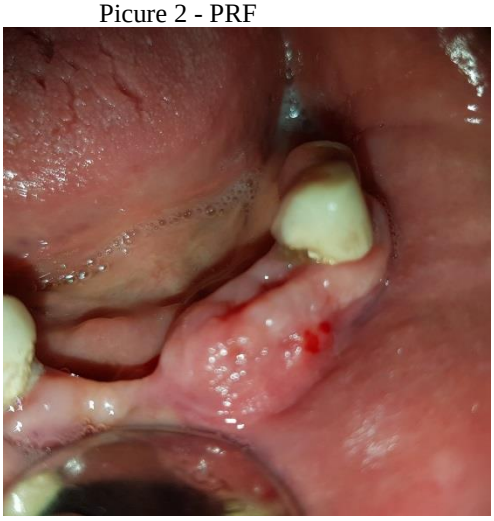
In the presented case the patient underwent surgical treatment with PRF, following the surgical protocol with preparation of mucoperiosteal flap, excision of the osteonecrotic focus, hemostasis and placement of PRF, respectively, was monitored and no recurrence was found for 2 years. In 2020, the patient sought help for tooth extraction, and we decided to preventively put PRF immediately after extraction, as a prevention to prevent drug-induced osteonecrosis of the jaws, the patient was followed for a period of 6 months and no indication of osteonecrotic process and the healing of the extraction wounds went smoothly and without complications of local and general nature. Interestingly, the extracted teeth are still on the lower jaw, only on the left side and next to the location of the cured osteonecrotic process on the right.

Picture 1 - before extraction

Picure 2 - PRF



Picture 3-with sutures after extraction



Picture 4 - after suturing

## 4. CONCLUSION

We applied PRF treatment immediately after tooth extraction and successfully prevented the appearance of a new osteonecrotic lesion in this patient, who was already treated for drug-induced osteonecrosis of the lower jaw in the same clinic.

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