TREATMENT PROTOCOL OF DENTIGEROUS CYST IN THE MANDIBLE, IN PATIENT RECEIVING INTRAVENOUS BEVACIZUMAB DUE TO OVER-CANCER METASTASIS; A CASE REPORT

K. Bektaş-Kayhan¹, M. Demir¹, S. Keskin², H. Çakır Karabaş³, İ. Özcan³, M. Soluk Tekkeşin⁴.

¹Istanbul University- Faculty of Dentistry, Department of Oral and Maxillofacial Surgery, Istanbul, Turkey.

²Memorial Hospital Oncology Centre, Department of Medical Oncology, Istanbul, Turkey.

³Istanbul University- Faculty of Dentistry, Department of Oral and Maxillofacial Radiology, Istanbul, Turkey.

⁴Istanbul University- Institute of Onkology, Department of Tumor Pathology, Istanbul, Turkey.

Objectives: The aim of this paper is to highlight the importance of dental treatment planning of patients with antianjiogenic drug use and multidisciplinary approach.

Introduction: There are both local and systemic risk factors associated with medication-related osteonecrosis of the jaw (MRONJ) development in an advanced cancer population with bone metastasis treated with antiangiogenic therapy. Local risk factors, such as invasive dental procedures (e.g. tooth extraction) or concomitant oral disease, may increase risk of MRONJ. The incidence of MRONJ associated with bevacizumab use is 0.2%.

Bevacizumab has a negative impact both on healing and the risk of developing MRONJ. Although the application of the recommended conservative and surgical treatment regimens have returned variable success rates; when oral surgery is necessary for these patients, treatment with multidisciplinary approach should be planned.

Case: A 52-year-old, female patient with metastatic over cancer was referred to the Istanbul University Faculty of Dentistry Department of Oral and Maxillofacial Surgery for dental treatment. The patient was directed to our clinic from the Memorial Hospital Oncology Centre, Department of Medical Oncology, for the evaluation of pain, swelling and purulence around right mandible angulus area.

The patient's current panoramic x-ray revealed a cyst that was found to develop from the coronal aspect of right mandibular third molar with bone retention. Clinically, there was swelling and pain in the same area of the patient. The patient's medical history, demonstrated bevacizumab use for 5 months along with chemotherapy, for every 3 weeks. The patient was directed to the Department of Oral and Maxillofacial Radiology for imaging and evaluation of the cyst area with cone-beam computerized tomography (CBCT). It was decided to perform marsupialization of cyst, in order to reduce the volume the risk of devel and oping necrosis due to major surgery. Bevacizumab was discontinued after the consultation with the medical oncologist of the patient. 3 weeks after, bevacizumab was discontinued, under the antibiotic treatment, right mandibular second molar was extracted and drain tube was attached through the extraction socket. The patient was followed regularly for 3 months with a change of drain tube every two weeks. During this time, antibiotic therapy was also applied regularly. After 3 months, the cyst was re-imaged with CBCT, but there is no significant change in cyst volume. Although a slight increase of the basal mandible volume which could support bone from fracture after surgery. Considering the risk of metastasis that may develop due to the Bevacizumab discontinuation the patient, a consultation with a medical oncologist was made and it was decided to remove the cyst by surgical operation. Surgery was performed under general anesthesia. The cystic tissue and accompanying teeth were completely removed by enucleation and curettage, preserving the existing wall structure. The specimen was referred to Istanbul University, Institute of Oncology, Department of Oral Pathology. Histopathologically, examination was reported with the dentigerous cyst.

At the second week follow up after surgery, an exposure at the lingual plate of mandible was observed. The exposed bone was removed and soft tissue was sutured to close the wound opening under local anesthesia. The patient was followed up clinically for a month, initially at one week intervals. Antibiotic treatment was applied during this one month follow-up. Then the patient was followed up in monthly intervals.

Although the healing process of the surgical field was prolonged, complete healing was achieved in the area. Two months after surgery, the patient developed another metastasis. The oncologic treatment of the patient is ongoing and the patient is still being followed in terms of MRONJ risk for 18 months.

Conclusions:

1. This case report reveals the importance of multidisciplinary approach in order to avoid the complications when oral surgery is needed in patients receiving antianjiogenic/ antiresorptive agents. However, the outcome may not always be as positive as in this case, and serious complications, especially MRONJ, may develop.
2. Patients should be referred dentists before cancer therapy . Oncologists, dentists and patients should have knowledge about the side effects of any kind of chemotherapy agent; it is important for the oncologist and the dentist decide on the most appropriate treatment procedure according to the patient needs.
3. In addition, in case that interventional dental treatment or dental surgery is planned, the information of bevacizumab or other antianjiogenic drug use should be reported by the patient and the oncologist.
4. For the drugs particularly has the risk of developing MRONJ its noteworthy to have a dental follow up. In this respect, the cancer treatment protocol applied to the patient does not have to be ceased due to dental problems.

Initial panoramic x-ray.

CBCT sagittal section.

CBCT sagittal section after the marsupialisation of the cyst.

Dentigerous cyst lined by thin nonkeratinized epithelium (H&E x100) .

Post-treatment panoramic x-ray.

Intraoral view-1 year after surgerys.