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CASE REPORT

Application of TMJ Prosthesis After Multicystic Ameloblastoma Resection: A Case Report

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ABSTRACT

Objectives
Ameloblastoma treatment includes variable methods from conservative to radical. A radical treatment option needs to consider reconstructive procedures. Alloplastic joint prostheses which have been popular in recent years can be used. In this case report, we present a case who was rehabilitated with an alloplastic joint prosthesis after radical ameloblastoma treatment.

Case Description
A 64-year-old patient was referred to our clinic. In the radiological examination, a multicystic lesion extending from the corpus to the condyle of the right mandible was noticed. The biopsy procedure was applied under local anesthesia. The pathological examination result was ameloblastoma. Segmental resection of the relevant region and rehabilitation with a custom TMJ prosthesis in the region. The patient has been followed up for 5 months after the operation and is still being followed up.

Conclusion
After the TMJ prosthesis, we applied to our patient, our patient's speech and chewing function were largely preserved. In addition, there were no cosmetic problems. Although applying TMJ prostheses is more expensive than other radical treatments, it contributes greatly to patient morbidity.

Key words: ameloblastoma, reconstruction, temporomandibular prosthesis

INTRODUCTION

Ameloblastoma is an aggressive benign tumor that accounts for 1-3% of all tumors of the jaws and is four times more common in mandible[1]. It can cause perforation as well as expansion of the cortical bone but does not cause pain. Ameloblastomas have a high recurrence rate[1]. In 2005, the World Health Organization classified ameloblastomas as solid/multicystic ameloblastoma, unicystic ameloblastoma, peripheral (or extraosseous) ameloblastoma, and desmoplastic ameloblastoma[2].

Although the treatment of such a pathology can be done with conservative treatments such as enucleation, marsupialization, curettage and cryosurgery, the common treatment method is resection. After radical treatment of ameloblastoma, reconstructive procedures including bone grafts, distraction osteogenesis(DO), costochondral grafts, and other alternatives should be included in the surgical plan. The aim of this case report is to demonstrate the reconstruction of a solid/multicystic type large ameloblastoma case with a custom-made TMJ prosthesis treated with hemi-mandibulectomy[3].

CASE PRESENTATION

A 64-year-old female patient was referred to our clinic because of a lesion in the right ramus of the mandible. As a result of the radiological examination, in the right mandible; a multicystic lesion extending from the condyle to the corpus was observed. In the clinical examination, Although there was expansion in the condyle, mouth opening was at the lower limit of the normal range.. Right condyle area was sensitive to palpation. A sample was taken from the region under local anesthesia and sent to the pathological examination. As the pathology result was ameloblastoma, it was decided to remove the lesion by segmental resection. After the interviews with the patient, after the lesion was removed, it was decided to place a custom-made alloplastic TMJ prosthesis.

CBCT images of the patient were sent to a company supported by TUBITAK. A 3D model was created using tomography sections. After the osteotomy lines were determined, a TMJ prosthesis suitable for the region was produced. After we received the prosthesis, the patient was taken into operation. The patient was operated on under general anesthesia. Pre-

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op 2 g of cefazolin was given intravenously. The patient was intubated nasotracheal. Extra oral flaps were opened with preauricular and submandibular incisions. First, osteotomies were made from the regions determined on the model and the ameloblastoma was removed. The fossa component of the TMJ prosthesis was placed in the temporal bone and then fixed to the bone with screws. The ramus component of the prosthesis was passed under the opened flaps and the condyle component of the prosthesis was placed on the fossa component. Then it was fixed from the ramus part with the help of screws. During the operation, the patient's occlusion was controlled. Then, firstly, several flaps were removed from the temporal muscle and slid over the joint part of the prosthesis. The opened flaps were closed primarily.

The patient was discharged on the 3rd postoperative day. The patient's controls are carried out regularly. The patient has been followed for 5 months and is still being followed. In the control, the mouth opening of the patient was measured as 35 mm and there was no function loss.

DISCUSSION

Ameloblastoma is a benign lesion with aggressive features. It is observed more frequently in the mandible than in the maxilla[1]. The accepted and successful treatment is resection[4]. In cases of ameloblastoma extending to the condyle, such as in our case, reconstruction of the region following resection should also be considered. Because it is important to protect the patient's function and provide cosmetic needs as much as performing the treatment.

It can be grafted using autogenous bone graft for the reconstruction of the region. Only then, the operation time will be prolonged, the patient will feel discomfort in the donor area and it will be difficult to achieve occlusion[5,6]. Costochondral grafts are more preferred in growing patients[7]. In addition, 25% of costochondral graft use results in ankylosis[8]. In cases where reconstruction is performed using the distraction osteogenesis method, complications may develop depending on the apparatus used and the duration of treatment will be prolonged[9].

Alloplastic custom TMJ prostheses can be used not only for reconstruction after pathology treatment but also in cases such as degenerative joint diseases[10], ankylosis[11]and natal disorders[12].

Custom TMJ prostheses are a very good option for reconstruction after other tumor treatments such as ameloblastoma. As with autogenous treatments, the risk of complications is low and the effect on patient morbidity is limited. It can also be used by the patient quickly after the operation. However, its high cost can be challenging for patients. In addition, the production of custom made TMJ prostheses takes time. In addition, in the 20-year follow-up reports, pain felt in the jaw and improvement in jaw function in patients using custom-made TMJ prosthesis; An increase in the ability to eat solid food and an improvement in quality of life are reported[13].

CONCLUSION

The use of a custom TMJ prosthesis after TMJ resection in treatments for which resection is the accepted treatment, such as ameloblastoma, enables the patient to regain their functions quickly and effectively. In addition, a donor site is not required for autogenous grafting.

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