Mandibulectomy in Desmoblastic Ameloblastoma: Physiotherapeutic Approach in a Sporadic Oral Surgery Case

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Abstract

Introduction: Ameloblastomas are slow-growing lesion with local infiltrative and odontogenic tumors of epithelial origin. Desmoblastic ameloblastoma is traditionally considered to be a subtype of SMA.

The purpose of this case report is to describe the physiotherapy rehabilitation in mandibulectomy of the right side. A patient chief complaint was inability to open mouth, inability to eat food, impaired cognitive and social behavior. The primary goals of mandibular reconstruction are feature restoration and an appropriate cosmetic outcome. The diagnosis of desmoblastic ameloblastoma was confirmed by bone biopsy. Mandibulectomy of right side done due to desmoblastic ameloblastoma. Physiotherapy treatment is found to be best to resolve patient's chief complaints.

Results: The case report demonstrated that patients with Mandibulectomy with minimal mouth opening regain near-normal range and improvement in social skills.

Conclusion: The patient was able to do essential activities of daily living like eating and talking without pain and regain near-normal face appearance due to physiotherapy intervention.

Key words: *Ameoblastoma, Mandibulectomy, Physiotherapy, Rocabado mobilisation, Quality of life.*

Introduction

The origin of Ameloblastoma is from the odontogenic epithelium and it is the second most common tumor, only next to odontoma. The tumor is considered benign even with its locally invasive nature [(1)]. Ameloblastomas signify 1 to 3 percent of all oral and maxillomandibular cysts and tumors. The most common type of multicystic /solid ameloblastoma is 91 percent of all ameloblastoma. There are several options available for restoring the defects after surgery. The primary goals of mandibular reconstruction are feature restoration and an appropriate cosmetic outcome. Many options like vascularized or non-vascularized bone grafts, bone morphogenic protein, and osteogenesis disturbance (OD) are choices. Desmoblastic Ameloblastoma case mandibulectomy is the surgical option though it is noncarcinogenic [(2)]. To avoid arbitrary conclusions, a reasonable exercise planning must be proposed by scientific research society [(3,4)].

Patient information

A case of 51-year-old female severely affected by cystic lesion over the right mandibular body region is presented in the study, wherein the final diagnosis was desmoplastic ameloblastoma of the right mandibular body region (figure 1). The patient complains of painful swelling over the lower right back region of the jaw which was initially small in size and gradually increased to present size 7×4 cm approximately. No history of regression in size of the swelling. History of associated pain which was gradual in onset, dull aching, intermittent, and localized in nature. Pain aggravated on mastication and relieves on its own over a time. There was no history of associated trauma or burning sensation on the consumption of hot and spicy food. Positive history of change in consistency of saliva from normal

to thick and ropy since 1 month approximately. Reduced in salivation for 1 month. Composite resection of lesion, segmental mandibulectomy from 41 to angle of mandible of the right side, and reconstruction with peak implant was done (figure 2). Then from next day physiotherapy treatment was started.

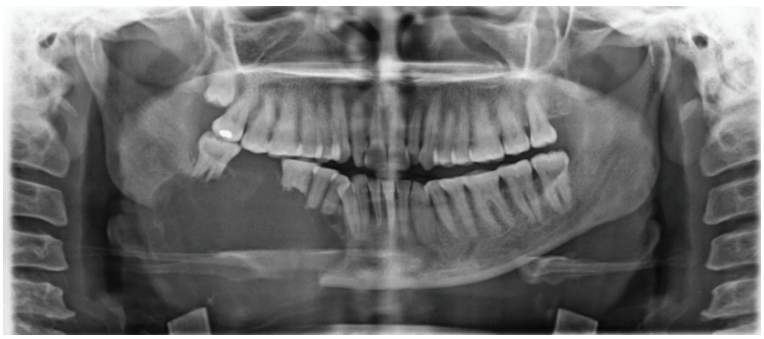

Figure 1: Pre-operative X-ray

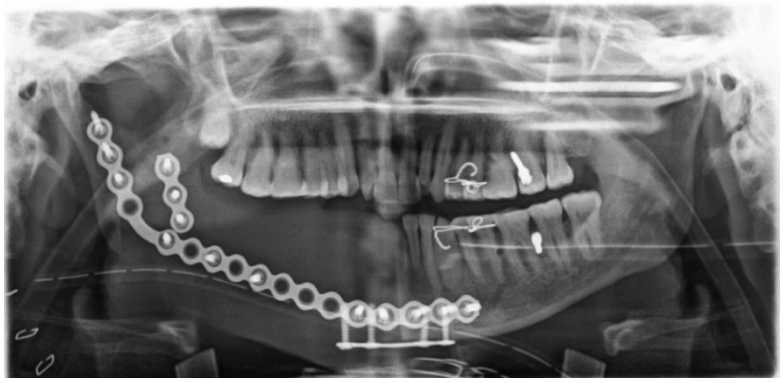

Figure 2: Post-operative X-ray

Assessment

The patient in this study had difficulty in opening mouth, swelling over the right cheek, difficulty in eating, and talking. The patient was disturbed due to the pain and appearance of the face. Neck movement was normal. Further assessment was taken by FONSECA questionnaire.

Physiotherapy intervention

The patient received physiotherapy for 1 week on a regular basis in the oral surgery ward by a skilled Musculophysiotherapist. Facial muscle exercises and mouth opening actively within the pain limit done by the patient.

The treatment was started with the goal to reduce pain and increase mobility. Further training was carried out when the patient came to the physiotherapy department on a regular basis. Proper mobilization and exercise were given to patient. Joint mobilization can be performed in various directions to improve the joint play at TMJ, such as- distraction, distraction given with anterior glide, distraction given with anterior glide, and lateral glide right/left and lateral glide without distraction. And Rocabado's 6X6 exercise program has various exercises that had to be performed 6 times a day with 6 repetitions of each exercise and it includes- rest position of the tongue, shoulder posture correction, stabilization of head flexion, axial extension of the neck and controlled TMJ rotation.

Result

Improvement in range of mouth opening and reduction in pain. Due to early exercise reduction of swelling over face and eating was easier to patient. The patient was depressed by facial appearance and difficulty in talking. After physiotherapy sessions, pain and

swelling were reduced so the patient could talk properly and evenness in facial muscles nearly same.

Discussion

Ameloblastomas (odontogenic tumors) of epithelial source and are sluggish rising lesion with home-grown infiltrative development possible [5]. Ameloblastomas, excluding odontomas, are the most common odontogenic tumors. Desmoplastic ameloblastoma varies from other predictable ameloblastomas meticulously, in the clinical sense, and X-ray prediction [6]. OPG (Orthopantomogram) and FNAC (Fine Needle Aspiration Cytology) were done in the above patient to confirm the diagnosis.

In this case, the patient represented with painful swelling over the lower right back region of the jaw and gradual increase in swelling. After Composite resection of the lesion, segmental mandibulectomy from 41 to angle of mandible of right side and reconstruction with peak implant was done referring to physiotherapy, patient complains of pain and swelling on the operated side. A successful plan of care was made following a clinical evaluation. Goals for rehabilitation were set, starting from mild exercises to strengthening and manipulations to the temporomandibular joint. All the exercises were performed with each one six times a day 6 types of exercises and 6 sets; ice packs were applied around the patient's right TM joint and cheek to reduce the exercise caused discomfort during the therapy session. There are works of literature that show the effects of temporomandibular joint dysfunction recovery for patients, but research on surgical cases like mandibulectomy and routine treatments are missing [7,8]. Exercises post-surgery are important to restore the vital functions of the segment [9]. It is highly recommended to restore the functional movements of the post-operative adjacent joints along with the affected segment to obtain optimal positive outcomes and prognosis with respect to the case and individualized exercise program [10–12].

Mariano Rocabado's rehabilitation effort in patients through inner disorders involved physical joint distraction; disc/condyle recovery with "capture" discs; rigorous exercise therapy, including Rocabado's 6 x 6 exercise program The findings indicate an 86 percent improvement proportion in patients with initial- to mid-opening and late- to mid-closure clicks of the temporomandibular joint [13].

Conclusion

This case report provides a comprehensive rehabilitation plan that helped relieve pain, swelling, increase strength and mouth opening post-operatively. In conclusion, this case report demonstrates that patients with Mandibulectomy with minimal mouth opening regain near-normal range. The patient was able to do essential activities of daily living like eating and talking without pain and regain near-normal face appearance due to physiotherapy intervention.

Conflict of Interest – The authors declare that they have no conflict of interest.

Informed Consent – Written and Oral informed consent was obtained from the participant included in the study. Additional informed consent was obtained from all individual participants for whom identifying information is included in this manuscript.

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