

Immediate Prosthetic Rehabilitation of Surgically Enucleated Pindborg tumour: A case report.

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ABSTRACT

Treatment of patients with maxillofacial defects is one of the most challenging tasks. Prosthetic reconstruction of maxillomandibular defects may be achieved with the help of removable and fixed prosthesis to restore the lost form, function and speech. The purpose of this article is to describes a case of CEOT (Calcifying Epithelial Odontogenic Tumor) in left mandibular body region managed with a treatment obturator, which allowed closure of the defect by secondary healing through granulation tissue maturation and associated bone fill. A 19 guage wire was used to stabilize the appliance, and provide retentive properties. The obturator allowed decrease in size of defect and enhanced comfort and overall well-being of the patient.

Keywords: CEOT, Pindborg tumor, prosthetic rehabilitation, treatment obturator.

INTRODUCTION

Orofacial defects may be the result of congenital malformations, trauma or surgical resection of tumors. The primary objective of rehabilitating these defects is to eliminate the disease by surgical resection and improve the quality-of-life for these individuals.^[1] CEOT was first described by Dr. Jens J. Pindborg, 1955, henceforth called as Pindborg tumor.^[2,3]

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Calcifying epithelial odontogenic tumor (CEOT) is a rare benign odontogenic neoplasm, forming 0.4-3.0% of all intraosseous tumors.^[4,5] It is a rare entity, and represent less than 1% of all odontogenic tumors possibly of stratum inter- medium origin. This idea is based on the morphological similarity of the tumor cells to the normal cells of the stratum inter-medium, and high activity of alkaline phosphatase and adenosine triphosphate. Clinically, CEOT manifests as an intraosseous lesion (central type) in the majority of cases (95%).^[6]

The treatment of CEOT ranges from simple enucleation^[7] or curettage to radical and extensive resection, such as, hemimandibulectomy or hemimaxillectomy. The prognosis of CEOT is good with infrequent recurrence with the recurrence rate

of 14% and recurrent lesion may not be manifested for many years.^[8]

Management of such mandibular defects require all facets of patient care from diagnosis and treatment planning to rehabilitation and using obturator prosthesis is one of them. Obturator is derived from the Latin verb "obturare" which means to close or to shut off.^[9] With the aim of preventing the defective area from contamination and provide an uneventful healing.

CASE REPORT

The 23-year-old male patient presented a history of swelling that gradually increased in size since 2 years in relation to the left lower jaw back region.

On extra-oral examination, the patient was moderately built with all the vital signs within the normal limits. Facial asymmetry with a hard palpable mass was felt with respect to the lower left mandibular region of the face. There was no tenderness or lymphadenopathy noted.

On clinical inspection, a solitary swelling extending from the lower left border of the mandible was revealed. The swelling was approximately 4.5 cm × 3.2 cm in size, ovoid in shape, and hard in consistency. The color was similar to that of normal skin, with a smooth texture and well-defined borders. No visible secondary changes were seen. Intraoral inspection showed a well-defined, non-tender, firm swelling involving 34 till 37 region with expansion and distortion of the buccalcortical plates

and minimum involvement lingually. Incisional biopsy was done under local anesthesia, and the section revealed presence of sheets of polyhedral epithelial cells in a fibrous connective tissue stroma with prominent intercellular bridges and multiple areas of calcifications [Figure 1]. A definitive diagnosis of CEOT was given. The case was posted for surgical enucleation under local anaesthesia.

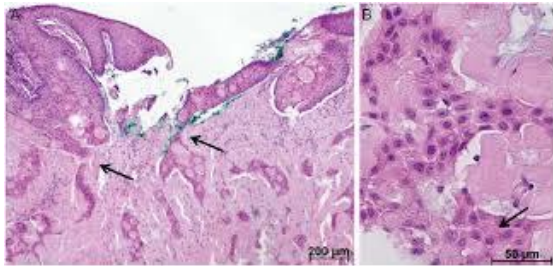


Figure 1: H and E, showing epithelial islands associated with multiple areas of calcification: Shows pleomorphic and hyperchromatic epithelial cells with prominent desmosomal and amyloid like material.

Treatment consisted of surgical enucleation of the defect followed by the closure with treatment obturator [Figure 2]. This led to healthy granulation tissue formation and bone healing. The obturator also prevented food accumulation and contamination of the defect.



Figure 2: Defect after surgical enucleation.

Treatment obturator (interim) construction

After a thorough diagnostic evaluation, a surgical procedure was performed with the particular attention to the nature of the disease, patient's condition, size and extension of the cyst, tissue loss and the possibilities of prosthetic management of a mandibular bone defect with partial post-resection dental prosthesis.

Fabrication of the treatment obturator was done using a 19 gauge wire. Wire adaptation was done from buccal to lingual side around mesial and distal end of 1st premolar in such a way that it would not disturb the occlusion. Other wire was adapted around the distal end of second molar passing from

buccal to lingual providing stability to the prosthesis. Wax up was done and treatment obturator was fabricated with a heat cure resin. The buccal surface of the obturator was relined with soft liner [Figure 3] to close the defect.



Figure 3: soft liner used on buccal surface.

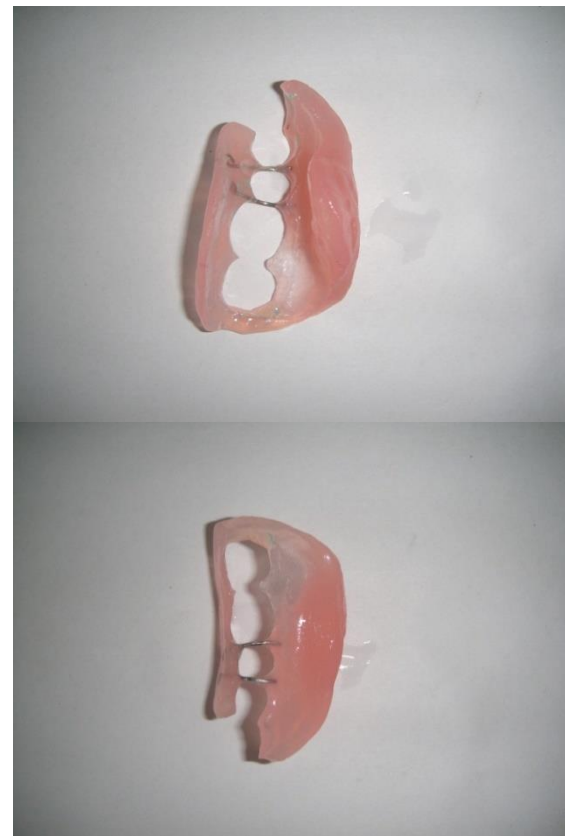


Figure 4: final prosthesis.

Final prosthesis [Figure 4] was delivered [Figure 5]. Patient was instructed about maintenance of oral hygiene and was advised to report once every month (for a period of 6 month). On every visit, the relining material was changed and the defect was inspected to check for reoccurrence and healing. The defect showed a gradual decrease in size in each follow-up and led to effective bone tissue regeneration (osteogenesis).



Figure 5: interim obturator delivered.

DISCUSSION

Treatment of mandibular defect may arise from surgical resection of mandible, tongue, floor of mouth and associated structures. Disabilities resulting from such resection include impaired speech articulation, difficulty in swallowing, trismus, deviation of mandible during functional movement,^[10,11] poor control of salivary secretions and severe cosmetic disfigurement.

Based on the amount of resection or extent of bone loss, mandibular defects can be classified as continuity and discontinuity defects. Mandibular discontinuity can be managed by immediate or delayed surgical reconstruction to re-establish continuity. Loss of mandibular continuity alters the symmetry of mandible, due to the rotation and deviation of the residual mandible toward the affected side.^[11,12] The prosthetic rehabilitation of patients with resection generally requires an immediate post-surgical prosthesis, an interim prosthesis and a permanent prosthesis. However, most of patients with acquired surgical defects can be restored close to normal function and appearance.^[13,14] The success and the failure of the prostheses may be influenced by the degree of malignancy; the propensity of recurrence; the level of resection; and other associated complications.^[15] Interim obturator is worn in the post-operative healing period. It can be modified to compensate for tissue changes or surgical defect, which is different from the pre-surgical obturator. Usually it is constructed from the post-surgical impression to accurately reflect the defect. The obturator is relined periodically for better adaptation as the healing progress.^[16,17]

Primary concern of the treatment is to assure that the oral cavity is prepared to reduce the potential untoward effects of cancer treatment.^[17] Patient was trained in oral hygiene methods and therapeutics for oral health preservation and rehabilitates the post-surgical defect utilizing prosthesis.^[14,16] Long-term follow-up and evaluation with an eye to the possibility of lesion recurrence is a part of the crucial

contribution by the Prosthodontist (Khan et al., 2006).^[13]

CONCLUSION

Treatment of patients with tumorous growths has always been a difficult task due to the unpredictable nature of the defects and the probability of recurrence. Integrated effort, sound knowledge and practical implication are all required in rehabilitating these defects. Hence, it is important to carry out early surgical intervention before such lesions show wide spread involvement. The prosthesis effectiveness and acceptance should be the primary factor that the Prosthodontist should bear in mind. Oral rehabilitation of patients with mandibular defect often requires multidisciplinary approach. Provision of mandibular obturators with good retention not only improve the quality of life but also enhance self-esteem of the patients.

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