

Prosthetic rehabilitation after enucleation of cystic lesion with semi precision attachment and telescopic crown

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ABSTRACT

The demand for a quality dental practice is increasing in today's era. Along with the form and function of the prosthesis, esthetics is also a matter of concern. Prosthetic rehabilitation of an enucleated cystic lesion becomes challenging in some conditions. Here, we report the case of prosthetic rehabilitation after enucleation of the cystic lesion with semi-precision attachment and telescopic crown in a 30-year-old female. In this case after enucleation of Odontogenic Keratocyst, the prosthesis was fabricated using semi-precision attachment along with the telescopic crown which provided proper retention, stability, and aesthetics.

Keywords: *Odontogenic keratocyst, Semi-precision attachment, Telescopic crown.*

Odontogenic Keratocyst (OKC), a cystic lesion, odontogenic in origin, aggressive and known for its rapid growth in the oral cavity. It has a tendency to invade the adjacent tissues. They are benign but have a high recurrence rate of 16 to 30% [1]. This lesion was first described in 1956 by Phillipsen [2]. The incidence of OKC is slightly higher, the biopsies revealed OKC in 49 cases out of 2900, of which 33 (67.34%) were males and 16 (32.66%) were females [3]. Surgical management involves enucleation of the cystic lesion with excision of the underlying soft and hard tissues involved to reduce the incidence of recurrence [4]. Prosthetic rehabilitation after enucleation of the cystic lesion can become challenging at times. Depending on the systemic conditions, adjacent hard and soft tissues, amount of bone loss, the extent of the edentulous span and the economic considerations of the patient, the treatment option has to be planned.

The various options available for restoring partially edentulous arches are cast partial dentures, dental bridges, precision attachments, and dental implants. Considering the systemic and economic conditions of the patient where a dental implant cannot

be opt, precision attachments are a good treatment of choice. Here, we report the case of prosthetic rehabilitation after enucleation of the cystic lesion with semi-precision attachment and telescopic crown.

CASE REPORT

A 30-year-old female patient reported to the department with a complaint of swelling in the right lower back region of the jaw. The patient had noted the swelling 5 weeks prior. On examination, there was a hard-bony swelling extending from 42 to 46 region. The swelling was 6 cm x 3 cm size and the overlying mucosa was normal with no signs of sinus or pus discharge.

On radiographic examination (orthopantomogram), there was a radiolucency seen from 33 to 46 region (Fig. 1a). Surgical excision

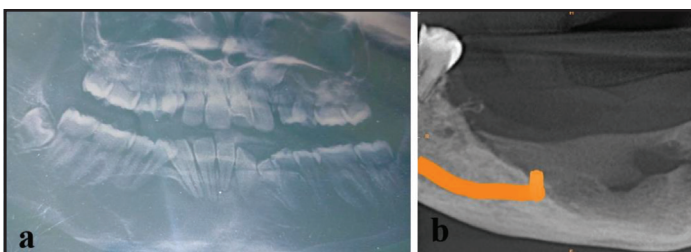


Figure 1: (a) Preoperative (OPG) and (b) postoperative radiograph.



Figure 2: Cast poured after enucleation of cystic lesion for fabrication of stent.

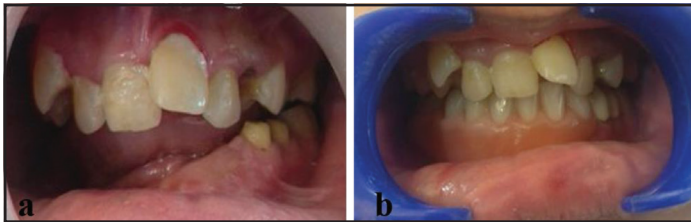


Figure 3: (a) Irregularly placed maxillary teeth with increased inter-arch space; (b) Prosthesis cemented with GC type 1 luting cement and Acrylic component placed in patient's mouth.

was planned and excisional biopsy revealed it as odontogenic keratocyst. Postoperative radiograph is shown in Fig. 1b.

Post-excision, the impression was made using elastomeric impression material (3M ESPE Putty) to fabricate a stent of clear acrylic. The impression was poured using Type III gypsum product (Kalabhai Kalstone Dental Stone) (Fig. 2). The stent was fabricated with heat cure acrylic (DPI clear acrylic) as it could be trimmed and relined depending on the wound healing. The patient was recalled every month for a periodic check-up. After 11 months, intraoral examination revealed satisfactory wound healing, the teeth present in the mandibular arch were 34, 35, 36, 37 and 47 and the maxillary arch had irregularly placed crowded teeth (Fig. 3a). The radiographic examination was carried and a Cone Beam Computed Tomography (CBCT) scan was advised to assess for the implant placement followed by prosthetic rehabilitation report which revealed malunion which was not favourable for the implant procedure (Fig. 4). All the treatment options and the final treatment plan were explained to the patient and patient's consent was taken.

A diagnostic impression was then made with the maxillary arch using irreversible hydrocolloid (Zhermack Tropicalgin Alginate) and the cast was poured using dental stone (Kalabhai Kalstone Dental Stone). Face bow transfer was done and the maxillary cast was mounted to the semi-adjustable articulator. Abutment teeth were prepared and bite registration was recorded using bite registration wax (ALUWAX) to mount the lower cast.

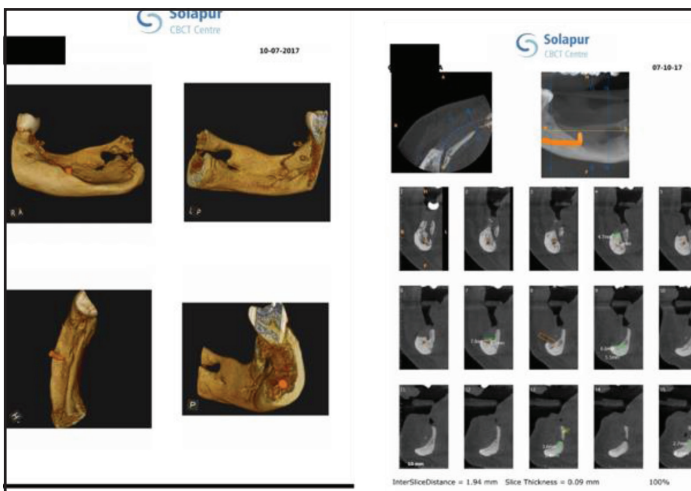


Figure 4: CBCT scan.

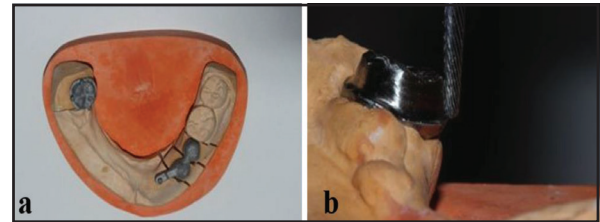


Figure 5: (a) Attachment and telescopic crown ready for checking the fit and pick up impression; (b) Creating parallel walls of telescopic crown using Bredent Milling unit.

An impression of the mandibular arch was made using elastomeric impression material (3M ESPE Putty) followed by cast pouring. The attachment and the telescopic crown were then fabricated on the obtained master cast. The semi-precision attachment used was Rhein'83 using 34 and 35 as abutment teeth and telescopic crown with 47 (Fig. 5a).

The attachment and telescopic crown were placed in the patient's mouth to check the marginal fit of the crowns and soft tissue contact with the attachment. There were 3 extensions made on the mesial, distal and buccal aspect of the telescopic crown to prevent the rotation of the crown at the time of pick up impression (anti-rotational feature). The attachment and the telescopic crown were luted using ZOE temporary cement (Dentsply Intermediate Restorative Material) (Fig. 6) and were picked up with elastomeric impression material (3M ESPE Putty). The parallelism of the telescopic crown was obtained by surveying and milling using the Bredent Milling Unit (BF2) (Figure 5b).

The ceramic build-up was done over 34 and 35 and teeth arrangement was done. Wax trial and the bisque trial was checked in the patient's mouth (Fig. 7). Heat cure acrylization was carried out and the prosthesis was ready for cementation. The prosthesis was cemented using type 1 GIC (GC luting cement) (Fig. 8) and the acrylic component was placed in the patient's mouth (Fig. 3b). The patient was recalled for follow-up after a year and the patient was not having any discomfort or complaints.



Figure 6: Attachment and telescopic crown luted with ZOE for pick up impression.



Figure 7: Ceramic build up and teeth arrangement done. Wax trial and bisque trial in patient's mouth.

DISCUSSION

In this particular case, there was more inter-arch space because of the alveolar ridge resorption caused due to surgical excision of the cystic lesion. The prosthesis had to replace hard tissue along with the soft tissue component [5] considering esthetics. The edentulous span was long enough to fabricate a conventional crown and bridge prosthesis. A cast partial denture if had planned would have minimal retention and stability because of poor vestibular depth and soft tissue attachment. Implants considering as a treatment option would be an FP3 type of prosthesis [6] which could be an option to rehabilitate by two approaches one is hybrid prosthesis or a porcelain-metal restoration [7] but since the CBCT reports were not favourable suggesting of malunion and the patient was also not so keen for implant prosthesis knowing the reoccurrence of OKC's. The precision attachment has been considered advantageous in dentistry as it combines fixed and removable prosthesis. The extra coronal precision attachment is one of the types of attachment which provides retention and stability to the prosthesis [8].

Studies have shown that the survival rate of attachment retained partial denture for 5 years is 83%, for 15 years is 67% and for 20 years is upto 50% [9,10]. Telescopic crowns also known as double crowns have been used in removable partial denture (RPD) to connect the prosthesis to the remaining dentition [11]. The retention obtained from the telescopic crown is due to the parallel walls of the double crown which provides only one path of insertion and removal. In such condition's precision attachment become a good choice of treatment to aid retention, stability, and optimal aesthetics. A telescopic crown planned; the parallel walls fabricated in telescopic crowns provided retention to the prosthesis [12].

CONCLUSION

This case report describes the use of semi-precision attachment and telescopic crown for prosthetic rehabilitation of enucleated cystic lesion. The use of precision attachment Rhein'83 provided better retention and stability and the telescopic crown which had



Figure 8: Telescopic Crown and Attachment Prosthesis.

only one axis of removal due to the parallel walls aided in the retention of the prosthesis. This treatment option provided the proper form and function along with optimal aesthetics.

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