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Controversies in prosthodontics is more often a myth than a reality. Long hours of argument over a procedure, technique, principle or a theory can only create more confusion & ambiguity. Let us ask ourselves for whom are we performing the procedure or the techniques? The answer is of course 'the patient'. So how can we have a generalization of any clinical procedure, materials used or principles to be followed. It is the patient and the condition of the stomatognathic system including his general health that dictates and guides our clinical steps in prosthodontics. It is the "patient centered approach" that will help us to narrow down our broad spectrum of learning & clinical skills as per the requirements of the existing condition of the oral environment. Prosthodontics is not the number of edentulous spaces or just the number of teeth present, it is the science that deals with rehabilitating and optimising the patient's stomatognathic system that would help in optimising the oral and general health & contribute towards his total well being.



General discussions regarding the advantages and disadvantages of impression techniques and materials are futile. According to the condition of the residual alveolar ridges, the soft tissues & the general health of the patient, the impression procedures, techniques and materials would vary with each situation. Theories, principles and techniques have academic importance and above all they give a direction to a clinician. The ultimate goal in prosthodontics being function, aesthetics and preservation, the path taken to achieve this goal is guided by the needs of the case. Rigid ideas only lead to so called 'school of thoughts' & these have little place in clinical practice. In practice it is not how meticulously we execute a procedure or a technique but how well we understand the demands of the case.

Dentistry can not be dictated by materials and techniques. Prosthodontics can not be generalized. Every patient is unique and at different times the condition of the oral cavity of the same patient may be different. In this mechanized age let us not make the science of prosthodontics into a mechanical field. Let us understand our patient, his mind, his needs & his stomatognathic system.

Dr. (Mrs.) S. J. Nagda
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History of Prosthodontics

MRS. S. J. NAGDA, M.D.S.*

HISTORY OF FIXED PARTIAL DENTURES PONTICS AND RETAINERS

It seems apparent that the most ancient dental prosthetic appliances have been of the fixed bridgework type. The ancient relics of early civilization are artificial teeth, or detached teeth from one mouth adjusted to another by means of ligatures or similar contrivances to hold them in place.

Pontic is a suspended member of the Fixed Partial Denture which replaces the missing teeth & performs its functions. In as early as 300 to 400 B.C. natural teeth from which roots were removed & fastened to the remaining teeth with gold wire were used. Since then innumerable material have been tried in fixed partial dentures.

Teeth carved from bone or ivory & ligated to the natural teeth were used in the middle of the 16th century. History reveals that shells, wooden blocks, animal bone, teeth, different types of metals & alloys were used to replace missing teeth.

Pierre Fauchard has often been referred to as the father of modern dental prosthesis. He used what he called "tenons" which were in reality dowels or pivots screwed into the roots to retain some of the bridges & it is possible that he may have been the first to attach dental bridges to tooth roots by this method. Since then as material science evolved a quest for the most biocompatible & esthetic material continued.

In 1871, B.J. Bing, developed an artificial porcelain tooth to which a platinum bar extended from the lateral side. The ends of this bar were to be anchored in fillings in adjacent natural teeth. In 1873, J.B. Pears, patented a gold banded crown with swaged cusps. In the 19th century, retainers consisting of complete gold shell crowns & porcelain faced crowns as pontics became common in use.

A considerable variety of pontic facings and backings came into use. Long pin facing pontic, steel's flat back pontic, steel's trupertic, reverse pin facing pontics were some of the porcelain facings which came into use. A number of designs for pontics with a facing of heat use acrylic resin have been described in which acrylic is protected from occlusal stresses.

The foundation laid down by the early developers of fixed partial dentures has helped us to classify

pontics in two general groups - those that contact the oral mucosa & those that do not. Pontic selection depends on esthetics & oral hygiene. In the anterior region where esthetics is a concern, the pontic should be well adapted to the tissues to make it appear as if it emerges from the gingiva conversely in posterior region where esthetics can be compromised in interest of oral hygiene designs which are more amenable to cleansing should be used.

The sanitary or hygienic pontic designed by Stein allows easy cleaning because its tissue surface remains clear of the residual ridge. However it is the least "tooth like" design & therefore reserved for teeth seldom displayed during function. The modified sanitary pontic with "arch way" shaped gingival surface decreases stress concentration.

The saddle or ridge lap pontic at the other end overlaps the residual ridge bucco-lingually simulating the emergence profile of the missing tooth, however it is not accessible to cleaning.

The modified ridge lap combines the best features of hygienic and saddle pontic. It is usually of metal ceramic or all resin & the gingival surface has a depression to allow adequate plaque control.

The recent of the designs is the ovate pontic which is most esthetically appealing. Its convex tissue surface resides in the soft tissue depression or hollow in the residual ridge which makes it appear that a tooth is literally emerging from the gingiva. Careful treatment planning is necessary for successful results. For pre-existing ridges a socket depression is sculpted into the ridge with surgical diamonds or electrosurgery. Its strengths include its pleasing appearance, strength & accessibility to oral hygiene. For any of the above designs, the material chosen should provide good esthetic results where needed, biocompatibility, rigidity & strength to withstand the occlusal forces. All metal, metal-ceramic, resin-veneered, composite resins & fibre reinforced composite resin are some of the materials which have become very popular in pontic fabrication. With the development of newer materials & designs we are reaching the ever elusive goal of replacing the natural tooth with its life like substitute.

*Professor and Head, Dept. of Prosthodontics, Nair Hospital Dental College, Mumbai.

Prosthesis for Cheek Support - A Case Report

AQUAVIVA FERNANDES, M.D.S.*, MARIO CORREIA, M.D.S.***, NADIA PINTO, M.D.S.**

ABSTRACT

The case report discusses about a patient who had psychological depression due to sunken appearance of his cheeks which was managed by designing a removable partial denture which had a hollow bulb cheek pad to provide the necessary cheek support.

INTRODUCTION

The causes for sunken appearance of cheeks and lips are loss of teeth due to extraction, loss of weight and loss of vertical dimension. Hence the function of a cheek lifting appliance is to restore lost support to the cheeks and lips, so as to improve the appearance of the patient which is thereby beneficial to enhance the self-confidence and mental status of the individual.

The external form of the lips and cheeks is dependent on the internal structure of their underlying support. This support may be natural teeth and ridges or dentures. When the lips and cheeks are unsupported the muscles do not function properly and become weak. As a result the skin wrinkles and lips and cheeks sag. However, sometimes the denture flanges do not provide adequate support, hence extra support is required. This extra support is provided by using cheek pads. The objectives for using these cheek pads are to provide necessary support to the cheek muscles in order to improve the appearance of the patient by reducing sagging of the cheeks, and improve the muscle tone.

Following is a case report of a patient treated with a cheek support prosthesis.

CASE REPORT

A 35 year old patient was referred by a psychologist with the chief complaint of depression due to an ageing appearance and sunken cheeks. His history revealed extraction of his teeth due to caries, following which a removable partial denture was given. The patient was unhappy with his appearance as his cheeks appeared sunken in spite of using the denture (Fig. 1). Extra oral examination revealed sagging of his cheeks with reduced muscle tone. Intra-orally the patient was wearing a denture, which replaced 17,16,15,12,22,24, 25,26,27. So considering the above a replacement denture was planned which included the missing teeth along with additional cheek support.

Key Words : Prosthesis, Cheek Support

* Lecturer, ** Interns, Department of Prosthodontics, Goa Dental College and Hospital, Bambolim, Goa.

PROCEDURE

An alginate impression was made of the upper and lower arches and poured with dental stone (type III). A temporary denture base was fabricated on the stone cast using autopolymerising resin following which jaw relations were registered and teeth were set.

Then rubber base putty impression material was mixed and placed on the buccal aspect of the temporary acrylic denture base and cheek support was prepared by properly moulding the cheek and lip while speech and esthetic changes were evaluated.

When the desired contours were achieved the temporary acrylic denture base along with the cheek pads was invested. The rubber base impression material cheek pads were then removed. In the negative replica, wax was flown in the space created to form a trough and then the other half of the flask was invested, following which acrylisation was carried out in the regular manner (Fig. 2). Thereafter, the hollow trough was filled with pumice and covered with a wax lid, which was then invested and acrylised.

The lid obtained was sealed to the mouth of the hollow trough using autopolymerising resin so as to attain a hollow bulb cheek pad to provide cheek support. The entire assembly was then polished and delivered to the patient (Fig. 3). The patient was satisfied with the result (Fig. 4).

He was then referred to a speech therapist for speech evaluation and therapy. The patient is on a regular recall program and has no difficulty in speech and mastication.

DISCUSSION

Normally lip and cheek support prosthesis are given following surgical procedures and unilateral facial nerve paralysis. In this case the patient had no facial nerve paralysis, nor had he undergone any surgical procedure. He had psychological depression due to the sunken appearance of his cheeks in spite of using a regular removable partial denture.

Lazzari (1955) has described the fabrication of a maxillary removable partial denture for a patient with unilateral facial paralysis. His design included an open loop of 8 gauge half round wire attached in the area of the first bicuspid. The wire loop was adjusted to protrude from the commissure of the mouth and was used as a hook to elevate and support the upper lip and the corner of the mouth.

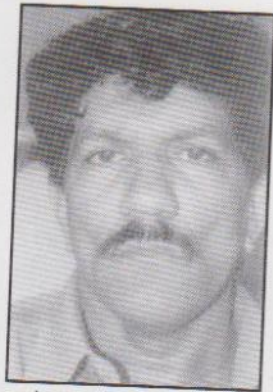


Fig. 1 : Shows sunken appearance of the patient's cheeks inspite of wearing his removable partial denture.

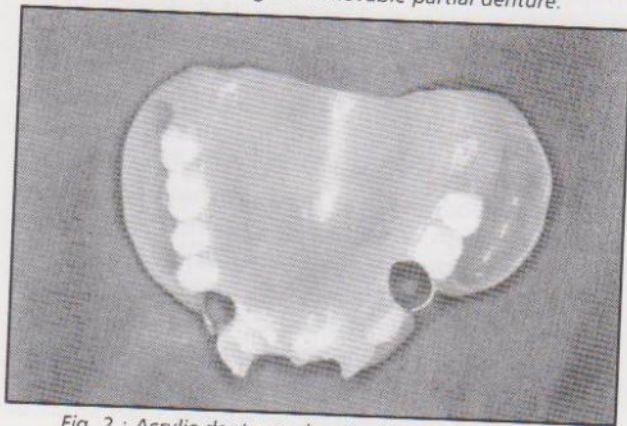


Fig. 2 : Acrylic dentures showing hollow cheek pad.

After the partial denture framework was adjusted, the loop was covered with baseplate wax and modifications were made in the wax to develop the desired support for the corner of the mouth. When adjustments were completed, the wax was replaced with clear acrylic resin. Larsen et al (1976) suggested that although the loop described by Lazzari straightened the lip line, it did not improve the facial sag and drooling. He thought the loop was unaesthetic and resulted in distortion of bilabial (P & B) and labiodental (F & V) speech phonemes. He advocated fabricating a maxillary removable partial denture framework with a retentive meshwork in the bicuspid area.

Modelling plastic was added gradually to the retentive meshwork to evaluate the vestibular fornix and cheek while speech and esthetic changes were evaluated. When the desired contours were achieved, autopolymerising acrylic resin was substituted for the modelling plastic.

In the present case although the patient had a regular removable partial denture, the lip and cheek support was not adequate. So hollow bulb cheek support prosthesis was designed and fabricated so as to reduce the weight of the removable partial denture. All the previous appliances for the cheek support that

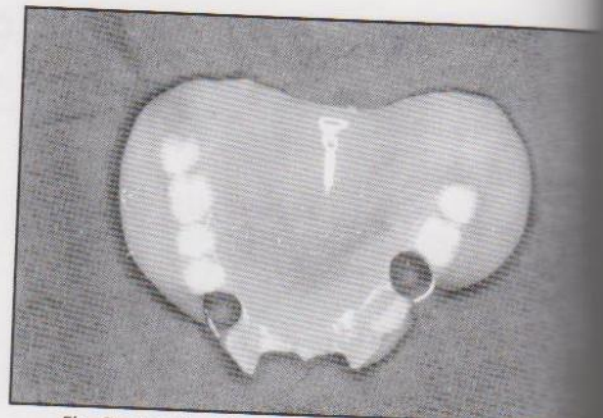


Fig. 3 : Acrylised denture showing closed cheek pad.

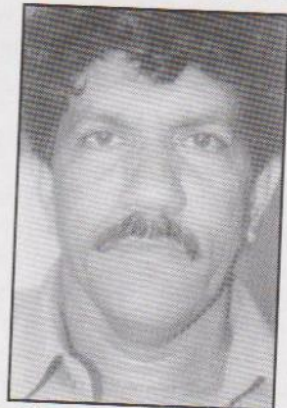


Fig. 4 : Patient with cheek support prosthesis in his mouth.

were provided were made of solid acrylic which would contribute to an increased weight of the prosthesis.

Initially it was noticed that there was difficulty in articulation of speech sounds. This was later corrected with regular speech therapy. With the new prosthesis the psychological behaviour of the patient improved drastically.

CONCLUSION

This innovative prosthetic aid can contribute to the overall well being of the patient. In this case an attempt has been made to give not only function and esthetics but also to improve the psychological profile of the patient and the results have been encouraging.

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A method of incorporating features of existing fixed partial denture in immediate dentures

SUMA, M.D.S.*, K. CHANDRASEKHARAN NAIR, M.D.S.**

ABSTRACT

Transition from dentulous to edentulous state is traumatic and hence an immediate denture is provided. Fabricating immediate dentures to replace natural teeth is an established technique. Incorporating features of restored dentition requires special skills. A case is reported where fixed partial denture features were incorporated in an immediate denture.

INTRODUCTION

Transition from dentulous to edentulous state is traumatic and hence an immediate denture is provided. Fabricating immediate dentures to replace natural teeth is an established technique. Careful planning of the treatment is necessary to make the transition least traumatic both physiologically and psychologically. Immediate dentures prevent patient embarrassment, promote patient health, provide guide for optimal aesthetics, form, size, color and arrangement, provide guide for occlusal vertical dimension, promote better healing by acting as surgical stents, protects blood clots, promote better ridge form and prevent collapse of facial musculature².

Making of immediate dentures involves complex clinical procedures and provides limited scope for evaluation of trial dentures². Present day patients do not reach the state of complete edentulism directly. They undergo a course of varied dental restorative procedures and reach the state of complete edentulism after passing through a series of transitional stages. Hence immediate dentures are fabricated in the place of restored teeth. Most of the patients would like to have features of the restored dental arches in the complete dentures rather than that of the natural dentition.

A case is reported wherein features of the existing fixed partial denture was incorporated in the immediate denture.

CASE REPORT

A 35 year old male patient reported with maxillary fixed partial denture connecting 11, 12, 13, 14, 15, 16, 17, 18, 21, and 22. The abutments were 18, 13,

Key Words : Immediate denture, fixed partial denture

Lecturer, ** Professor, M. R. Ambedkar Dental College and Hospital, No. 1/36, Cline Road, Cooke Town, Bangalore - 560 005.

12, 22, 23 and 27 and were periodontally compromised. Abutments were weakened due to overloading because the number of teeth supported were inadequate. The patient required total dental extractions and a complete denture. An immediate denture was planned. The patient was reluctant to accept an edentulous phase and was insistent on retaining the features of the fixed partial denture in the immediate denture. It was decided to retain the existing occlusal relationship. The patient was a drug addict for five years and had discontinued the practice one year before reporting. Adequate dental history could not be traced because the patient suffered from amnesia in relation to the recent past.

TREATMENT PLAN

- Extraction of 18, 13, 12, 22, 23 initially and 27 at later stage.
- Immediate removable partial denture incorporating the features of the fixed partial denture.

STAGES OF TREATMENT

1. Alginate impressions of upper and lower arches were made.
2. Casts were prepared in dental stone (Fig. 1)
3. Special trays were fabricated with adequate space to accommodate the teeth.
4. Border moulding and final impression were done with silicone putty and regular body. (Fig. 2)
5. Master casts were prepared.
6. Putty index was prepared over the teeth of the maxillary cast. (Fig. 3)
7. Teeth portion in the index was filled with tooth colored autopolymerising resin and it was allowed to cure.

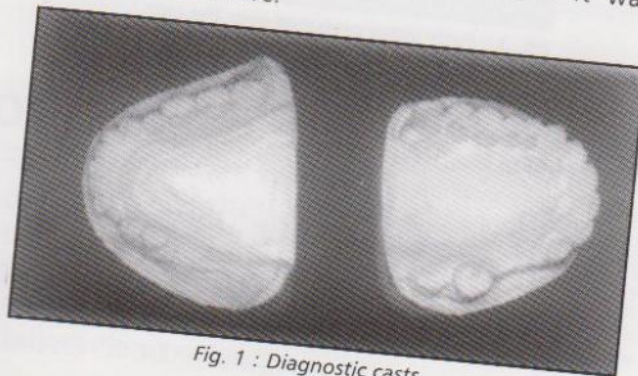


Fig. 1 : Diagnostic casts.



Fig. 2 : Final impression with silicone putty and regular body.

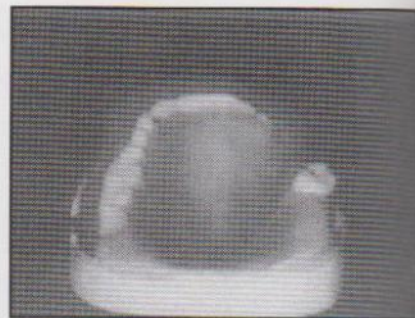


Fig. 4 : Palatal half of the putty index cut to expose the teeth and palatal portion of the denture was waxed up.

8. Palatal half of the putty index was cut to expose the teeth. (Fig. 4)
9. Teeth from the cast were then removed.
10. The index was resealed on the cast and the teeth were positioned.
11. Palatal portion of the denture was waxed up first. The labial portion was waxed up after removal of the index. (Fig. 4)
12. The denture was then processed with heat cure resin.
13. Denture was inserted after extraction of the abutments. (Fig. 5)
14. Occlusal adjustment and polishing of dentures were done.
15. Patient was recalled and post operative period was uneventful. (Fig. 6)

By following this method, the features of the existing fixed partial denture could be incorporated in the immediate denture. The results were satisfying.

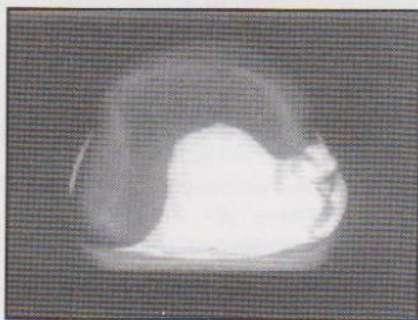


Fig. 3 : Putty index prepared over the cast.



Fig. 5 : Denture insertion after extraction of the abutments.



Fig. 5 : Pre-operative & post-operative front view of the patient.

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NOTE

The article "Obstructive Sleep Apnea (OSA) - A Review" published in the Journal of Indian Prosthodontic Society Vol. 2 No. 3 Oct 2002 Pg 33 had the following author printed - Dr. Vidyashree.

Kindly note the correction in the authors as follows :
Dr. Vidyashree, Dr. K. Chandrasekharan Nair.

Role of Orthopantomography in Diagnosis and Treatment of Edentulous Patients - A Survey

DEEPA GARHIA, M.D.S.*, A.N. PATEL, M.D.S.***, RITA JAIN, M.D.S.***

ABSTRACT

The purpose of this study to demonstrate and emphasize the need for a radiographic examination of edentulous patients before making complete denture. This study assessed the significance of radiographic findings in clinically edentulous jaws and adjacent tissue using orthopantomography.

A survey on 100 edentulous patients was carried out using orthopantomography with emphasis on the incidence of six entities. These six entities were root fragments, retained teeth, radiolucencies, radiopacities, foreign bodies, mental foramina at or near the crest of the mandibular residual alveolar ridge.

Of the 100 orthopantomograms examined, 74 were free of positive findings and 26 showed one or more positive findings. These findings confirmed with those found in the literature.

INTRODUCTION

Complete denture roentgenographic examination should be an integral part of diagnosis and treatment planning in full denture construction. Several radiographic surveys of edentulous mouth have been reported. Most of the methods employed have involved the use of multiple periapical or occlusal films. Nowadays panoramic radiography is commonly used in large institutional practice as the sole method of screening edentulous patients¹. The studies conducted using panoramic radiography have reported positive findings as high² as 61% and as low³ as 12%. The main reason for growing popularity of pantomography is that it provides a radiograph of the entire maxilla and mandible in a single film⁴, it is a time saving, extraoral procedure and radiation dose is smaller than when only periapical films are used. In conjunction with the periapical radiograph, it is a valuable adjunct in dental therapy⁶.

The Purpose of this article was :-

1. To report a panoramic radiographic study of edentulous patients with emphasis on the incidence of six entities (root fragments, retained teeth, radiolucencies, radiopacities, foreign

bodies and mental foramina at or near the crest of residual alveolar ridge)

2. To compare the finding of present investigation with those found in literature.
3. To discuss the importance of those entities and their resultant effect on dental treatment.

MATERIALS AND METHOD

In order to determine the condition existing in the mouth of edentulous patients coming to the Department of Prosthodontics, Government Dental College and Hospital, Ahmedabad, a screening radiographic survey was carried out.

Of the patients presenting at the Prosthodontics department for complete denture treatment, 100 patients were selected at random over a period of one month. The only factor common to the subjects was the need for full denture and freedom from any signs and symptoms which might suggest a pathological condition.

The panoramic radiographs were taken on 'ONDONTOROMA' model PC100, Orthopantomographic unit manufactured by 'TROPHYRADIOLOGIE' of France at Radiology Department of the College, operating at an average of 75KVP, 10mA with 16 seconds exposure. The films used were (KODAK-T-MAT 6" x 6"). The orthol pantomograms were supplemented by periapical films wherever greater details of the region was required. All orthopantomograms were developed using standard technique. For detailed study of radiographs a good x-ray viewer and magnifying glass were used.

Each radiograph was discussed with radiologist and recorded only if found to be in agreement. Since detail clinical histories were not available with all the films, diagnosis was based entirely on radiographic evidence.

RESULTS AND OBSERVATIONS

Of the 100 orthopantomograms examined, 74 were free of positive findings (Table 1). Fifteen patients had one or more root fragments remaining. Maximum number of root pieces were found in upper posterior region. Six patients had unerupted teeth. They were all third molars.

The radiographic films of four patients demonstrated radio-opacities and film of one patient demonstrated radiolucency.

Key Words : Kevlar fibers, reinforced acrylic resin

*Demonstrator, **Prof. & Head, ***Lecturer, G.D.C., Rohtak Deptt. of Prosthodontics, Ahmedabad.

No film demonstrated any foreign body like amalgam particles. Six patients had one (one patient) or both (five patients) mental foramina at or near the crest of residual ridge. (Table 1)

TABLE 1

Number and percent of radiographic entities

Radiographic entities	% of patients entities	% of radiographic entities
1. Root fragments	15	57.69
2. Unerupted teeth	6	23.07
3. Radiopacities	4	15.38
4. Radiolucency	1	3.80
5. Foreign body	-	-
Total	26	

DISCUSSION

Various radiographic studies have been made of edentulous and partially edentulous patients since the first reported study by Logon⁷ and Eustermann⁵ in 1921. In their study Scandrett¹ et al compared the three techniques most commonly used and found that periapical surveys revealed more residual pathosis than panoramic radiograph or occlusal films. Alatter et al⁸ compared the diagnostic value of three types of panoramic radiographs : Panorex, Orthopantomogram, and Panelipse. They concluded

that orthopantomogram was slightly more reliable.

Table 2 lists the result of this study and compares it with nine similar studies that used panoramic radiographs. The radiographic entities disclosed in this study are consistent in total number of positive findings with previous reported studies. The percent of patients with positive findings points out the value of panoramic radiographic examination supplemented by periapical radiographs and suggests the need for radiographic examination of all the patients.

In accordance with the former studies, retained root fragments were most commonly observed in the maxillary molar and premolar regions. In this survey seven of the edentulous patients had retained teeth. As in previous surveys the teeth most commonly found were the molars.

Whether retained root fragments, teeth, or foreign body should be surgically removed is debatable.

Because of difficulties in differential radiographic interpretation radiolucencies or radio-opacities should be further evaluated clinically and radiographically. According to Michaeli et al⁹ radiopaque areas generally do not require surgical intervention, whereas radiolucent areas are more suspicious.

The relationships of the mental nerve, a branch of the mandibular nerve, and the mental foramen to the crest of the ridge is important. The present finding (6%) is consistent with the finding of Baredalay and Donaldson¹⁰ who reported foramina on the crest of the ridge in 7% of their patients.

TABLE 2

Comparison of Parent Study with other Panoramic Radiographic Studies in completely Edentulous Patients

Authors	No. of Subjects	Percentage of subjects with Positive findings	Categories in common to all study (% of radiographic entities)				
			Root tip (%)	Unerupted teeth (%)	Foreign bodies (%)	Radio-opacity (%)	Radiolucency (%)
Perrelet et al ¹¹ (1977)	287	41	39	15	6	25	15
Spyropoulos et al ¹² (1981)	368	37	64	19	2	3	11
Jones et al ¹³ (1985)	114	34	36	3	26	31	5
Keur et al ¹² (1987)	1135	61	77	8	3	12	2
Axelsson ¹⁴ (1988)	225	22	55	19	2	13	10
Dias and Jiffry ¹⁵ (1988)	488	20	49	9	7	24	11
Edgerton and Clark ¹⁶ (1991)	308	23	25	10	NA *	56	9
Seals et al ³ (1992)	448	12	10	29	33	29	NA
Soikkonen et al ¹⁷ (1994)	124	29	35	13	NA	40	13
Present Study (2000)	100	26	57.6	23.07	NA	15.38	3.8



Fig. 1 : An orthopantomogram showing a root peice in the left maxillary posterior region.



Fig. 2 : An orthopantomogram showing impacted teeth.



Fig. 3 : An orthopantomogram showing an abnormal radiolucent radio-opacity.



Fig. 4 : An orthopantomogram showing an abnormal radio-opacity.



Fig. 5 : An orthopantomogram showing level of mental foramen close to the ridge crest.

In the fabrication of complete denture when the mental foramen is at or near the crest of the residual ridge, the following alternatives may be performed.

First, a selective pressure technique can be used. Secondly, the complete denture should be relieved in this region. Finally, if necessary, preprosthetic surgery could be done to increase the opening of the mental foramen downwards towards the inferior border of the mandible which will permit the lower level of exit for the nerve.

For patients with positive radiographic findings and for whom surgery is not performed, three steps are recommended. First, the patient should be informed of possible surgical and prosthetic procedures that may be necessary. Secondly, the patient's record should indicate the mutual decision made by the patient and dentist and that the patient is informed of possible consequences.

Finally, the patient should be advised to undergo a follow-up examination at regular intervals.

Radiological Consideration :- As stated by

N.C.R.P. (National Council of Radiation Protection) radiation exposure should be well within the acceptable limit which is calculated by estimating radiation risk vs. patients's benefit and termed as MPD (Maximum Permissible Dose).

TABLE 3

shows the value of MPD and radiation exposure with the single panoramic film operated at 80kvp and 7mA for 15sec.

Organ	MPD Value	Radiation Exposure Per OPG
Skin	57.7r	15.20r
Lens of eyes	0.96mr	5mr
Thyroid gland	38.5mr	5mr
Gonadal dose	09.6mr	0.5mr

It is evident from this table that the radiation exposure with orthopantomograph is well with in the acceptable limits¹⁸.

CONCLUSION

A sample consisting of 100 edentulous patients with clinically healthy denture bearing area were examined radiographically using Orthopantomographs. Six radiographic entities were identified:

1) root fragments 2) retained teeth 3) radiolucencies 4) radiopacities 5) foreign bodies 6) mental foramen at or near the crest of the residual ridge.

The result of this and the previous studies demonstrated:-

1) the diagnostic yield of radiographic examination of a seemingly healthy jaw is high.

2) the necessity of routine radiographic examination of the jaws of every patient before construction of complete denture.

3) the high incidence of positive findings suggest not only the need for radiographic examination of all patients, but also the frequency with which the dentist is faced with the necessity of modifying the treatment plan.

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Prosthodontic Rehabilitation of Hemimaxillectomy – A Case Report

SUNIL DHADED, M.D.S.*, SUPRIYA MANVI, M.D.S.*, GANGADHAR S.A. M.D.S.**, PAWAR S.Y. M.D.S.***

ABSTRACT

The research on cancer has made understanding and treatment for this dreadful disease a possibility. Still the rehabilitation of these patients is a daunting job and is more so in post surgical cases. Palatal defects that are treated prosthodontically seal congenital or acquired tissue openings of the palate or contiguous structures. Obturators close or seal these defects, allowing for restoration of esthetics and function such as mastication, deglutition and speech. These prostheses vary in size and shape depending on the extent of the defect and should be lightweight, provide retention, stability and patient comfort. Hence hollow obturators will fulfill these requirements. Prosthetic rehabilitation not only restores esthetics & function but also boosts the moral of these patients.

INTRODUCTION

Palatal defects that are treated prosthodontically seal congenital or acquired tissue openings of the palate and contiguous structures.

Obturators close or seal these defects, allowing for restoration of esthetics and function for mastication, deglutition and speech.

These prostheses vary in size and shape depending on the extent of the defect and should be easy to fabricate, lightweight, provide retention, stability and patient comfort³.

A male patient aged 58 years reported to the K.L.E's Institute of Dental Science's, Belgaum, with the chief complaint of nasal reflow of fluids, aesthetic disharmony and difficulty in speaking, following the hemimaxillectomy six months back. The lips and the ala of the nose were stretched upwards to the right side owing to scar mark following surgery. (Fig. 1)

Intra-oral examination revealed the defect present on the right side involving the palatal vault and extending posteriorly to the soft palate [Class II maxillary defect]⁴. The approximate dimensions of the defect was 3.5cm (width) x 3cm (length), with acceptable healing (Fig. 2). Maxillary left canine, premolars and third molar were present. Maxillary left third molar was extracted because of its poor

periodontal health. Remaining teeth were modified after endodontic treatment for the coping cementation, thus enhancing the support and retention.

A maxillary tooth supported complete denture with a hollow bulb obturator opposing a mandibular removable partial denture was planned for the treatment.



Fig. 1 : Extra oral photograph showing patient before obturator construction.



Fig. 2 : Intraoral photograph showing the surgical defect in the right side of the palate.

Key Words : Hollow Obturator

*Assistant Professor, **Professor, ***Professor & Head, Department of Prosthodontics, K.L.E's Institute of Dental Science's, Belgaum, Karnataka, India.

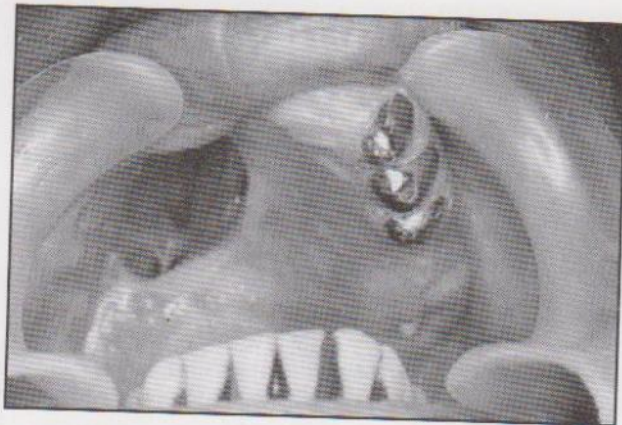


Fig. 3 : Photograph showing the prepared abutment teeth, cemented with copings.



Fig. 4 : Waxed up obturator invested in the flask.

PROCEDURE

Preliminary impressions were made in irreversible hydrocolloid impression material with stock trays and study casts were obtained. All undercuts were blocked with wax. A special tray of uniform thickness was fabricated with self-cured acrylic resin material. Borders were molded with low fusing compound and special care was taken at the defect area for better adaptation and retention. Final impressions were made with Poly Vinyl Silixone [light body] rubber base impression material and were poured in dental stone. The defect was covered with modeling wax to block the undercut areas. Autopolymerised acrylic resin record bases and wax occlusal rims were made.^{3,5}

The maxillomandibular relations were recorded, teeth were arranged in wax and verified clinically. Waxed and finished trial denture was sealed to the cast. The wax lid was made that would cover the defect area leaving a hollow bulb. Beveling was done on lid wax (defect side) to facilitate seating the assembly. These were invested and processed with heat cured acrylic resin separately. The main prosthesis that covers the maxilla with the defect and the lid that would cover the hollow part of the obturator. The lid was joined with autopolymerising resin to the main prosthesis. The finished obturator was inserted to an accurate fit into the patient's mouth.^{1,2,5} (Fig. 4,5,7,8).

DISCUSSION

After examination and assessing the problems encountered due to surgical resection of the right maxilla, the hollow bulb obturator was planned. Hollow obturators are particularly useful where large maxillary defects are to be obturated, its relatively lightweight aids in retention and comfort. (Fig. 6)

The hollow bulb aids in resonance of sound with consequent improvement in quality of speech.

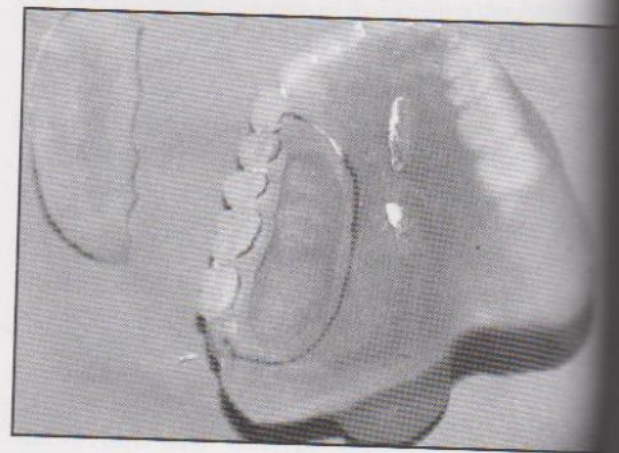


Fig. 5 : Processed obturator [with lid and maxillary denture]

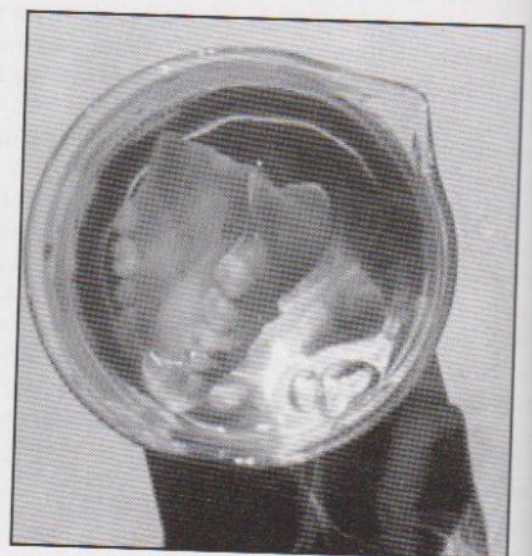


Fig. 6 : Finished and polished hollow obturator.