PROSTHETIC PROGRESS

An official publication of IPS UP State Branch

Volume – 1, Issue - 1 **Prosthetic Progress 2018-19**

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"I am very happy to note that the Uttar Pradesh state branch of the Indian Prosthodontic Society is coming out with an e-journal for the benefit of the members. This branch was one of the earliest branches to be formed and this will add a feather in the hat of achievements of the branch. I congratulate the office bearers, especially the editorial team, & all the members for this very useful initiative & hope it will serve to be a hub of information in our specialty for a long time."

Dr. Pooran Chand

Secretary-Cum-Treasurer, IPS - UP

"I would like to convey my heartfelt wishes and blessings to the organising team of Indian Prosthodontic Society Uttar Pradesh state branch conference. The conference theme has been aptly chosen as "Integrate to Rehabilitate" which will invoke a high spirit of knowledge to delegates and participants alike. This event will serve as a platform for the budding prosthodontists to interact with the stalwarts of the field. The scientific sessions have been meticulously planned so that they induce a sense of knowledge seeking for the aspiring students. Once again i wish the organising team for the grand success of the event."

Dr. Samarth Agarwal

President, IPS - UP

"It is a matter of great pleasure and responsibility to release first issue of Prosthetic Practices which is an Uttar Pradesh State Journal of Indian Prosthodontic Society. Target of this journal is to inform best available evidence to all the reader. This journal welcomes articles related to all field of Prosthodontics including Dental materials, Maxillofacial, Implant, Removable Prosthodontics, Geriatric dentistry etc. This is a peer reviewed journal. We are also thankful to our editorial board member and reviewers for their contribution."

Dr.Balendra Pratap Singh

EDITOR

MANUSCRIPT TYPE - Original Article

COMPARATIVE STUDY ON THE EFFECT OF ALUMINIUM OXIDE AND GLASS FIBRE ADDITION ON THE SURFACE HARDNESS AND ROUGHNESS OF HEAT CURED PMMA RESIN

PayalKashyap , Rajeev Gupta , ArchanaNagpal , HimanshuKapoor, Pragya Bali, Rohit Saini[1]
Department of Prosthodontics, Himachal Dental College, Sundernagar, Himachal Pradesh, India[1]

ABSTRACT

Statement of the problem: Polymethyl methacrylate acrylic resin has been the most popular and widely used denture base material for more than 60 years; however it does not perform ideally. Many attempts have been made to enhance the strength of acrylic denture bases by incorporating various materials to improve its mechanical and physical properties.

Purpose : The aim of the present study was to evaluate and compare the surface hardness and surface roughness of Aluminium Oxide and Glass Fibre incorporated heat cured PMMA resin.

Material and Method: Total 120 specimens were made. Group A^0 B^0 C^0 D^0 of every group acted as control Group A^1 and B^1 contained 2.5% Al_2O_3 C^1 and D^1 were incorporated with 2.5% GF. Group A^2 and B^2 were incorporated with 5% Al_2O_3 , C^2 and D^2 with 5% GF. After finishing and polishing, conditioning of the specimens was done in water at 37^0 C for 7 days. Then the Surface Hardness test was carried out using Vickers Hardness testing machine on group A and C whereas Surface Roughness test using a Profilometer was carried out on Group B and D.

Results : It was concluded that for Surface Hardness (SH) of the samples were in $C^2 > C^1 > A^2 > A^1$ order and the Surface Roughness (SR) were in the order $B^2 > B^1 > D^2 > D^1$.

Conclusion : Surface hardness increases as the concentration of the filler increases as seen both in the case of $Al_2O_3$and GF and the surface roughness increases as the concentration of the Al_2O_3filler material increases but the surface roughness was nearly the same as the control group in case of 2.5% GF group but when the concentration of the filler material was increased to 5% there was an appreciable increase in the surface roughness of the samples.

KEYWORDS

Denture Bases, Polymethyl Methacrylate, fiberglass, Hardness Tests, Water, Hot Temperature, Control Groups, Glass, Acrylic Resins, Hardness, Dental Materials,Aluminum Oxide

Address for correspondence: Dr.PayalKashyap, Department of Prosthodontics, Himachal Dental College, Sundernagar, Himachal Pradesh -175002, India. E-mail: payalkashyap.shimla@gmail.com
Received: 25th april 2018, Revision: 27th September 2018, Accepted: 20th April 2019, Publication: 20th June, 2019

INTRODUCTION

Dentures are commonly used to replace missing teeth and the denture base must be strong enough to allow the prosthesis to withstand against functional, parafunctional, masticatory forces and shock induced fracture possibly due to patient abuse. Polymethyl methacrylate acrylic resin has been the most popular and widely used denture base material for more than 60 years; however it does not perform ideally. In the past few years, Polymethylmethacrylate (PMMA) polymerization techniques have been modified not only to improve PMMA's physical and mechanical properties but also to improve its working properties that facilitate laboratory processing techniques.[1]Since its introduction in Dentistry, it has been successfully used for denture base because of its ease of processing, low cost, light weight and colour matching ability[2,3]; however, acrylic resin denture base materials are low in strength, brittle and low in thermal conductivity.[4] Many attempts have been made to enhance the strength of acrylic denture bases including the addition of metal wire mesh and cast metal plates.[2,3] Mechanical reinforcement of acrylics has also been attempted through the inclusion of fibres.[2] Alternative techniques that improve the mechanical and surface properties of the acrylic resins include the addition of GF to the acrylic resin material.[5] The incorporation of Aluminium oxide in various dental materials has been studied and found to be biocompatible. Its high hardness, excellent dielectric properties, refractoriness and good thermal properties make it the material of choice for a wide range of applications[6] and it also improves mechanical properties. Although several studies have investigated the effects of the addition of GFs and Aluminium oxide to PMMA denture bases on their strength and fracture resistance, the effects of GFs' and Aluminium oxide addition on PMMA's surface properties have not been well evaluated.[1]Therefore in this study we will evaluate the effect of Aluminium oxide (Al_2O_3) and Glass fibre (GF) in different concentrations on the surface roughness and hardness of the conventional heat cured acrylic resins.

MATERIAL AND METHOD

In this present study 120 specimens were prepared from heat cure acrylic resin (DPI-Dental product of India, Mumbai). These were divided as shown in the Table 1.

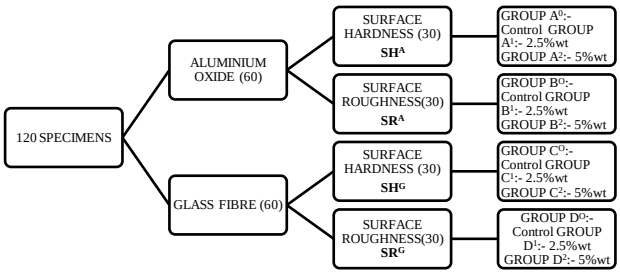

Table 1. Distribution of samples according to test and concentration of filler material

PREPERATION OF MOULD

For prepration of acrylic resin specimens, two different stainless steel metal patterns were constructed using Turning machine as shown in Figure 1.

Figure 1. Stainless Steel Master Die

- Surface roughness test with dimensions of (80mm*10mm*2.5mm)
- Surface hardness test with dimensions of

(60mm*10mm*2.5mm)

Length, width and thickness respectively (ADA No. 12.1999)

Flasking technique was used during the mould preparation. Type III dental stone was used for this purpose.

PREPARATION OF PMMA RESIN SPECIMENS

DPI(Dental product of Indian, Mumbai) was used as the resin matrix material. The stone mould prepared were coated with cold mould seal as the separating medium prior to packing. The control group of every sub group received no concentration of filler material.

PREPARATION OF SPECIMENS WITH 2.5g% AND 5g% BY WEIGHT Al_2O_3

For these subgroups Al_2O_3 (Bangalore fine chemicals, India) were reinforced in the group A^1, B^1 for 2.5g% and A^2 and B^2 for 5g%. For each group mixing of the polymer and Al_2O_3 was done by mortar and pestle until a homogenous colour was attained within approximately 5 minutes as shown in Figure 2. A total weight of 100gms was used in this study (the weight ratio is given in Table 2). Therefore, the liquid monomer of 40ml was then added to obtain a homogenous mixture. The samples were then flasked and cured using short curing cycle.The samples were then conditioned at 37^o c for 7 days prior to testing.

Figure 2. Homogeneous mixing of PMMA with filler material

Table 2.Ratio of filler material by weight for respective test groups

Surface Roughness (Al_2O_3)	Surface Hardness (Al_2O_3)	Surface Roughness (GF)	Surface Hardness (GF)	Amount of Polymer	Amount of Filler
A^0	B^0	C^0	D^0	100g	--
A^1	B^1	C^1	D^1	97.5g	2.5g
A^2	B^2	C^2	D^2	95g	5g

PREPARATION OF SPECIMENS WITH 2.5% AND 5% BY WEIGHT GF

For these subgroups 3mm chopped GF (P.K glass fibre, Delhi, India) were used. The pre- weighed GF were treated with Silane coupling agent (3-trimethoxysilyl propyl methacrylate 98%)(Klorofil chemicals, Chandigarh, India) by an average of 1.5ml of Silane coupling agent for each 1g of glass Fibres for 1 minute at room temperature, followed by being dried at 60^{o}c for 24 hours. This pre-weight treated GF were then incorporated into polymer in a plastic beaker using a mixer for 1 minute to attain uniform mix. The ratio of GF incorporated in polymer is given in Table 2, which was further mixed with 40 ml of liquid monomer to form a homogenous dough. This modified resin was then packed and samples were prepared that were conditioned at 37^{o}c for 7 days in water before testing. As shown in Figure 3.

Figure 3.Samples kept for conditioning in water

SURFACE HARDNESS TESTING

Microhardness measurements were obtained by using digital Vickers Hardness Testing Machine (Tinius Olsen FH2 model, India). A load of 30g for 30 seconds to specimens was applied. Each specimen was subjected to three indentations; one at the centre and two at the border and the average

value was calculated for each group. The contact surface of the digital micro hardness was kept parallel to the specimen's support of the stand to prevent error in the measurements. The distance between the specimens surface and indenter was set to be 5-12 mm during carrying out the test. After the indentation was made the samples were placed under the camera and lens were arranged to get the image clearly at its focal length. The indentation was focused and the measuring lines were made to interact at two diagonally opposite corners and reading was made.

SURFACE ROUGHNESS TESTING

SR of the acrylic specimens were measured using a Profilometer (Model: Dektak 150, Manufacturer: Veeco). The prepared samples were mounted on top of the stage. The profilometer needle was moved across the sample surface three times in three directions for a distance of 1.7mm. According to the apparatus design the data was collected and obtained from the screen part of the Profilometer. Three readings were made for each specimen, and the mean value was calculated.

STATISTICAL ANALYSIS

Descriptive statistics were carried out for each of the two tests. One way analysis of varience (ANOVA) was used to determine inter-group differences. Post-hoc Tukey`s test was used to assess if the means significantly differed from those of the control group. Data was analysed to a significance level of 0.05.

RESULTS

One way analysis of variance showed a significant difference between mean values within group A samples ($p< 0.05$). Statistical analysis using the Post-hoc Tukey's honest significant differences test revealed that Vickers Hardness is significant on the addition of 2.5% Al_2O_3 as compared to the control group (P=0.000) and significant difference was seen with 5% Al_2O_3 group and the control group (P=0.000) and on comparing the 2.5% group and 5% group there was a significant difference (P=0.000). So it can be concluded that within the group A, 5% reinforced has the maximum surface hardness followed by 2.5% Al_2O_3 reinforced group and then the control group.

Table 3. Intra-Group Comparison of Surface Hardness (MPa) among Aluminium oxide and Glass fiber groups

SUBGROUPS		Mean Difference	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
A^0	A^1	-2.08000*	.10912	.000	-2.3506	-1.8094
	A^2	-3.41800*	.10912	.000	-3.6886	-3.1474
A^1	A^0	2.08000*	.10912	.000	1.8094	2.3506
	A^2	-1.33800*	.10912	.000	-1.6086	-1.0674
A^2	A^0	3.41800*	.10912	.000	3.1474	3.6886
	A^1	1.33800*	.10912	.000	1.0674	1.6086
C^0	C^1	-4.99700*	.37535	.000	-5.9276	-4.0664
	C^2	-8.35100*	.37535	.000	-9.2816	-7.4204
C^1	C^0	4.99700*	.37535	.000	4.0664	5.9276
	C^2	-3.35400*	.37535	.000	-4.2846	-2.4234
C^2	C^0	8.35100*	.37535	.000	7.4204	9.2816
	C^1	3.35400*	.37535	.000	2.4234	4.2846

*. The mean difference is significant at the level of 0.05

One way analysis of variance showed a significant difference between mean values within group C samples ($p< 0.05$). Statistical analysis using the Post-hoc Tukey's honest significant differences test revealed that Vickers Harddness is significant on the addition of 2.5% GF as compared to the control group (P=0.000) and significant difference was seen with 5% GF group and the control group (P=0.000) and on comparing the 2.5% group and 5% group there was a significant difference (P=0.000). So it can be concluded that within the group A, 5% reinforced has the maximum surface hardness followed by 2.5% GF reinforced group and then the control group.

Table 4: Intra-Group Comparisons of Surface

Roughness (µm) among Aluminium oxide and Glass fibre groups

SUBGROUPS		Mean Difference	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
B^0	B^1	-.19900*	.01023	.000	-.2244	-.1736
	B^2	-.25400*	.01023	.000	-.2794	-.2286
B^1	B^0	.19900*	.01023	.000	.1736	.2244
	B^2	-.05500*	.01023	.000	-.0804	-.0296
B^2	B^0	.25400*	.01023	.000	.2286	.2794
	B^1	.05500*	.01023	.000	.0296	.0804
D^0	D^1	-.02200	.01148	.153	-.0505	.0065
	D^2	-.08100*	.01148	.000	-.1095	-.0525
D^1	D^0	.02200	.01148	.153	-.0065	.0505
	D^2	-.05900*	.01148	.000	-.0875	-.0305
D^2	D^0	.08100*	.01148	.000	.0525	.1095
	D^1	.05900*	.01148	.000	.0305	.0875

*. The mean difference is significant at the level of 0.05

Modified GF group with 2.5% (P=0.000) GF and 5% GF (P=0.000) showed significant increase in Vickers Hardness number as compared to the control group. It can be concluded that as the concentration of GF in acrylic resin increases the surface hardness of the material also increases.

Increased mean surface roughness values were observed after reinforcing acrylic resin with 2.5% and 5% Al_2O_3 powder. One way – analysis using PosthocTukey's honest significant difference test

COMPARISON GROUPS	F	Sig.	df	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						Lower	Upper
B^0 and D^0	.491	.492	18	.1860	.0102	.1646	.2074
B^1 and D^1	.053	.821	18	.1820	.0114	.1580	.2060
B^2 and D^2	.018	.894	18	.0090	.0110	-.0141	.0321

revealed a significant increase with increase in the concentration of Aluminium Oxide (P=0.000). So it can be concluded that the 5% Al_2O_3 has a rougher surface followed by 2.5% Al_2O_3 and then the control group.

5% GF reinforced acrylic resin showed a significant difference in increase in surface roughness as compared to the control group where as the surface roughness was non-significant in 2.5% reinforced GF (P=0.153) compared to the control group. It can be concluded that the surface roughness is highest for 5% GF followed by no difference between 2.5% and control group.

In the intergroup comparison of surface hardness between Al_2O_3 group and GF group as shown in Table 5, there is no statistically significant difference between the control groups but there is a statistical significance between A^1 and C^1 groups and A^2 and C^2 group.

Table 5: Inter-group comparison of Surface Hardness (MPa) between Aluminium oxide and Glass fiber group using t-test

COMPARISON GROUPS	F	Sig.	df	Mean Difference	Std. Error Difference	95% Confidence Interval of theDifference	
						Lower	Upper
A^0 and C^0	2.730	.116	18	-5.713	.1089	-5.942	-5.484
A^1 and C^1	5.995	.025	18	-8.630	.3766	-9.421	-7.839
A^2 and C^2	12.267	.003	18	-10.646	.2747	-11.223	-10.068

In the inter group comparison of surface roughness between Al_2O_3 group and GF group as shown in Table 6, there is no statistically significant between the control groups but shows statistical significance between B^1 and D^1 groups and B^2 and D^2 group.

Table 6: Inter-group comparison of Surface Roughness (µm) between Aluminium oxide and Glass fiber group using t-test

Therefore from the results of this study conducted it was evident that SH of the samples were in the order $C^2>C^1>A^2>A^1$ whereas the SR were in the order $B^2>B^1>D^2>D^1$

DISCUSSION

This study was principally aimed to asess possible improvement in the mechanical properties of PMMA, in particular surface roughness and hardness through incorporating untreated Aluminium Oxide[3,7] and Silane treated chopped glass Fibres.

Surface Hardness

Hardness is the mechanical property of a material that enables the material to resist plastic deformation predominantly by penetration, indentation, scratching, abrasion etc. In other words hardness is the property of a solid material which can be defined as the surface resistance of the material to penetration, wear, and scratching.[8] It is an important mechanical property for any material application in dentistry.[9]

The result of the present study showed that the SH increased in proportion to the weight percentage of the Al_2O_3. The hardness significantly increased after incorporating 2.5% and 5% Al_2O_3.This finding is in agreement with previous investigators.[3,10,11]

This increase in hardness may have been due to inherent characteristics of the Al_2O_3 particles. It possesses strong ionic interatomic bonding, giving rise to its desirable material characteristics, that is, hardness and strength. The most stable hexagonal alpha phase Al_2O_3 is the strongest and stiffest of the Oxide. Therefore, it is expected that when Al_2O_3 particles disperse in a matrix, they increase its hardness and strength as stated by Ellakwaet al[12], Grant et al[6]and Arora[10]. The results obtained are not in agreement of study conducted by Jaber[2]. This could be due to difference in the types of acrylic material and difference in the percentage of Al_2O_3 used; increase percentage may provide resistance to the indenter of the device and increase surface hardness.

Based on the results obtained in this study for GF reinforced groups, there is an increase in the hardness of the heat cured PMMA when glass fibres are added to it.[10]So the present study demonstrates the effect of Silane treated Glass Fibre weight percentage and aspect ratio on the Vickers hardness number of PMMA. Inorganic materials like Glass Fibres have poor compatibility at the fibre-matrix interface. Silane coupling agents can be used to improve the adhesion of these inorganic GF to the polymeric matrix and in addition coupling agent aid in protecting Fibre surface and prevent inhibition of polymerization by the solid surface.[13] The results suggest that there is significant increase in the hardness number when the Fibre weight percentage is more, that may be due to the fact that hardness is a surface mechanical property and the micro hardness tests demonstrates the ability of the material to resist surface plastic deformation in a limited area. The results are in agreement with the studies conducted by Solnit[14], Farina[5], Grant[6] and Mathew[15]. So based on the present study and the previous supporting studies it can be concluded that Fibre reinforcement results in increased hardness which increases as the concentration of the Fibre increase.

Surface Roughess

SR is defined as the shorter frequency of real surfaces relative to the troughs. It is greatly affected by the microscopic asperity of the surface of each part.

Addition of alumina in PMMA does adversely affect surface roughness. It may be attributed to the particle size and dispersion. More particles will be found on the surface of the specimen which lead to increase in SR.[2] The SR of denture material is important because it affects the oral health of tissues in direct contact with the dentures.[10] The SR threshold for acrylic resin is 0.2 microns, below which no significant decrease in bacterial colonization occurs.The surface roughness of polished acrylic resin varies between 0.03 microns and 0.75 microns. However, an important factor in the clinical performance of a material is the way it responds to hygiene procedures. The results of various studies have shown that incorporating Al_2O_3 at different concentrations did not adversely

affect the roughness of the denture base resin.In the present study, Profilometer device was used to estimate the effect of adding Al_2O_3 on surface geometry of the specimens because this device appear to be excellent device to evaluate SR by giving quantitative measurement that can be evaluated and compared statistically. Increased surface roughness has a detrimental effect on the aesthetic of the denture. Also smooth surface of acrylic resin helps resist the buildup of stain, debris and plaque. This study is in favor of Vojdani[3]and Ellakwa`s[4] findings and in disagreement with Jaber[2] who showed non significant difference between 2.5% and 5% group.

GF included PMMA resin had a glossy surface and there was a non significant difference between the reinforced and the control group but GF clusters could be recognized which is in agreement with the study conducted by Lee[16],Gad[1]and Fouda[17].There was no extrusion of glass Fibres out of the resin surface and the Fibres were generally distributed evenly in the resin matrix with little bunching. It was seen that there was a statistically non significant difference between the control group and the 2.5% GF group which can be attributed to the less quantity of filler material. 5% GF reinforced acrylic resin showed a significant difference in increase in SR as compared to the control group. Extrusion of glass Fibre were visible in these samples.

CONCLUSION

Despite the lack of sufficient scientific evidence in terms of SH and SR of filler infused heat cured PMMA for the purpose of comparison, the present study concludes that within the limitations of this in-vitro study:

1. SH increases as the concentration of the filler increases as seen both in the case of Al_2O_3 and GF.

2. SR increases as the concentration of the Al_2O_3 filler material increases, but the SR was nearly the same as the control group in case of 2.5% GF group. However, when the concentration of the filler material was increased to 5% there was an appreciable increase in the SR of the samples.

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Manuscript Type: Case Report

SINGLE MAXILLARY COMPLETE DENTURE OPPOSING NATURAL DENTITION-COUNTERING DENTURE FRACTURE WITH METAL DENTURES: A CASE REPORT

Sakshi ChopraAgarwal[1], AmritTandan[2], PranjaliDutt[1]

Department Of Prosthodontics, KGMU, Lucknow[1], Professor and Head, Department of Prosthodontics, BBDCODS, Lucknow[2]

ABSTRACT

Single complete dentures often fracture during normal mastication. However, an edentulous patient exerts occlusal forces 15 to 25% of that of dentate patients.[1] Hence, theoretically an edentulous patient cannot fracture a denture base that possessing a tensile strength of 7000 to 9000 psi, a compressive strength of 11,000 psi, and an elastic modulus of 550,000 psi. In this article we have described the use of a metal denture base for countering the problem of repeated fracture of a single complete denture.

KEYWORDS:

Metal denture base, single complete denture, denture fracture.

Address for correspondence: Dr.Sakshi Chopra Agarwal, Department Of Prosthodontics, King George Medical UniversityLucknow-226003, India. E-mail: sakshi.india@gmail.com
Received: 19th March, 2019, Revision: 1st April 2019, Accepted: 20th May ,2019, Publication: 23rd June, 2019

INTRODUCTION

The most commonly used material for the fabrication of dentures is the acrylic resin [poly methyl methacrylate (PMMA)]. The material is mainly popular due to its good esthetic properties defying its detection in the mouth.[2]

However there is an unresolved problem with respect to PMMA that demands a stronger material that can be used in reduced bulk. The acrylic resin is prone to fracture under flexural fatigue and impact forces that limit its use in cases of high occlusal forces.[3]

Flexural fatigue occurs due to repeated flexing of a acrylic whereby it eventually fails after being repeatedly subjected to multiple small loads. There is development of microscopic cracks in areas of stress concentration. With continued loading, these cracks fuse to a fissure weakening the material. Fracture results from a final loading cycle that exceeds the loading capacity of the remaining material.[4] In a study conducted by El- Sheikh the most frequent type of damage in partial and complete denture patients was the breakdown of the acrylic base (71.4%).

Occlusal problems and fracture of a maxillary denture base opposing natural dentition results from increased occlusal stress on the maxillary denture from the remaining teeth and musculature accustomed to opposing natural dentition.[5]

Robert L. Schneider described several causes of maxillary and mandibular complete denture fracture and ways to prevent their recurrence.[6] Hence In complete dentures opposing natural dentition, it is recommended to use a metal base or a high-impact acrylic resin denture base to prevent fracture.

CASE REPORT

A 62 year-old male patient came to the Department of Prosthodontics, BBDCODS, Lucknow with the chief complaint of repeated fracture of his upper complete denture. On examination he had retained natural dentition in his lower jaw and maxillary complete denture since past 20 years. The complete denture showed a midline fracture running antero-posteriorly. He reported that this was his third denture, which had fractured in the past 20 years apart from few incidences of repair of his previous fractured dentures and use of a suction cup in his first denture.

Upper and lower impressions were recorded with alginate and a special tray was fabricated for the upper arch. Border moulding was done with green stick compound and final impression was recorded with Zinc oxide eugenol. On the master cast obtained, a 0.5-0.8mm thickness of relief wax was adapted on the crest of the ridge and posterior palatal seal area to provide relief space for acrylic in metal framework (Fig.1) . This cast was duplicated with agar agar and poured in investment material. (Fig.1) The duplicated model was dipped in Beeswax for hardening and wax pattern for metal framework was adapted in the cast with a complete palatal coverage design and mesh framework on the ridge. (Fig.2) The framework was fabricated using Co-Cr-Mo alloy. After investing and casting, the metal base was electropolished.

Fig.1 – Relief wax adapted on master cast and duplication of cast.

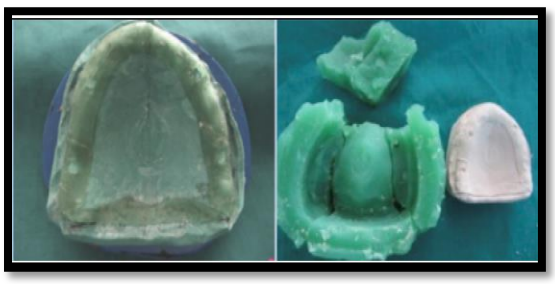

Fig.2- Wax framework

Occlusal rims were formed using pink wax over the metal framework and jaw relations were recorded after facebow transfer .Occlusal adjustment of selective mandibular teeth was done which were supraerupted or tilted on the cast, and these changes were duplicated in the patient's mouth. After setting the artificial teeth, try in was done to the patient's satisfaction.(Fig.3) Occlusion was balanced on the articulator and acrylization was completed.

Fig.3- Try-in and occlusal adjustment

Fig.4- Final Denture fabrication and delivery

Minor occlusal adjustments were done in the patient's mouth and the upper denture was delivered.(Fig.4) The denture was retentive and stable. After a few weeks of usage, the patient was questioned about comfort, stability and speech. Patient was highly satisfied.

DISCUSSION

Various articles have discussed the problems involved in fabrication of the maxillary complete denture opposing natural teeth. Ellingeret al.[7] and Yurkstas[8] have mentioned the importance of a harmonious occlusion. The concern over midline fracture of dentures was addressed by Beyli[9] as well as Farmer.[10]

The mechanical failure of such dentures under occlusal load, especially with opposing natural dentition, is a challenge and its prevention is still a concern for the clinician. Denture fractures cause compromised esthetics, functional inefficiency and financial burden on patients for its repair or refabrication.[11] Further, the repaired denture bases are even more prone to subsequent fractures if the root cause is not treated. In cases where flexure of the maxillary denture base has caused soreness of the underlying tissues or fracture of the denture, a cast metal base works great for the maxillary complete denture.

Comprehensive treatment planning and its timely execution would help prevent potential complications in restoring an edentulous maxilla. A metal denture base or an implant-supported prosthesis should be the correct treatment of choice over conventional acrylic complete denture, with correction of the occlusion in the opposing arch.

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Activities of IPS UP State branch

1. The Evolution Education Series on "Emerging Technologies to Improve Esthetic and economic success" in collaboration with Tristar and Biohorizons by Dr Sudhindra Kulkarni at Hotel Golden Tulip, Lucknow on 21st May 2016.
2. Continuing dental education programme on "Treatment of mutilated teeth- A Prosthodontic Approach" by Institute of Dental Studies & Technologies, Modinagar on 17 June 2016 by Prof. Himanshu sAeran, President, Indian Prosthodontic Society and Prof Ajay Gupta.
3. Organized a "Teeth arrangement competition" at BBD University, Lucknow on 11th July 2016.
4. "Teachers Training and Professional Development workshop" on 5-6 August 2016 at King George's Medical University, Lucknow.
5. Organized workshop for a "Dental graduate: A journey ahead" in September 2016 at Lucknow.
6. A workshop was organized on "Newer technologies for splinting" at BBD University, Lucknow in September, 2016 and speaker was Dr Mohan from Mumbai.
7. Organized "Dental fundamentals & Technique of dental photography" at KD Dental College, Mathura on 26-27th September, 2016.
8. Organized a "Free denture camp and oral health awareness programme" of Lucknow for poor and elderly person under the aegis of IPS U.P. State branch on 1 October 2016 on the occasion of International Day of Older Persons.

9. First IPS UP State dental conference was held at K D Dental College, Mathura in March, 2017.
10. 52th foundation day of Department of Prosthodontics and Golden jubilee and Silver jubilee meet of old MDS 1967,1992 batch organized on November 25,2017.
11. Organized International Conference on Prosthodontics from 9th-10thDecember, 2017 on "Rejuvenating Prosthodontics" in collaboration with Okayama University, Japan and Indian Prosthodontics Society U.P. State Branch held at Aligarh Muslim University.
12. Organized 1st International Workshop on "Maxillofacial Prosthodontics" from 16th- 17thMarch, 2018 by department of Prosthodontics King George's Medical University, Lucknow.
13. Organized National workshop on maxillofacial Prosthodontics on 8thSeptember, 2018 by Department of Prosthodontics, King George's Medical University, Lucknow.

"Teachers Training and Professional Development workshop" on 5-6 August 2016 at King George's Medical University, Lucknow.

1st International Workshop on Maxillofacial Prosthodontics from 16th-17thMarch, 2018 by Department of Prosthodontics ,King George's Medical University, Lucknow.

Workshop Schedule

{Participants will be divided into Groups for Hands-on training by Mahidol University faculty}

Day 1 (16th March)

Time	Topic	Speaker
9.00-10.30am	Ocular defects- Prosthetic approach	Dr Raghuwar D Singh Dr Balendra P Singh Dr Sunit K Jurel
10.30-11.15am	Management of extra-oral defects	Dr Theerathavaj Srithavaj
11.15 -11.30am	**Tea Break**	
11.30 - 12.00 pm	Auricular rehabilitation with implants retained silicone auricular prosthesis	Dr Waqas Tanveer
12.00 - 1.00pm	**INAUGURATION**	
1.00 - 2.00pm	**LUNCH**	
2.00 - 2.30pm	Skin complications of implants retained auricular prosthesis and resolution	Dr Natdhanai Chotprasert
2.30 - 4.30pm	Auricular wax pattern adaptation on working cast and fabrication of mould.	Team from Mahidol University

*** 2.00 - 5.00 pm : Delegates / student's presentation will run parallel to workshop (Details are mentioned in the registration form)**

Day 2 (17th March)

Time	Topic	Speaker
8.30-11.30am	Demonstration & Hands-on: Silicone mixing, silicone mixing with internal staining, silicone loading into the moulds.heat accelerated silicone vulcanization.	Team from Mahidol University
11.30-1.00pm	Ocular Prosthesis Hands-on	Team from Prosthodontics, KGMU
1.00-1.30pm	**LUNCH**	
1.30-4.00pm	External staining of silicone auricular prosthesis fixation of external stains.	Team from Mahidol University

Only for BDS/Interns: Rs.1000/- (Lectures, Poster/ Video clip presentation & 1 lunch)

***Registration Fees:** (Limited seats only)

	Without Accommodation	With Accommodation on twin sharing basis
IPS Member	Rs. 7500/-	Rs.9000/-
Non IPS Member	Rs. 8000/-	Rs. 9500/-

* Registration includes Lectures, Demonstration, Hands-on and 2days lunch

Payment Detail: Please send Cheque/DD/RTGS in favour of **"Prosthodontic Society KGMU"**
Bank Name: Allahabad Bank, FODS Branch, Lucknow.
A/C No. 50285393843; IFSC: ALLA0212089

:: Contact ::

Prof. Pooran Chand	Dr. R.D. Singh	Dr. Sunit Kr. Jurel	Dr. B.P. Singh
Mob. : 9415173419	Mob. : 9919089227	Mob. : 8707430113	Mob. : 9839121151

E.Mail: prosthokgmu18@gmail.com *For other assistance:* Ankita Pandey: 7505844999

1ST INTERNATIONAL WORKSHOP ON MAXILLOFACIAL PROSTHODONTICS

[In collaboration with Deptt. of Prosthodontics, KGMU, Lucknow & Mahidol University, Bangkok, Thailand]

16th - 17th March, 2018

Under the aegis of IPS UP State

Venue

C.P. Govila Auditorium, 3rd floor, Faculty of Dental Sciences, KGMU, Lucknow

Guest Speakers*

Dr.Theerathavaj Srithavaj Dr.Natdhanai Chotprasert Dr.Waqas Tanveer Dr.Pompattara Rochanakit Dr.Kittituch Vongvachvasin Dr.Preeda Wansook Dr.Supassra Nilanonth Dr.Shamsiahwati Binti Mat Rani

*** Department of Maxillofacial Prosthetics, Mahidol University, Bangkok, Thailand**

Organized by

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SPEAKERS

Dr. Theerathavaj Srithavaj did his DDS from New York University in 1994. He completed his postgraduate certificate in Prosthodontics from New York University in 1997, which, was followed by fellowship training in Maxillofacial Prosthetics at Memorial Sloan-Kettering Cancer Center, which is considered the pioneer center for training in maxillofacial prosthetics. He is Diplomate Thai Board of prosthodontics and currently working at Mahidol University as an Assistant Professor and academic program director of Maxillofacial Prosthetic. He was elected president of Asian Academy of Prosthodontics in 2014. Dr. Srithavaj have published over 50 International and national articles and have been actively presenting at various international conferences as keynote speaker.

Dr. Natdhanai Chotprasert, did his DDS from Khonkaen University, Thailand in 1998 and obtained certificate in Prosthodontics in 2002. He started working as lecturer at Mahidol University since 2002. During this journey, he completed his Master's in Maxillofacial Prosthetics in 2007 and PhD in 2015. Dr. Chotprasert, is Diplomate Thai board of Prosthdontics and currently working as clinical director of Maxillofacial Prosthetics Service. He has published numerous International and national articles and have been invited as guest speaker and workshop facilitator in various national and International conferences.

Dr. Waqas Tanveer completed his BDS from Karachi, Pakistan in 2010 with 1st honor. He served as preclinical instructor and dental officer at Prosthodontics department, Hamdard University for 3 years. He obtained his postgraduate diploma in Maxillofacial Prosthetics in 2015 and Master's degree in Maxillofacial Prosthetics in 2017. Dr. Tanveer is working as Teaching Assistant at Maxillofacial Prosthetics Service, Mahidol University since 2017. He has published International and national articles and have been invited as guest speaker and workshop facilitator at national and international conferences.

Dr. Raghuwar Dayal Singh and Dr. Sunit Kumar Jurel are the Faculty of Prosthodontics, KGMU, Lucknow. They are fellow of American Academy of Maxillofacial Prosthodontists and the members of 'Maxillofacial Prosthetic Unit' and 'Retinoblasoma Unit' in the University and have organized several workshops/symposium on Maxillofacial Prosthetics.

Dr. Singh is working as Associate Professor in Deptt. of Prosthodontics at KGMU. He has completed his Graduation and Post-graduation from same institution in 2003 and 2006 respectively. He is fellow of American Academy of Maxillofacial Prosthodontic and recipient of UKIERI award and trained in "dental implant in oral and maxillofacial reconstruction" at Kings College, London. He is involved in various research projects in this field and lectures extensively.

National workshop on maxillofacial Prosthodontics on 8th September, 2018 by Department of Prosthodontics, King George's Medical University, Lucknow.

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E mail ID- maxfac.kgmu@gmail.com
Mobile No- 9935025789, 9044953797, 9415470702, 9792699200

NATIONAL WORKSHOP ON MAXILLOFACIAL PROSTHODONTICS

Under the aegis of

INDIAN PROSTHODONTIC SOCIETY

8th September, 2018

Venue:

New Dental Building, King George's Medical University,Lucknow

Guest Speakers

Prof. Kanchan Dholam

Head,

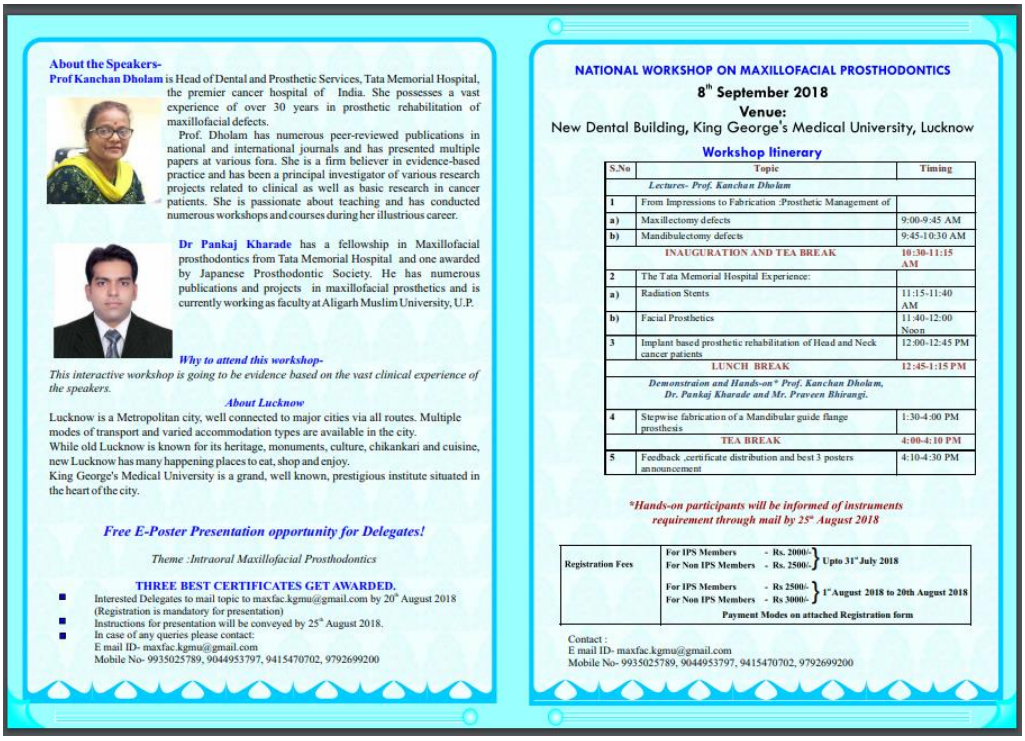
Department of Dental and Prosthetic Surgery

Tata Memorial Cancer Hospital, Mumbai,India

& Team

Jointly Organized by:

Department of Prosthodontics,
King George's Medical University, Lucknow
&
Indian Prosthodontic Society,U.P. State Branch



About the Speakers-

Prof Kanchan Dholam is Head of Dental and Prosthetic Services, Tata Memorial Hospital, the premier cancer hospital of India. She possesses a vast experience of over 30 years in prosthetic rehabilitation of maxillofacial defects.

Prof. Dholam has numerous peer-reviewed publications in national and international journals and has presented multiple papers at various fora. She is a firm believer in evidence-based practice and has been a principal investigator of various research projects related to clinical as well as basic research in cancer patients. She is passionate about teaching and has conducted numerous workshops and courses during her illustrious career.

Dr Pankaj Kharade has a fellowship in Maxillofacial prosthodontics from Tata Memorial Hospital and one awarded by Japanese Prosthodontic Society. He has numerous publications and projects in maxillofacial prosthetics and is currently working as faculty at Aligarh Muslim University, U.P.

Why to attend this workshop-

This interactive workshop is going to be evidence based on the vast clinical experience of the speakers.

About Lucknow

Lucknow is a Metropolitan city, well connected to major cities via all routes. Multiple modes of transport and varied accommodation types are available in the city.
While old Lucknow is known for its heritage, monuments, culture, chikankari and cuisine, new Lucknow has many happening places to eat, shop and enjoy.
King George's Medical University is a grand, well known, prestigious institute situated in the heart of the city.

Free E-Poster Presentation opportunity for Delegates!

Theme :Intraoral Maxillofacial Prosthodontics

THREE BEST CERTIFICATES GET AWARDED.

- Interested Delegates to mail topic to maxfac.kgmu@gmail.com by 20th August 2018 (Registration is mandatory for presentation)
- Instructions for presentation will be conveyed by 25th August 2018.
- In case of any queries please contact:
  E mail ID- maxfac.kgmu@gmail.com
  Mobile No- 9935025789, 9044953797, 9415470702, 9792699200

NATIONAL WORKSHOP ON MAXILLOFACIAL PROSTHODONTICS

8th September 2018

Venue:

New Dental Building, King George's Medical University, Lucknow

Workshop Itinerary

S.No	Topic	Timing
	Lectures- Prof. Kanchan Dholam	
1	From Impressions to Fabrication :Prosthetic Management of	
a)	Maxillectomy defects	9:00-9:45 AM
b)	Mandibulectomy defects	9:45-10:30 AM
	INAUGURATION AND TEA BREAK	10:30-11:15 AM
2	The Tata Memorial Hospital Experience:	
a)	Radiation Stents	11:15-11:40 AM
b)	Facial Prosthetics	11:40-12:00 Noon
3	Implant based prosthetic rehabilitation of Head and Neck cancer patients	12:00-12:45 PM
	LUNCH BREAK	12:45-1:15 PM
	Demonstraion and Hands-on Prof. Kanchan Dholam, Dr. Pankaj Kharade and Mr. Praveen Bhirangi.*	
4	Stepwise fabrication of a Mandibular guide flange prosthesis	1:30-4:00 PM
	TEA BREAK	4:00-4:10 PM
5	Feedback ,certificate distribution and best 3 posters announcement	4:10-4:30 PM

**Hands-on participants will be informed of instruments requirement through mail by 25th August 2018*

Registration Fees	For IPS Members - Rs. 2000/- For Non IPS Members - Rs. 2500/-	Upto 31st July 2018
	For IPS Members - Rs 2500/- For Non IPS Members - Rs 3000/-	1st August 2018 to 20th August 2018
	Payment Modes on attached Registration form	

Contact :
E mail ID- maxfac.kgmu@gmail.com
Mobile No- 9935025789, 9044953797, 9415470702, 9792699200


NATIONAL WORKSHOP ON MAXILLOFACIAL PROSTHODONTICS
Under the aegis of