Autologous platelet rich fibrin

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ABSTRACT

Aim: The aim of the study was to determine whether the addition of autologous platelet rich fibrin(PRF) membrane to a coronally advanced flap(CAF) would improve the outcome of the root coverage procedure. **Material and methods:** systematically 10 healthy patients with miller's class I and class II gingival recession defect were selected and divided into control (CAF) and test site (CAF&PRF). Clinical outcome was analysed on the basis of Plaque index(PI), Gingival Index (GI), Pocket Depth (PD), Clinical attachment loss(CAL), Width of keratinized gingiva(KT),Percentage root coverage (RC).**Result:** The root coverage was 61.66±33.379% at the end of 6 month in control site, and 63.33±20.48% at the end of 6 month post treatment .Conclusion:- CAF is a predictable treatment for the isolated millers class I and class II recession defect.

Keywords: Plaque, index, defect.

Introduction

Mucogingival surgery, was introduced in the 1950s by Friedman(1957) and was defined as "surgical procedures designed to preserve gingiva, remove aberrant frenum or muscle attachments, and increase the depth of the vestibule"[1]. In 1993 Miller proposed the term periodontal plastic surgery, considering that mucogingival surgery had moved beyond the traditional treatment of problems associated with the amount of gingivae and recession type defects which also include correction of ridge form and soft tissue esthetics. Periodontal plastic surgery would accordingly be defined as "surgical procedures performed to prevent or correct anatomic, developmental, traumatic or disease-induced defects of the gingiva, alveolar mucosa or bone" (Proceedings of the World Workshop in Periodontics 1996) [2]. One of the most esthetic concerns associated with periodontal tissues is gingival recession. According to Glossary of periodontal terns-gingival recession is defined as "Location of marginal periodontal tissues apical to the cemento-enamel junction" or "Location of the gingival margin apical to the cemento-enamel junction".

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Causes of marginal tissue recession are:- Alveolar bone dehiscence ,High muscle attachment and frenal pull, Plaque and calculus and Iatrogenic factors related to restorative and periodontal treatment procedures[2].

At least three different types of marginal tissue recessions may exist:

Recessions associated with mechanical factors, predominately tooth brushing trauma.,Recessions resulting from improper tooth brushing techniques are often found at sites with clinically healthy gingiva and where the exposed root has a wedge shaped defect, the surface of which is clean, smooth and polished. ,Recessions associated with localized plaque-induced inflammatory lesions. Such recessions may be found at teeth that are prominently positioned, i.e. the alveolar bone is thin or absent (bone dehiscence), and where in addition the gingival tissue is thin (delicate). An inflammatory lesion that develops in response to sub-gingival plaque occupies the connective tissue adjacent to the dentogingival epithelium. Recessions associated with generalized forms of destructive periodontal disease [2].In broad terms, three different approaches can be identified from the published literature:

The free gingival graft, the coronally advanced flap, and combined procedures, based on a coronally advanced flap with tissue ⁄ material interposed between the flap and the root surface. Exposed roots present a totally different set of problems, including root sensitivity, esthetic concerns, and predilection to root

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caries, cervical abrasion, and corresponding restorative efforts. Successful management of recession not only requires the soft tissue margin be at cementoenamel junction (CEJ), but also that the tissue be attached to the root and that a normal gingival sulcus be formed[3].The ultimate goal of root-coverage procedures is the complete resolution of the recession defect, with minimal probing depths after treatment, along with a physiologically and functionally acceptable texture integration of the covering tissues with the adjacent resident soft tissues[4].The use of connective tissue grafts (CTG), coronally advanced flap (CAF) with a connective tissue graft (CTG) is a predictable surgical procedure for the coverage of gingival recession and is considered to be the gold standard. For the CTG technique, the reported mean percentage of root coverage ranges between 65% and 98%. However, when the amount and thickness of the donor tissue is not sufficient, Other adjunctive methods include root bio-modification agents, barrier membranes, enamel matrix derivatives (EMD), acellular dermal matrix (ADM), platelet rich plasma (PRP), living tissue engineered human fibroblast-derived dermal substitute and platelet-rich fibrin (PRF)[5].

A recent innovation in dentistry is the preparation and use of platelet-rich fibrin (PRF), a concentrated suspension of the growth factors found in platelets. These growth factors are involved in wound healing and are postulated as promoters of tissue regeneration. Platelet concentrate contains Platelet Derived Growth Factors (PDGF), Transforming Growth Factors (TGF) and many other unidentified growth factors that modulate and up regulate one growth factors function in the presence of second or third growth factor [6].

Platelet-rich fibrin was developed in France by Choukroun etall[11].It is a second-generation Platelet concentrate. Its advantages over the better known PRP include an ease of preparation/application, minimal expense and lack of biochemical modification as no bovine thrombin or anticoagulant is required for its preparation. PRF is a fibrin matrix in which platelet cytokines (growth factors) and cells are trapped and are released over time. It can also serve as it avoids early invagination of the gingival epithelium, thereby serving as a barrier to epithelial migration. This has been used successfully in combination with CAF for root coverage in isolated and multiple gingival recessions[5].Platelets apart from their role in hemostasis have been reported to possess regenerative potential as their alpha granules are rich sources of various vital growth factors. Technological advancement has led to development of concentrated

platelets, by means of centrifugation, properly known as platelet concentrations. Platelet rich fibrin (PRF) the second and latest generation of platelet concentrate is an emerging therapeutic modality in the field of medicine and dentistry. It's completely autogenous nature, with no artificial biochemical agents involved, making PRF a safe and inexpensive treatment modality. The physiologic fibrin martix of PRF, obtained as the result of slow polymerization, has the ability to hold various growth factors and cytokines and release them at the wound site for a prolonged time period. The leukocytes and key immune cytokines IL 1β, IL 6, IL 4 and TNF α are trapped inprf giving it the antiinfection effect and lets PRF act as an immune regulation node. All these properties makes Platelet Rich Fibrin aunique entity in itself [12].

Considering the functional properties of Platelet Rich Fibrin (PRF), in this study an attempt has been made to clinically evaluate the effectiveness of PRF membrane with coronally advanced flap in the treatment of Miller's class I or II gingival recession defect.

Aim of the study
The aim of this study was to determine whether the addition of an autologous Platelet Rich Fibrin(PRF) membrane to a coronally advanced flap (CAF) would improve the clinical outcome in terms of root coverage, in the treatment of gingival recession.

Objectives
1. To assess the clinical efficacy of platelet rich fibrin membrane with coronally advanced flap in management of Miller's class I or II gingival recession by assessing clinical parameters. (Gingival Recession, Probing Pocket Depth, Clinical Attachment Level & Width of Keratinized Tissue)
2. To assess the clinical efficacy of coronally advanced flap alone in management of Miller's class I or II gingival recession by assessing clinical parameters. (Gingival Recession, Probing Pocket Depth, Clinical Attachment Level & Width of Keratinized Tissue)
3. To compare the effectiveness of coronally advanced flap with/without platelet rich fibrin membrane in the management of Miller's class I or II gingival recession defects.

Study design
A total 10(ten) subjects with two side bilateral defect will be selected from the opd (out patient department) of the department of the Periodontology and Implantology, DJ college of dental sciences and research, Modinagar. The whole study protocol will be explained to them and will be made clear to the potential patients that participate involuntarily. Written

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informed consent will be obtained from patients, and esthetical clearance for the study will be received from the Institutional Ethical committee and Review board of the OPD of the Department of Periodontology and Implantology, DJ College of dental sciences and research, Modinagar.

Inclusion criteria

1. Miller's class I or II recession conformed by radiographic analysis of involved tooth.
2. Recession defect in maxillary and mandibular incisors, canine, or premolar.
3. The patient should be between the ages of 18-55 years.
4. Patient with no systemic diseases.
5. No history of use of antibiotics in last 6 months.

Exclusion criteria

1. Systemic illness known to affect the outcomes of periodontal therapy.
2. Allergic to medication.
3. Pregnant and lactating women.
4. Use of tobacco in any form.
5. Patients under anticoagulation treatment,bleeding disorder.
6. Immuno compromised patients.

Study material
Platelet Rich Fibrin

Approximately, 10 ml of blood was drawn from a peripheral vein, in the selected patients, with a sterilized disposable syringe and was collected in 10 ml presterilized test tubes, without any anticoagulant and centrifuged immediately at 300 gm (3000 rpm), at room temperature for ten minutes as per Choukroun'sprotocol,in a centrifuge unit.
Following centrifugation, the blood was separated into distinct layers, with the cellular components remaining at the bottom of tube, platelet rich fibrin clot above the red blood cell line. The resultant product could be divided into three fractions described as
- RBC's at the bottom
- Platelet rich fibrin (PRF) clot in middle
- Topmost layer of acellular platelet poor plasma

Clinical parameters

Gingival index (GI) (Loe&Silness 1963) ,Plaque Index (PI) (Silness&Loe 1964)[72],Probing Pocket Depth (PD) Clinical Attachment Level (CAL)
Gingival Recession (G R) = (FRP TO GM) - (FRP TO CEJ): The FRP to GM is the distance from apical most end of the groove of stent till gingival margin where as FRP to CEJ is the distance from apical most end of the groove of stent till cemento-enamel junction.

Percentage of root coverage = (Postoperative recession depth – Preoperative recession depth/preoperative recession depth) X 100%.
All the measurements were made on Mesio - Buccal, Mid - Buccal &Disto - Buccal surface of selected sites using UNC-15 probe with a prefabricated stent.

Gingival thickness (GTH) ,Width of Keratinized gingiva (KT) = (FRP TO MGJ) – (FRP TO GM)[7].

Surgical procedure
The surgical procedure was identical in all patients. Before surgery, vital signs were recorded to determine the patient's health and general well-being.
The surgical procedure was performed under local anesthesia achieved by infiltrating 2% xylocaine hydrochloride with adrenaline 1:80,000.
A full thickness trapezoidal flap was elevated on the buccal aspect of the tooth being treated, using an intrasulcular incision extending horizontally to dissect the buccal aspect of adjacent papilla and two vertical incisions starting from its mesial and distal extremities extending beyond the muco-gingival junction.
This is followed apically with a partial thickness dissection. The papillae adjacent to the involved tooth were de-epithelialized[8].
The exposed root surface was planed and reduced in convexity by means of curettes and burs to obtain flatten or concave profile. The buccal flap was coronally repositioned to cover recession defect and secured with
Non-absorbable 4-0 braided silk sutures without tension, by means of interdental interrupted sutures[9].
The sites treated with coronally repositioned flap along with PRF membrane, previously prepared fibrin membrane was positioned over the recession defect, at the level of CEJ. The gingival flap was repositioned, with its margin located on the enamel. It was held in that position with horizontal suspensory sutures around the contact points. Stabilization of the blood clot was achieved by the application of gentle pressure for 3 minutes[10].
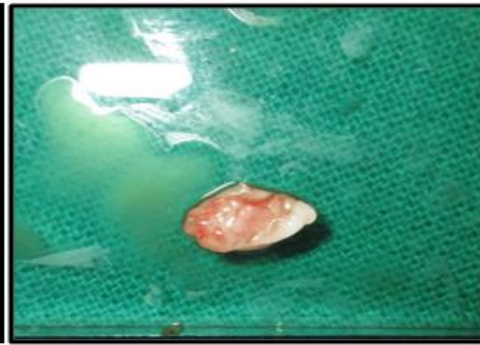
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A. Blood centrifuged at 3000 rpm for 15 minutes
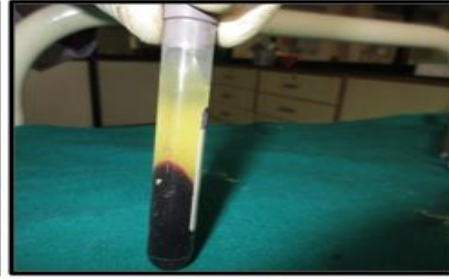
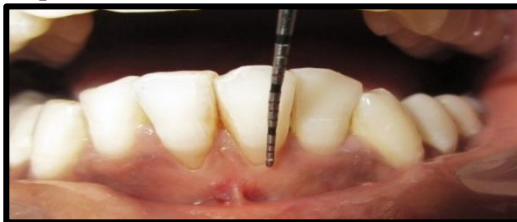B. Test tube containing PRF clot after centrifugation

C.PRF clot removed from test tube

D. PRF clot squeezed to form PRF membrane

Surgical procedure

Recession depth

Incision and flap reflextion

graft placed

suture placed

Copack placed

post operative

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Table 1: Age and gender wise distribution of subjects and sites

Subjects	Subjects (%)	Manage(Age range)	No. of sites
Male	8(83.33)	23.62±3.26(18.55)	16
Female	2(16.67)	21.50±50(18.55)	4
Total(10)	10(100)	23.20±2.348(18.55)	20

Table 2: Values of plaque index,gingival index and gingival bleeding index of study sites individually at different time intervals within control site and experimental site

Site no.	Plaque index									Gingival index					
	Control			Experimental					Control			Experimental			
	BL	3M	6M	BL	3M	6M			BL	3M	6M	BL	3M	6M
1	0.25	0.9	0.93	0.69	0.65	0.67			0.87	1.1	0.96	0.89	0.72	0.64
2	0.97	0.61	0.58	0.3	0.44	0.54			0.89	0.62	0.71	0.57	0.55	0.59
3	0.85	0.60	0.65	0.67	0.74	0.75			0.79	0.58	0.54	0.76	0.82	0.82
4	0.69	0.65	0.74	0.85	0.75	0.79			0.50	0.61	0.61	0.96	0.71	0.80
5	0.51	0.63	0.61	0.30	0.93	0.75			0.87	0.61	0.61	0.90	0.68	0.75
6	0.68	0.57	0.58	0.77	0.92	0.64			0.46	0.46	0.57	0.84	0.70	0.75
7	0.69	0.65	0.72	0.78	0.35	0.46			0.5	0.62	0.77	0.84	0.67	0.78
8	0.75	0.69	0.78	0.46	0.36	0.45			0.82	0.81	0.77	0.54	0.7	0.71
9	0.65	0.67	0.72	0.52	0.60	0.65			0.66	0.67	0.69	0.68	0.70	0.66
10	0.41	0.43	0.59	0.55	0.65	0.66			0.48	0.53	0.55	0.89	0.56	0.60

Table 3:Stastical comparison of mean difference at different time intervals for plaque index between control and experimental site

Parameters	Time interval	Control	Experimental	Mean of difference between various time periods	't' values	SIC
Plaque index	Baseline	0.648±0.209	0.589±0.195	-0.066±0.908	-0.69	0.544
	3 months	0.640±0.116	0.639±0.207	-0.001±0.075	-0.013	0.990
	6 months	0.690±0.111	0.636±0.118	-0.054±0.514	-1.049	0.308
	Baseline-3 months	0.006±0.268	-0.050±0.267	-0.002±0.110	-0.469	0.651
	Baseline-6 months	-0.045±0.278	-0.047±0.209	-0.002±0.110	-0.018	0.986
	3 months-6months	-0.050±0.066	0.003±0.127	0.063±0.440	1.203	0.244

Table 4:Stastical comparison of mean difference at different time intervals for gingival index between control and experimental site

Parameters	Time interval	Control	Experimental	Mean of difference between various time periods	't' values	SIC
Gingival index	Baseline	0.684±0.183	0.787±0.145	0.103±0.738	1.394	0.180
	3 months	0.663±0.178	0.681±0.077	0.018±0.061	0.293	0.773
	6 months	0.680±0.129	0.710±0.083	0.030±0.048	0.616	0.546
	Baseline-3 months	0.021±0.167	0.106±0.154	0.085±0.729	1.180	2.53
	Baseline-6 months	0.004±0.171	0.077±0.141	0.073±0.704	1.037	0.314
	3 months-6months	-0.017±0.839	-0.029±0.058	-0.012±0.032	-0.372	0.715

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Table 5: Values of gingival recession, pocket depth, clinical attachment level, and width of keratinsed gingva of study sites individually at different time intervals within control site and experimental site

Site no.	Gingival recession(mm)						Pocket depth(mm)						Clinical attachment level (mm)						Width of keratinized tissue (mm)					
	control			Experimental			control			Experimental			Control			Experimental			Control			Experimental		
	BL	3M	6M	BL	3M	6M	BL	3M	6M	BL	3M	6M	BL	3M	6M	BL	3M	6M	BL	3M	6M	BL	3M	6M
1	3	1	1	4	2	2	1	1	1	2	1	2	4	2	2	6	3	4	3	5	5	3	3	4
2	3	2	2	2	1	0	1	2	2	1	1	2	4	4	4	3	2	2	2	3	3	3	2	4
3	3	1	1	4	2	3	2	2	2	1	2	2	5	3	3	5	4	5	2	4	4	2	3	2
4	3	0	0	3	2	1	0	2	2	1	1	1	3	2	2	4	3	2	2	3	4	2	2	4
5	3	0	0	2	1	1	2	3	2	1	1	1	5	3	2	3	2	2	3	4	4	3	2	2
6	3	1	1	2	1	1	1	2	2	2	3	2	4	3	3	4	4	3	3	2	2	4	4	4
7	2	1	1	3	1	1	1	2	1	1	1	1	3	3	3	4	2	2	4	4	3	4	2	2
8	3	3	3	4	2	1	2	2	2	1	0	1	5	5	3	5	2	2	4	3	2	2	2	2
9	3	3	2	4	0	1	2	2	2	1	1	0	5	4	4	5	2	1	5	2	2	3	3	2
10	3	0	0	4	1	1	0	2	1	1	1	2	3	2	1	5	2	3	2	5	5	2	4	3

Table 6:Stastical comparison of mean difference at different time intervals for gingival recession between control and experimental site

Time interval	Control	Experimental	Mean of difference between various time periods	't' values	SIC
Baseline	2.900±0.316	3.200±0.918	0.300±0.307	0.976	0.342
3 months	1.200±1.135	1.300±0.674	0.100±0.417	0.239	0.813
6 months	1.100±0.994	1.200±0.788	0.100±0.401	0.249	0.806
Baseline-3 months	1.700±1.159	1.900±0.994	0.200±0.483	0.414	0.684
Baseline-6 months	1.800±1.032	2.000±0.816	0.200±0.416	0.480	0.637
3 months-6months	0.100±0.316	0.100±0.737	0.000±0.253	0.000	1.000

Table 7:Stastical comparison of mean difference at different time intervals for pocket depth between control and experimental site

Time interval	Control	Experimental	Mean of difference between various time periods	't' values	SIC
Baseline	1.200±0.788	1.200±0.421	0.000±0.282	0.000	1.000
3 months	2.000±0.471	1.200±0.788	-0.800±0.290	-2.753	0.013
6 months	1.700±0.483	1.400±0.699	-0.300±0.268	-1.116	0.279
Baseline-3 months	-0.800±0.788	0.00±0.666	0.8000±0.326	2.449	0.025
Baseline-6 months	-0.500±0.707	-0.200±0.632	0.300±0.300	1.000	0.331
3 months-6months	0.300±0.483	-0.200±0.788	-0.500±0.292	0.000	0.105

Table 8:Stastical comparison of mean difference at different time intervals for clinical attachment between control and experimental site

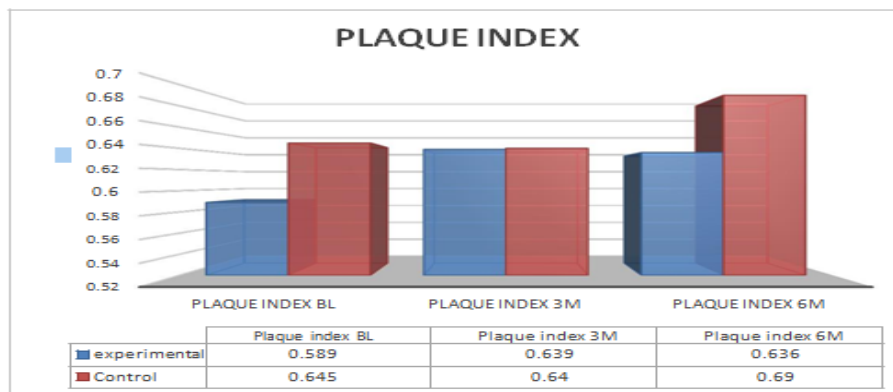| Time interval	Control	Experimental	Mean of difference between various time periods	't' values	SIC
Baseline	4.100±0.875	4.400±0.966	0.300±0.412	0.728	0.476
3 months	3.100±0.994	2.600±0.843	-0.5000±0.417	-1.213	0.241
6 months	2.700±0.948	2.600±1.173	-0.100±0.477	-0.210	0.836
Baseline-3 months	1.000±0.816	1.800±1.135	0.800±0.442	1.809	0.087
Baseline-6 months	1.400±0.966	1.800±01.135	0.400±0.471	0.849	0.407
3 months-6months	0.400±0.699	0.000±0.816	-0.400±0.339	-1.177	0.255

Table 9:Stastical comparison of mean difference at different time intervals for width of keratinized tissue between control and experimental site

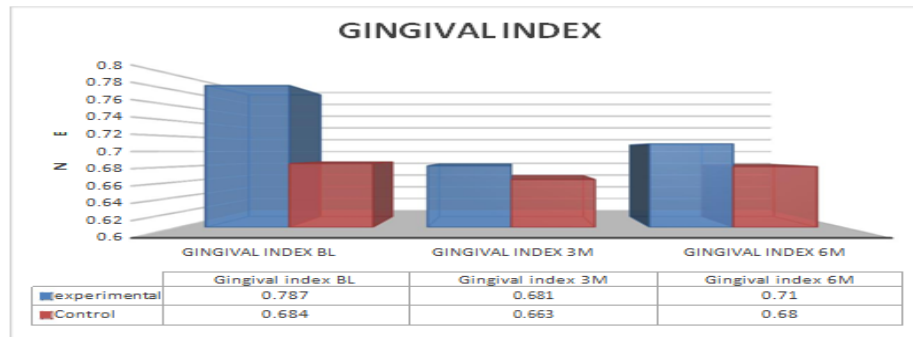| Time interval	Control	Experimental	Mean of difference between various time periods	't' values	SIC
Baseline	3.000±1.054	2.800±0.788	-0.200±0.416	-0.480	0.637
3 months	3.600±1.080	2.700±0.823	-0.8000±0.429	-1.863	0.079
6 months	3.400±1.173	2.900±0.994	-0.500±0.486	-1.028	0.318
Baseline-3 months	-0.500±1.779	0.100±1.100	0.600±0.661	0.907	0.376
Baseline-6 months	-0.400±2.011	-0.100±1.197	0.300±0.740	0.405	0.690
3 months-6months	0.100±0.567	-0.200±1.352	-0.300±0.401	-0.747	0.464

Table 10: Percent root coverage at different time intervals within control and experimental sites

Site no	Site selected	Control		Site no.	Site selected	Experimental	
		BL-3M	BL-6M			BL-3M	BL-6M
1	23	66.67	66.67	1	13	50.00	50.00
2	23	33.33	33.33	2	23	50.00	100.00
3	45	66.67	66.67	3	23	50.00	25.00
4	23	100.00	100.00	4	13	33.33	66.67
5	34	100.00	100.00	5	23	50.00	50.00
6	14	66.67	66.67	6	24	50.00	50.00
7	44	50.00	50.00	7	13	66.67	66.67
8	13	00.00	0.00	8	33	50.00	75.00
9	23	00.00	33.33	9	23	100.00	75.00
10	44	100.00	100.00	10	33	75.00	75.00

**GRAPH 1: MEAN PLAQUE INDEX AT DIFFERENT TIME INTERVALS WITHIN CONTROL AND EXPERIMENTAL SITES**

	Plaque index BL	Plaque index 3M	Plaque index 6M
experimental	0.589	0.639	0.636
Control	0.645	0.64	0.69

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GRAPH 2: MEAN GINGIVAL INDEX AT DIFFERENT TIME INTERVALS WITHIN CONTROL AND EXPERIMENTAL SITES

GINGIVAL INDEX

	Gingival index BL	Gingival index 3M	Gingival index 6M
experimental	0.787	0.681	0.71
Control	0.684	0.663	0.68

GRAPH 3: MEAN GINGIVAL RECESSION AT DIFFERENT TIME INTERVALS WITHIN CONTROL AND EXPERIMENTAL SITES

GINGIVAL RECESSION

	Gingival recession BL	Gingival recession 3M	Gingival recession 6M
experimental	3.2	1.3	1.2
Control	2.9	1.2	1.1
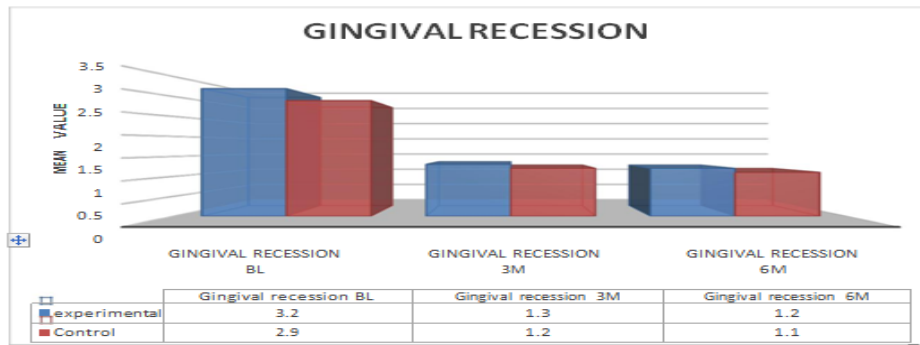
GRAPH 4: MEAN POCKET DEPTH AT DIFFERENT TIME INTERVALS WITHIN CONTROL AND EXPERIMENTAL SITES

POCKET DEPTH

	Pocket depth BL	Pocket depth 3M	Pocket depth 6M
experimental	1.2	1.2	1.4
Control	1.2	2	1.7
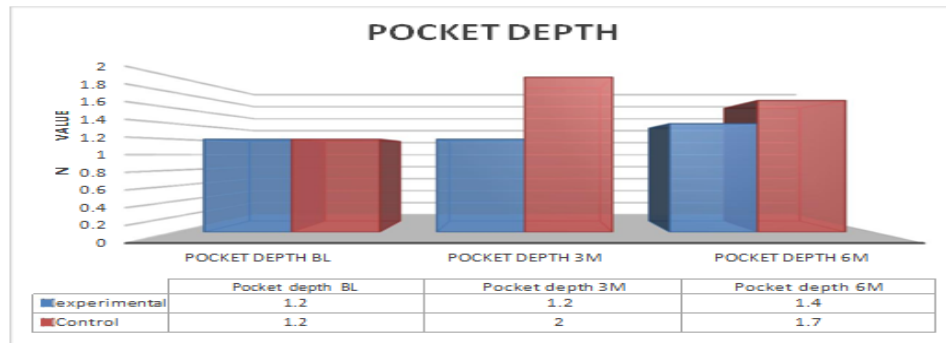
GRAPH 5: MEAN CLINICAL ATTACHMENT LEVEL AT DIFFERENT TIME INTERVALS WITHIN CONTROL AND EXPERIMENTAL SITES

CLINICAL ATTACHMENT LEVEL

	Clinical attachment loss BL	Clinical attachment loss 3M	Clinical attachment loss 6M
experimental	4.4	2.6	2.6
Control	4.1	3.1	2.7

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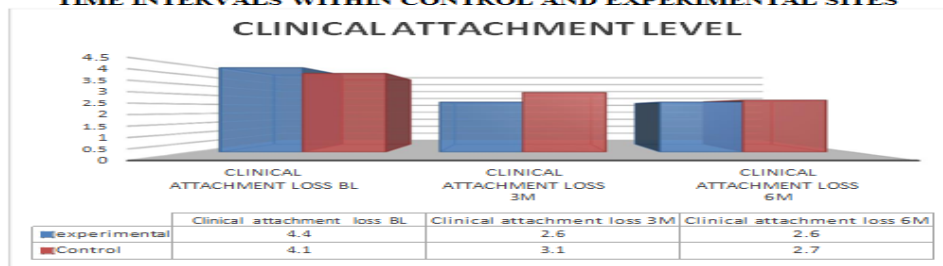
GRAPH 6: MEAN WIDTH OF KERATINIZED TISSUE AT DIFFERENT TIME INTERVALS WITHIN CONTROL AND EXPERIMENTAL SITES
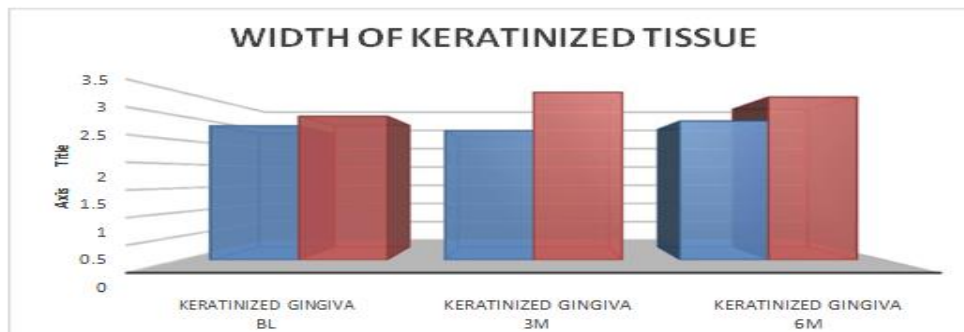
GRAPH 7: COMPARISON OF PERCENTAGE OF ROOT COVERAGE AT DIFFERENT TIME INTERVALS WITHIN CONTROL AND EXPERIMENTAL SITES
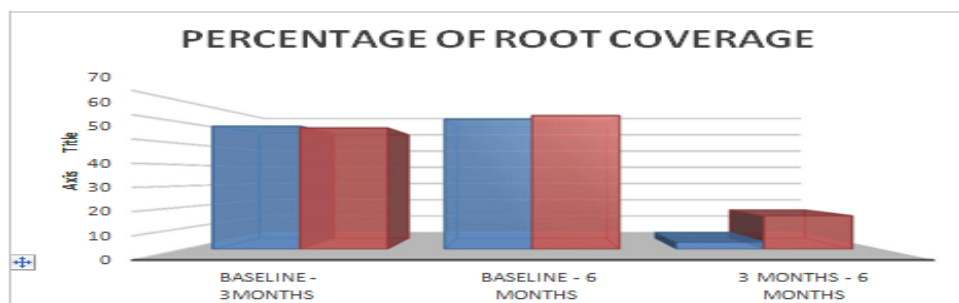
Discussion

One of the most common esthetic concerns associated with the periodontal tissue is gingival recession. It is the displacement of the gingival margin apical to cemento-enamel junction (CEJ), resulting in higher incidence of attachment loss, root caries, and root hypersensitivity. Its development has been frequently associated with periodontal disease, traumatic tooth brushing, frenal pull, and tooth malposition.coronally advanced flap (CAF) technique have shown more predictable recession coverage with apparently satisfactory esthetic results as mentioned by Allen EP (1988), Allen EP and Miller PD , Wennstrom J and Zuchelli G (1996) Nevertheless, CAF when used alone is unstable on long-term, in spite of having the advantage of low morbidity. Wennstrom J and Prato GP have stated that the results of this procedure have presented a percentage root coverage varying from 70% to 90%. CAF have been frequently combined with various regenerative materials aiming at attaining both regeneration of functional attachment apparatus and root coverage.

Several regenerative materials such as guided tissue regeneration membranes, enamel matrix proteins derivatives, alloderm, living tissue-engineered human fibroblast derived dermal substitute have been combined with CAF in the treatment of gingival recession and have reported good clinical outcomes. Although these regenerative materials are still used today, the introduction of autologous biomimetic agents like platelet concentrates has given new promise for the better clinical outcomes in periodontal therapy. Present study was conducted to clinically evaluate the effectiveness of autologous PRF membrane with CAF in the treatment of isolated gingival recession. A total of 20 sites from 10 patients, with gingival recession defects were selected and divided into two Site. Control site consists of defects treated with coronally advanced flap only and experimental Site treated with coronally advanced flap along with PRF membrane. All the selected volunteers were subjected to assessment of clinical parameters like Plaque index, Gingival index, Gingival Bleeding index, measurement of gingival recession, pocket depth, clinical attachment loss and width of keratinized gingiva pre operatively at baseline and post operatively at 3 months and 6 months. After the completion of phase I therapy selected sites were treated with coronally advanced flap alone and in combination with PRF membrane. Systemic antibiotics and non- steroidal anti-inflammatory drugs were prescribed post surgically to control infection and patient's discomfort. All the

patients showed good compliance with uneventful healing for both the Sites.

Summary

The present study was conducted in order to evaluate and compare the clinical efficacy of PRF membrane in the treatment of gingival recession defects. In the present study a total of 10 patients (8 males and 2 females) with 20 sites aged between 18 to 55 years with a mean age of 23.2 ± 2.326 years were treated. 10 sites in the control sites were treated with coronally positioned flap where as patients in experimental sites were treated with coronally positioned flap along with autologous PRF membrane. Clinical efficacy of both the procedures in obtaining root coverage was evaluated and an inter-Site comparison of clinical parameters was done between the two sites.

In the present study the mean score values of plaque index, increased slightly from baseline to six months follow up period in both the Sites, slight reduction in gingival index scores was observed in both the sites. Also for gingival bleeding index, reduction in scores was observed. The scores for all the above parameters were comparable between the two sites and there was no significant difference between the two sites

Both the procedures showed the effectiveness for the treatment of recession and for enhancing root coverage at 6 months follow up period. The mean reduction in recession depth was statistically significant in both the sites at 6 months follow up. The inter-Site comparison for reduction in recession depth was statistically insignificant. There was no significant reduction in pocket depth in both control sites and Experimental sites from baseline to 6 months. However the inter-site comparison showed significant differences in pocket depth reduction between the two site from baseline to 3 months and 6 months. A significant gain in clinical attachment was observed in control site and Experimental site at 6 months post-surgery. The inter-site comparison however showed no significant difference between the two site. There was no significant gain in width of keratinized gingiva in both control site and experimental site from the baseline to 6 months. The intersite comparison also showed no significant difference between the two site.

The extent of root coverage obtained in control site was 58.33% and in experimental site was 57.50% at 3 month post-surgery. This increased to 61.66% and 63.33% at 6 months follow up, but remained statistically significant in both the Sites.The present study demonstrated that both CAF and CAF + PRF are equally effective in providing clinically significant outcomes in respect to root coverage. Thus both the treatment modalities can be used for the coverage of gingival recession.

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