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It gives me immense pleasure to forward this issue of Dentimedia to our esteemed members. I congratulate the editorial team on starting with A first of its kind peer reviewed e-journal .

Research and innovations are the lifeline for any field to progress. Dentimedia is one such platform where people with clinical or academic experience can contribute towards upliftment of knowledge for the benefit of the dental fraternity. I again congratulate the editor along with his team for acting in synchrony with this ideology .Hope the readers will find the journal enlightening and enriching.

I urge all the members to take advantage of this platform and share their experience and views on clinical applied aspects of dentistry and contribute for the upliftment of dentistry in the state. I request all members to follow the covid - 19 protocols strictly. Take care of your self alongwith fellow dentist and patients.

Greetings from HON. SECRETARY

DR. GAUTAM MADAN

HON. SECRETARY, IDA Gujarat State Branch

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My Dear Colleagues,

This trying times have shook the faith of many as also it has provided impetus to the optimists to acquire more knowledge to allay fear and provide new avenues of treatment and relief. Journals and research studies are integral of an optimistic effort. I urge all IDA members to actively contribute their unique clinical experience in these trying times which can be helpful to other fellow practitioners. The unfazed efforts of the editorial team under all these circumstances to assimilate articles and publish should be applauded. Now is the time to step forward and do something for our colleagues, do something for the society: in whatever way we can. It may be a small gesture or a large donation. Give your time, give your efforts, give money: tan, man, dhan but make some positive contribution at this time of crisis. And over-all be optimistic. The darkest hour is before dawn. This time will soon pass. Till then stay healthy and safe.

Greetings from Editor

DR. HAREN PANDYA

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The quest for knowledge is the essence of human existence. It is this hunger which has led to startling discoveries which have changed the very course and direction of our lives. The fire of research and exploring the grey zones makes us face up the challenges in our path .This journal like many others is a small attempt to pump our inquisitiveness and gain knowledge at the same time about newer dimensions in our field .Its really appreciable for the authors to send in their experiences for the larger benefit of our members. May the light of knowledge provided by such publications disillusion us and help us to coalesce our efforts in improving oral health of our patients and population at large .Take care and stay safe.

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The Efficient Clinician Master Key

Author: Dr. Bhavdeep Singh Ahuja

ABSTRACT

Marketing is absolutely necessary if we want our practice to grow, prosper and flourish beyond all means. It not only brings new footfalls along with the desired 'moolah' (money) to keep the flame running but it also helps to retain the existing patients alongside strengthening ties with them. As a clinician, we never ought to underestimate the importance of marketing to dental patients and for that, marketing always has to begin with an end in mind. As human beings first and dentists later, we really ought to realize the importance of various golden virtues that are needed in for a human dealing and because, our major interaction in a dental clinic involves public dealing only and that too mostly with unknown people and many of them who are not in a so called happy physical condition to visit us (in pain, discomfort or distress). Lending a sympathetic ear to their problems, giving them proper time and an opportune chance to be heard, of course followed by an effective treatment rendered is the least we can do as part of our service to the profession.

INTRODUCTION

Marketing is the key to success of any business and dental practices are no exception in that regard. We have to really know and back ourselves to market our dental practice. The tough part is that most of us don't know actually how to do that. There is not a same answer to all clinics' marketing strategy, as we have plethora of those available amongst different strategies that we can actually put to use. We are in such a service industry – the health care industry, where the demand of our services can never go out of demand. There are talks of huge economic recession overall which has started affecting our industry as well, as per the views of a few key opinion leaders of dentistry. However, I would disagree with them a tad. I strongly feel the patient comes to us for their 'needs' and 'wants' both. The recession might force the 'wants' to go out of demand temporarily, but the needs can't just be eliminated at will by patients, even if they want to.

The needs can only be delayed, suppressed or suspended, albeit temporarily but they will always keep us in business, no matter what. So, it is up to us to realize the same and not be bogged down by undue performance pressure of just attending to a few 'needs' only especially when the chips are down as the needs sometimes just don't bring enough exciting challenges (read: lucrative money as well in bargain) to us as a clinician. We had discussed from Rule No. 1 to 7 in the first part of this series on Practice Management. Let us delve further into the same and discuss further rules in this second part of the same series which can help us discover the efficient clinician master key.

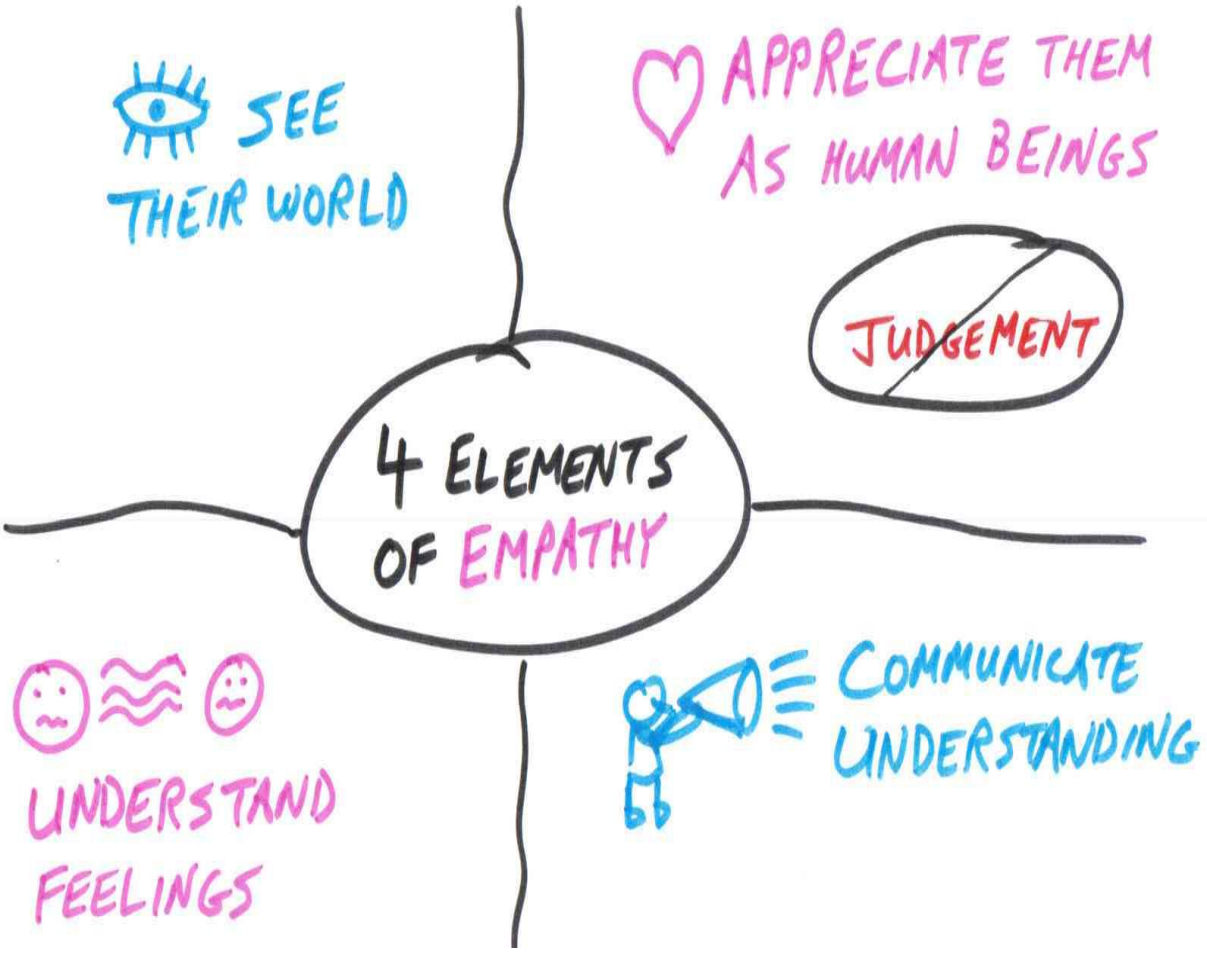
REVIEW

8. **Rule 8:** Patients Are People Too

The customers or the patients in our clinics hate to think themselves just as a sale, a potential sale or any kind of sale or a number. They think of themselves as Mr. ABC or Mrs. XYZ, a busy man/woman who is looking for a solution to their dental problem/s and want to be treated like the human beings they are. When patients take some time to discuss, it usually means they need our help with something. They might be frustrated about a persistent problem or on the fence about a bad service or a bad experience that has happened before in any dental clinic premises. If we want to make our patients happy, firstly treating them like people is the least we can do as human beings first. Referring to a patient as a card number or a case number is off-putting. Thinking of a patient as just a business opportunity is even further plain rude. It is easy to ask for a name before a chat begins and it makes the experience more human for everyone involved. There is a huge amount of literature available for developing customer archetypes and how to use them, but I will begin with the simplest approach.

EMPATHY

Try to understand who you are marketing/selling to and what their needs and constraints are. You will end up building a better offering through a stronger product and service roadmap and you will have more success especially when you are pitching for an expensive product like an Implant or a Metal Free (Zirconia) Crown.



Below are a few guiding questions that will put you in the right mindset to be empathetic to your ideal patient?

a. **How old is your patient?** Knowing the average age of your target market allows you to connect and speak to your patients. From the verbiage you use, to the social media channels you leverage, to the time of day you communicate, to the related services and applications you associate with, it is dependent on the age of your target group.

a. **What is the gender of your patient?** Similar to the question above, gender plays a large role in how you communicate with your patients. Some products are very gender-specific like the tooth jewellery & bridal smile makeover for weddings, while others are less so. Also, female patients are more smile conscious than male patients and can act as a good brand ambassador of your smile products. Furthermore, this may significantly impact the design and the look and feel of your branding of the dental clinic, both offline and online.

a. **What is your patients' job title or employment status?** Job title or employment status opens up a whole "can of worms" when it comes to understanding your patients. What are they trying to accomplish day-to-day? Who are they trying to impress? Are they in the office or on the road in a field job? All these factors can help you understand the role your provided option of treatment coupled with your service plays in their life.

a. **When will your patients be using your service?** This is one of the more important questions to ask yourself when developing your offering or simply put, treatment plan. What is their current planned length of engagement or the mood they are in, much will be influenced by the time of day or the activities in which your service is engaged.

What is your patient's name? Where do they live? **Where are they from? What kind of music do they listen to? Do they have kids? Are they a kid? etc. This goes**

a little deep into actually establishing a patient's archetype, but if you can answer these questions, we can get more in touch with whom we are building up our treatment plan or service for?

The broad summary of all the above is that you are building your clinical practice for your patients only. Again, your patient firstly is a person, not an inanimate object. This will be very important in all aspects of your clinical practice, whether it is the design and messaging of your website, building your profile or convincing your patients for an expensive product like a veneer, whitening or a Zirconia (provided you are charging also well for such premium services). Patient or Customer-service content is often overlooked, but the bottom line is: ***Just remember; you want to know who your customer is*** but these little decisions say a lot about a dental clinical practice's personality and values. Try avoiding content on your website that might not fall under the traditional content umbrella? Edit it for voice and tone. Before publishing anything online on your website, ask yourself, "How will this make the reader feel?"

8. **Rule 9: Choose and pick the problem you want to solve**.

No Offence, but everybody in our country claims to be a genius with plenty of ideas up their sleeves always. Just imagine a tough situation in a tight T20 Cricket match and every cricket lover glued to the TV screen and India in a slightly disadvantageous position; almost on the verge of losing, at this junction, cool and calm ex-Indian Captain, M S Dhoni at crease, almost everyone watching the match will have a piece of advice for MSD on how and where to play and which shot to play irrespective of the delivery (ball) line and length and surprisingly, it will come even from those quarters or people who have not wielded a cricket willow in their hand once in their whole lives. The only problem is that we have more ideas but lesser resources to implement those ideas. One can not be a James Bond 007 and solve all problems in a day, but, important is that first of all, we should know what our problems are; hence, Prioritization is the first key.

Implementing it in the dental clinical practice, we would like to do everything to make our practice successful. Unfortunately, the cold and hard fact is that there is not enough time, money, people or other resources and also, all of them together at the same time.

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Whenever you are crowded with multiple options, choices and reasons and are unable to decide which way to go, just ask yourself a very simple question; "If you can only do one thing at that point of time, what would it be?"

That Answer would and should be your Priority at that point of time.

It sets the context for evaluating other options; the option which will help you reach your objectives. We have to decide, what do we want?

- Faster? At a great pace?
- Economical? For less money?
- Successfully? With better results?

Prioritization doesn't have to be complicated and doesn't have to take a lot of time. Try following these following simple steps next time you are faced with a difficult prioritization challenges:

a. Brainstorm a list of everything you would like to accomplish in order to achieve your objectives.
b. Outline the potential impact of each activity on the objective.

a. Estimate the cost of each activity (time, money and resources).
b. Evaluate the likelihood of success.
c. Identify the activities that provide the biggest return on investment (ROI).
d. Prioritize the activities according to their ROI.

Can you think back to a situation (from the past) where prioritization would have helped you more effectively achieve your objectives?

I know I can, many of times.

In routine life also, certain such priorities decide our way of life. My wife is an ex-school teacher and like every teacher, every now and then advises to keep my clinic desk, neat and organized, I admit here, it is usually clean but otherwise clumsy with lots of papers loitering, some waiting to be tagged here in proper place. My only reply to her is my priority is efficient treatment planning and treatment delivery and not my desk. I agree she is right in her own might but then my priorities in clinic are very different from the usual lot (in this case, her) and that defines me more as a clinician in terms of priorities and not my organized desk in clinic only. My opinion might be disagreeable to many, but then I use the same as a differentiator (More on Differentiators in upcoming issues of the series) in my clinic to separate myself from the crowd of dentists in my area – Efficient treatment planning and Effective treatment delivery efficaciously.

8. **Rule 10:** Look at the larger picture or as they say; See the Forest and the Trees

It is important to look beyond the walls of your dental clinic and get a sense of what is going on around you. Your patients may have many options in terms of number of dentists in your area. It is up to you to communicate to them in context of the overall universe of possibilities – the domain or the specialty in which you operate. Your job is to convince your patients that your service and solution is obviously the best choice and the last choice for them. Understanding how your clinic and its services stack up against the competition is a logical step towards creating a message that is convincing and compelling.

Marketing Strategy Guru, Jack Trout said "differentiate or die." It doesn't mean literally dying but dying down in the race or stop running the race, we are running with each other to beat the competition but then that doesn't necessarily mean bashing the competition either. It means knowing your relative strengths and weaknesses and

positioning your services accordingly. The best would be a SWOT Analysis (Strength, Weakness, Opportunity and Threat analysis) especially from your dental clinic point of view.

- Strengths: characteristics of your dental clinic/setup that give it an advantage over others
- Weaknesses: characteristics of your dental clinic/setup that place it at a disadvantage relative to others
- Opportunities: elements in the environment that your dental clinic/setup could exploit to its advantage
- Threats: elements in the environment that could cause trouble for your dental clinic/setup

What makes SWOT particularly powerful is that, with a little thought, it can help you uncover opportunities that you are well-placed to exploit and by understanding the weaknesses of your clinic/setup, you can manage and eliminate threats that would otherwise catch you unaware. Strengths and weaknesses are often internal to your dental clinic/ setup, while opportunities and threats generally relate to the external factors. More than this, by looking at yourself and your competitors using the SWOT framework, you can start to craft a strategy that helps you distinguish yourself from your competitors, so that you can compete successfully with your competition. One way of utilizing SWOT is matching and converting. Matching is used to find competitive advantage by matching the strengths to the opportunities. Another tactic is to convert weaknesses or threats into strengths or opportunities. If the threats or weaknesses cannot be converted, a person should always try to minimize or avoid them.

Look for external market influences and how they might affect your dental clinic/setup and the competition. Consider the political, economic, social and technical issues surrounding your dental clinic/ setup. Are economic factors like inflation a major concern to your patients? What the current situation demands is that earlier demonetization and now generalized economic recession started raising its fangs on the OPD's of dental clinics like a poisonous snake. It would be followed by certain new developments which are going to effect all of us in a big way pretty soon viz. the Clinic

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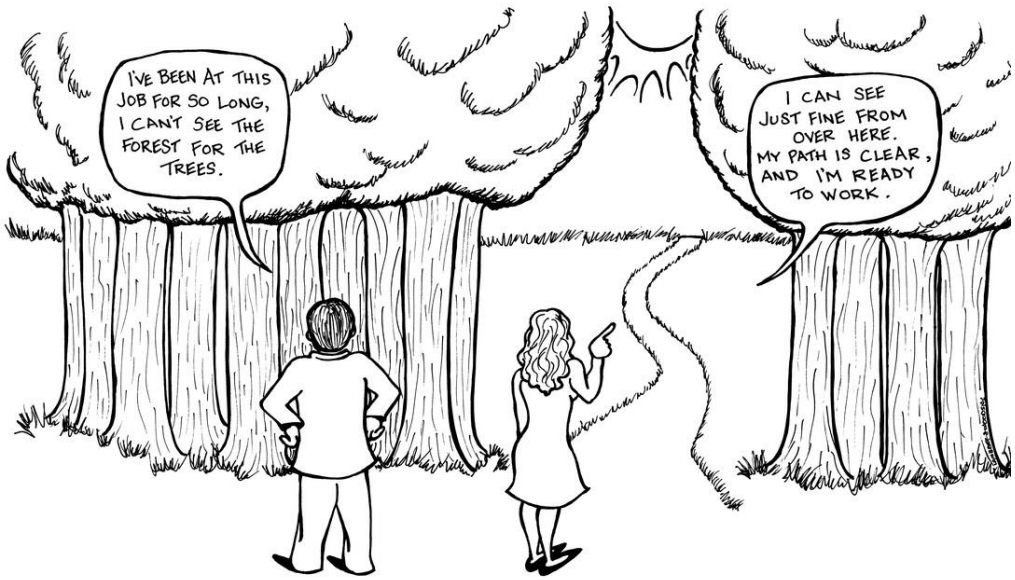
Establishment Bill ready to go guns blazing, the Bio Medical Waste management penalties strictly started being applied on dental clinics, the AERB Licensing going full Monty, the Medico-Legal hassles of running a dental practice, the ever increasing and threatening medical law suites which are pushing us to take safer treatment options (which realistically may not be first choice), the frequent violence and vandalism against doctors in clinics and many more ready like a venomous snake to raise its hood against us. Some times, we get too busy in cribbing over wastage of that 'little' material by our dental assistants (of putting a drop of liquid extra in the GIC mix and wasting 'so much material') that we forget to realize that there are bigger and worse problems waiting outside to raise their head against us.



It is sometimes really easy to get caught up in the internal perceptions of the competition. Maybe so, but it is a good idea to stick your head out the window every once in a while and see if what you believe is really true. Otherwise, you might find yourself at a distinct disadvantage than you peers in your area (fondly called as neighbourhood competition).

When you are too close to a situation, you need to step back and get a little outside perspective. When you do so, you will notice there was a whole forest that you could not see before because you were too close and focusing on just the trees. Simply that you have focussed on the many details and have failed to see the overall view,

impression or the vital key point. These are the moments when it is more important than ever to take a look around and see the forest and the trees.

8. **Rule 11:** Involve them and they will understand

Confucius once said "Tell me and I will forget. Show me and I will remember. Involve me and I will understand."

Engaging patients in treatment decisions can lead to beneficial outcomes. Patients who are active participants in a shared decision-making process have a better knowledge of treatment options and more realistic perceptions of likely treatment effects. The resulting treatment choices are more likely to concur with their preferences and attitudes to risk. They are also more likely to adhere to treatment recommendations and more likely to select expensive procedures, the 'wants' as per your recommendations as I mentioned above.

Since there are often multiple options for choosing a treatment or preventive procedure and the benefit/harm ratios (RBO – Risks, Benefits and Options) are frequently uncertain or marginal, the best choice depends on how an individual patient values the potential benefits and harms of the alternatives being discussed.

The desire for participation has been found to vary according to age, educational status, disease severity and ethnic origin. The only reliable way to find out patients' preferred role is to ask them directly, but their responses may be influenced by their previous experiences with earlier dentists, if any. Some patients may assume a passive role because they have never been encouraged to participate and remain unaware of this potential for doing so whilst some earnestly feel it is impolite to imply that the dentist doesn't necessarily know the best. For a true shared decision making to take place, patients must be given sufficient and appropriate information, including detailed explanations about their condition, treatment options, its implications, outcomes and uncertainties, precisely the RBO's mentioned above. The dentist must have the scientific facts at his or her fingertips and must be skilled in risk communication. It is tempting to conclude that the information giving process could be short-circuited if you could determine at the outset that the patient didn't want to be involved in that decision. However, many patients 'do' want extensive information and a chance to express their preferences, even if they decide to delegate the final decision making to their dentist and that must be vehemently respected.

Isn't this a Catch 22 situation? You want your patients to listen to you, be involved with you and trust you so that they listen to your treatment plan, be a part in the decision making or the best is that they leave the final decision on to you saying that they have full faith in you.

Now how do you reach this stage?

No new patient will say those words in the first visit (unless he has been strongly recommended by a loyal star patient of yours and he himself has such a mindset to blindly trust you).

Let us briefly go into the history of this thought:

There are basically three ways, your potential (read: new) patients learn about your clinic & your services.

a. They hear one of your keywords/messages directly.
b. They are told about an experience someone else had.
c. They have a direct experience with your clinic.

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It is generally understood that if someone has a negative experience with your clinic or its services, they are far more likely to tell someone about it. That means it is even more important to help your patients have a positive experience in your clinic. Even small little things can sometimes make a huge difference like a warmly greeting receptionist, water dispenser, a tea/coffee dispenser in the waiting area of the clinic, cordially greeting dentist (either you or your associate), polite staff, courteous behaviour etc. These things might seem insignificant, but in the patients' mind, sometimes, they do make a huge difference in addition to your treatment skills in today's tough competitive world since ours is also a service driven industry. These along with your service add a great value and are the small differentiators or things they will remember and will tell their friends and colleagues about. Your motto of the clinic and the experiences you create are the common threads that tie the core of internal marketing knitted together.
Think about it, if you as a consumer get a brilliant first class service, won't you appreciate the experience? Why wouldn't your patients appreciate the same thing then?

Involve your patients in a dialogue. Show them your services, your facilities and your staff. Pull them in to something that matters to them and they will understand (and remember). Now this is the part where you can say you have impressed upon the patient in the first visit with your décor, smile, courtesy and service promptness. Now, comes the real test; the actual service or real work skills for which the patient is here. The acquired treatment skills come to the fore actually in this regard.

Once you believe that you have gained some trust over your patient, now is the time to discuss the finer nuances. There is considerable debate about when and to what extent, patients should be actively encouraged to participate in treatment decisions. Detailed aspects must be discussed followed by an informed consent – verbal or written; implicit or explicit.

Obtaining an informed consent requires dentists to give patients full disclosure or information in all cases of significant risk, even if there is only one treatment possibility. After all, there is still a decision to be made because the patient has to choose between two courses of action: to accept or reject the treatment.

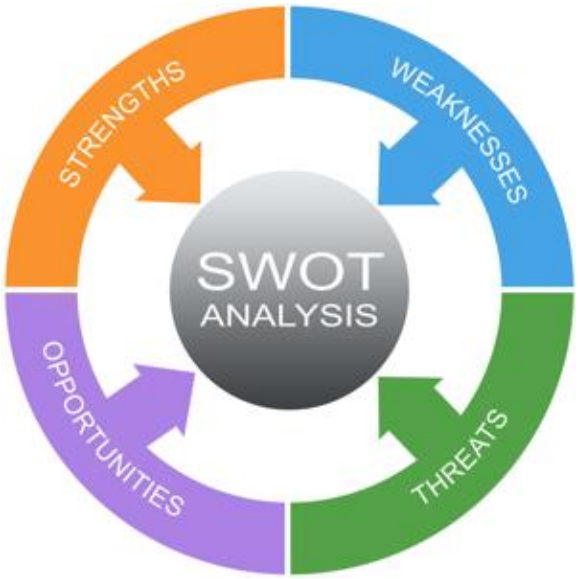
As per my personal view, dentists should never make choices (read; decisions) for patients; instead, they should play the role of a navigator, communicating risk and outcome probabilities and helping patients to take an informed autonomous decision. What I believe, dentists should listen to patients and respect their preferences, give patients the information they want or need in a way they can understand and respect patients' right to reach decisions with their dentist about their treatment and care. However, this does not imply, we should force patients to take responsibility for decision making against their will, but it does suggest that we should make serious efforts to provide information about the treatment or management options, explain it, elicit their preferences and support them in weighing up the alternatives unless they tell you they don't want to be involved.

How far you should go in persuading them to play an active role if they are hesitant about doing so will always remain a matter for debate and food for thought.

8. Rule 12: SWOT Analysis

SWOT Analysis is a very useful technique for understanding your Strengths and Weaknesses and for identifying both the Opportunities open to you and the Threats you face. Identification of SWOTs is important because they can impede development later in planning to achieve the objectives. First, decision-maker (i.e. You) has to consider whether the objective is attainable, given the SWOTs. If the objective is not attainable, you must select a different objective and repeat the process. Users of SWOT analysis must ask and answer questions that generate meaningful information for each category (strengths, weaknesses, opportunities and threats) to make the analysis useful and find their competitive advantage.

Originated by Albert S. Humphrey in the 1960s, the tool is as useful now as it was then. You can use it in two ways – as a simple icebreaker helping people get together to "kick off" strategy formulation, or in a more sophisticated way as a serious strategy tool.



STRENGTHS

a. What advantages does your clinical set-up have over others?
b. What do you do better than anyone else?
c. What unique resources can you draw upon to offer better services that others can't?
d. What do your patients see as your strengths?
e. What factors mean that you impress upon your patient easily or as they say in marketing lingo; you "get the sale"?
f. What is your clinic's **Unique Selling Proposition** (USP)?

Consider your strengths from both an internal perspective and from the point of view of your patients and your neighbours in your area.

WEAKNESSES

a. What could you improve?
b. What should you avoid?
c. What are your patients most likely to see in your clinic as a weakness?
d. What factors cause you loss of patients or saying in marketing lingo; 'lose your sales'?

Again, consider this from an internal and external perspective: Do other people seem

to perceive weaknesses that you don't see? Are your competitors doing any better than you?

It is always best to be realistic at the earliest and face any unpleasant truths as soon as possible and change and improve accordingly for uninhibited success later on.

Opportunities

a. What good opportunities for growth can you spot?
b. What interesting trends are you aware of existing in the market?
c. Useful opportunities can come from such things as:
    1.

1. Changes in technology and markets on both a broad and narrow scale.
2. Changes in government policy related to your field.
3. Changes in social patterns, population profiles, lifestyle changes and so on.
4. Local events.

Threats

a. What obstacles for growth do you face usually?
b. How much is your competition in the market?
c. Are quality standards or specifications for your field or services changing?
d. Is changing technology threatening your position?
e. Any bad debts or cash-flow problems, you are facing regularly from your patients?
f. Could any of your weaknesses (listed above) seriously threaten your clinical practice?

SWOT analysis can be used effectively to build organizational or personal strategy; for e.g. strong relations between strengths and opportunities can suggest good conditions in the practice and allow using an aggressive strategy. On the other hand, strong interactions between weaknesses and threats could be analyzed as a potential warning and a strong advice for using a defensive strategy.

SWOT Analysis is a simple but useful framework for analyzing our dental clinic's strengths and weaknesses and the opportunities and threats that we can face. It helps us focus on our illustrious strengths, minimize threats, overcome weaknesses and take the greatest possible advantage of even the minimalist opportunities available around us.

It can also be used to "kick off" strategy formulation or in a better way as a strategy tool to build up the clientele. We can also use it to get an understanding of our competitors, which can give us the insights; we need to craft a coherent and successful competitive position.

When carrying out the analysis, we have to be realistic and rigorous. Apply it at the right level and supplement it with other option-generation tools where appropriate.

Executing a SWOT Analysis

Pre-SWOT Homework

Before you set out to do a SWOT analysis with your staff, team or other group, there has to be some preparation. The first step is to take a stab at creating a dental clinic setup profile. This is simply a description of what your dental clinic does and who your primary consumer target group is. For further simplified break-up, we can profile each segment (all categories of patients) to capture what value they add to the clinic. It also helps to outline strengths, weaknesses, opportunities and threats that you have perceived so you can prompt the discussing group if needed.

Leading the Process

When performing a SWOT analysis, it is best to start with a clean slate. Lay out all the four quadrants and outline the content you are looking to populate it with as above, but let others also pour in their opinions freely and you taking the back seat. You will find it amazing to see that the third eye perspective (the staff) will probably give you much more inputs and insights than you can even perceive as they have that bird's

view to look into the strengths and weaknesses of the clinic (provided their opinions are not gagged or reprimanded) than you because of the obvious reasons of clouding for own setup. In scenarios, where you can't go in-depth, you may need to do a segment-by-segment SWOT and then feed it up into the larger one. For most middle sized clinics, however, a single SWOT chart is sufficient to capture the current condition of the dental clinic.

At first, you want to capture every single input; you can from the group in a rush. When the pace of input trickles off, you can go over the chart and eliminate duplicate/overlapping entries and ensure each entry is in the right category. Walk the group through your reasoning if you are out rightly eliminating an entry or combining concepts. This is basic courtesy and it shows that their input is being valued. The group can also help in adding and removing entries within the SWOT chart to distil it down to a mutually agreed upon core.

Working with the Chart

At this point in the process, you will likely have an imbalance between the internal and external factors. People are much more aware of the current state within the company and less likely to be thinking of the direction of the business sector as a whole. If needed, you can prompt more entries under opportunities by encouraging them to think about how a current strength can be leverage to create new opportunities or how fixing a weakness could lead to a larger opportunity in the future. Likewise, in what situations (threats) will your current strengths and weaknesses endanger the company?

A typical example of a SWOT Analysis worksheet is as below:
(Courtesy: **Mindtools.Com**)

1. Strengths:
    a. What do you do well?
    b. What unique resources can you draw on?
    c. What do others see as your strengths?

1. Weaknesses:
    a. What could you improve?
    b. Where do you have fewer resources than others?
    c. What are others likely to see as weaknesses?

1. Opportunities:
    a. What opportunities are open to you?
    b. What trends could you take advantage of?
    c. How can you turn your strengths into opportunities?

1. Threats:
    a. What threats could harm you?
    b. What is your competition doing?
    c. What threats do your weaknesses expose you to?

Examples of SWOT Analysis

Now, let's take a practical look at SWOT analysis by applying it to a fictional DENTAL CLINIC SET UP:

Strengths

1. What do you consider as strengths, as your competitive advantages in your dental clinic?
2. Do you offer a large variety of services that fulfill your patients' needs?
3. Can your patients find you and book an appointment easily with your clinic?
4. Is your clinic characterized by high-technology and do your patients appreciate this?
5. Is your dental clinic in a convenient location, allowing your patients to find you and reach you with ease?

Weaknesses

1. What are the areas that need improvement at your dental clinic?
2. Are your payment options inflexible?
3. Do patients have to wait for more than 10 minutes for their appointment in the waiting area?
4. Is the clinic decoration old and out of fashion?
5. If Yes, should you change it?

Opportunities

1. What are current social, financial or other trends that you could benefit from?
2. For example, the demand for invisible braces for adults could be useful for an orthodontist to explore, do you also think so?
3. A patient can consider including an aesthetic treatment based on the latest trends, such as implants or whitening or restoration with highly aesthetic materials like veneers, are you doing them?

Threats

1. Is there anything happening in your environment that could be detrimental to your clinic?
2. For example, a larger and newer clinic is to be opened in the neighbourhood or an existing competitor clinic is installing better technological equipment than that in your clinic.
3. Other threats include political and environmental ones such as an unstable political situation.
4. Did demonetization affect your setup?
5. Do you think GST has any role to play in clinic set up in wake of the fact that health care is exempted from GST?

The discussion on SWOT would be particularly useful for the general dental practitioners, provided they are willing to read and apply it with an open mind in their practices. There is still much more to SWOT analysis which I will be covering in the next part of this series.

Please do share with me, your valuable feedback at my email **drbhavdeep@gmail.com** or SMS/Whatsapp at **98761-93039**.

MANAGING CLINIC for DENTISTS – Part II
The Efficient Clinician Master Key

The biggest challenge any dentist (irrespective of his social status as a dentist) always would face is the case acceptance or say, making a patient say YES to the treatment. Yes, the big names (read: dentists) would have it a tad easy than the small to medium level ones since the "I am too busy" clout inherent with them comes in as a part and parcel with their big level practices, but nevertheless, even they have their off days, when sometimes only 5 out of 10 understand them.

Why and How?

We shall find out more on this in the next issue of the Journal

(To be Continued)

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Dear Readers: **Important Announcement**

The above article by Dr. Bhavdeep S. Ahuja will be published in many parts.

The above is Part 2.

Check out DentiMedia September 2019 Vol. 20 Issue 3 for the 3rd part of the above article.

2 Management of antithrombotic medications before dental procedures.

Authors: Dr. Heena Punjabi

Abstract -

Anticoagulants and antiplatelet medication are types of drugs that manipulate the blood coagulation process. In the dental practice, it is quite common to come across patients on antiplatelet medications which makes the treatment challenging as there are always higher chances of bleeding while procedure.

On the other hand, abruptly stopping these medications to avoid hemorrhagic complications could expose the patient to the risk of a thrombotic event ex: transient ischemic attack, deep vein thrombosis or stroke . Hence the decision to stop / continue the medicines should be decided by rationally weighing down the consequences of each situation. The most commonly used medication are warfarin , aspirin and clopidrogel.

The present article reviews the current status and recommendations regarding the use of anticoagulants during dental procedures.

Review & Recommendations -

Antithrombotic medications including anticoagulants and antiplatelet drugs are used by millions of patients to prevent heart attacks and strokes. Anticoagulants include vitamin K antagonists like warfarin (Coumadin®), dabigatran , and rivaroxaban . Antiplatelet medications include aspirin, clopidogrel , ticlopidine , cilostazol , and dypyridamole. Not so long ago , dental treatment for patients on antiplatelet drugs happened to be a controversial topic since there is a risk of thromboembolic complications on stopping the drug . As early as 1956, Askey and Cherry[1] reported on 6 anticoagulated patients undergoing 14 extractions without bleeding complications and warned that the risk of embolic complications exceeded the risk of bleeding complications for dental extractions in anticoagulated patients. In contrast, Ziffer et al[2] recommended interrupting anticoagulation for dental extractions after reporting the first cases of serious bleeding requiring more than local hemostatic measures to control bleeding (injections of vitamin K) after dental extractions in anticoagulated patients.

2 Management of antithrombotic medications before dental procedures.

The American College of Chest Physicians (AACP) recommended continuing anticoagulation for dental extractions in its statements in 2001, 2004, and 2008. The AACP recommended in 2012 a choice of either continuing anticoagulation using a prohemostatic mouthwash like tranexamic acid to aid in hemostasis for minor dental procedures including extractions or withdrawing anticoagulation for 2 or 3 days before the procedure. The American Dental Association states, "It is generally agreed that anticoagulant [including antiplatelet] drug regimens should not be altered prior to dental treatment. If you stop taking, or take less of, the anticoagulant medication, you increase your chance for blood clot development, which could result in thromboembolism, stroke or heart attack. The risks of stopping or reducing this medication routine outweigh the consequences of prolonged bleeding, which can be controlled with local measures." [emphasis original][3] The American Dental Association, American Heart Association, American College of Cardiology, Society for Cardiovascular Angiography and Interventions, American College of Surgeons, and American College of Chest Physicians have concluded that antiplatelet therapy should be continued for dental procedures.[4,5]

Fortunately , dental procedures like simple/surgical extractions are different form surgeries encountering major blood vessels.Local measures to aid hemostasis including application of pressure by biting on gauze, tea bags, oxidized cellulose, absorbable gelatin, tranexamic acid mouthwash, and suturing are simple to use and usually effective.

Therapeutic levels of continuous antithrombotic medications like warfarin and aspirin should not be interrupted or reduced for dental surgery, as the risk of bleeding complications is very low and if postoperative bleeding complications occur, they are usually simple to treat with local hemostatic measures. Physician consultation can be a valuable tool for a dentist to gain information about a patient (eg, the patient's INR levels), but it is not a substitute for the dentist's good clinical judgment, experience, and education. Dentists and physicians must weigh the potential bleeding complications in patients on continuous antiplatelet drugs like aspirin versus the potential for heart attacks or strokes in patients whose antiplatelet therapy is interrupted for dental procedures.

2 Management of antithrombotic medications before dental procedures.

There have been four case reports of severe bleeding including two involving platelet transfusions after dental treatment in patients on aspirin, but these reports each include patients with abrupt INR values or taking other medications that may have been responsible for the bleeding[6,7,8,9]. Three of these reports were in the 1970s, and one was in 1997. These cases have led some to recommend a 7- to 10-day interruption of low-dose antiplatelet therapy before dental extractions[10].

If aspirin therapy is interrupted for surgery, a 7- to 10-day interruption was thought to be prudent. Sonksen et al. showed that a 2-day interruption is sufficient for normal hemostasis[11] and Brennan et al. recommended no more than a 3-day interruption[12]. If aspirin therapy is interrupted for a dental procedure, it is the physician and not the dentist who should recommend the interruption. In 2007, the Haemostasis and Thrombosis Task Force of the British Committee for Standards in Haematology reviewed the literature and then issued a statement for managing anticoagulated patients undergoing dental surgery[13]. These guidelines were reviewed by the British Committee for Standard in Haematology, the British Society for Haematology Committee, the British Dental Association, and the National Patient Safety Agency. The authors found the bleeding risk to be low for dental surgery in patients anticoagulated at INR 2.0 to 4.0 (even above therapeutic levels) and recommended that anticoagulation be continued in most of these patients, with hemostasis controlled by local measures. They also recommended that INR levels be checked on stably anticoagulated patients within 72 hours of surgery. It is important to remember that Warfarin has a long half-life of about 40 hours so when warfarin therapy is interrupted, it takes about 5 days to reach normal hemostasis.

Optimal INR levels to prevent stroke with minimal risk of hemorrhage has been the subject of intense study and for most patients has been defined as INR 2.0 to 3.0 (INR 2.5 to 3.5 for some high-risk patients). Interrupting therapeutic levels of continuous antithrombotic medications carries a low but significant risk of catastrophic or fatal thromboembolic complications. Physician consultation can be a valuable tool for a dentist to gain information about a patient (eg, the patient's INR levels), but it is not a substitute for the dentist's good clinical judgment, experience, and education.

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3 Comprehensive Rehabilitation of Children with Early Childhood Caries under General anesthesia: A Case Report of Two Cases.

Authors: Dr. Matangi Joshi, Dr. Yash Bafna, Dr. Krunal choksi, Dr. Rutu Patel

Introduction:

One of the cornerstones in practicing pediatric dentistry is the ability to direct children positively throughout their dental experience and encourage assenting dental attitude in order to improve their oral health[1]. Anxiety associated with dental procedures can be reflected in the child's behavior. Therefore, it is important for pediatric dentists to be able to assess and evaluate psychological, personal traits and behavioral responses of the child in order to identify the need for modifications in the management approaches to reduce and cope with dental anxiety.[2]

There are various methods of behavior management that pediatric dentists apply in their day-to-day practice which are both non-pharmacological and pharmacological. Although most of the children can be managed with non-pharmacological methods, few require pharmacological interventions. Pharmacological methods such as conscious sedation (Nitrous-oxide-Oxygen sedation) and General Anesthesia (GA) have gained acceptance among the Indian parents and pediatric patients. Parents now perceive dental GA as a treatment method which positively affects children's quality of life.[3]

GA is a controlled state of unconsciousness in which protective reflexes is lost.[3] In some cases, dental GA is the most practical and cost-effective mode of treatment. According to the American Academy of Pediatric Dentistry (AAPD), certain patient population who may not tolerate routine dental treatment can only be treated under GA[4]. Pediatric patients of very young age or those suffering physical, mental, cognitive or emotional immaturity or disabilities or those with extreme anxiety who need extensive rehabilitation are considered suitable candidates for GA. The majority of dental GA candidates are children who suffer from most prevalent dental health problem, Severe Early Childhood Caries (S-ECC), who may otherwise be healthy.[5]

The present case series describes the comprehensive management of two patients in a hospital based set up under GA by the team of Department of Pediatric and Preventive dentistry, NPDCH, Visnagar.

Comprehensive Rehabilitation of Children with Early Childhood Caries under General anesthesia: A Case Report of Two Cases.

Case report:

Case -1: A 5-year-old male child, a diagnosed case of spastic type Cerebral Palsy was brought with the complaint of pain in the upper and lower back tooth region over period of 6 months. Parents reported that child had difficulty in chewing food. Patient was responsive to verbal commands and was undergoing treatment and physiotherapy for Cerebral palsy. The patient was taken to another center for dental treatment earlier, but treatment could not be accomplished due to behavioral issues of the child. Upon Intra Oral Examination dental caries in relation to 51,52,51,54,55,62,64 and deeply carious teeth with possible pulp involvement i.r.t 84, 64, 65, 74, 75 was observed.

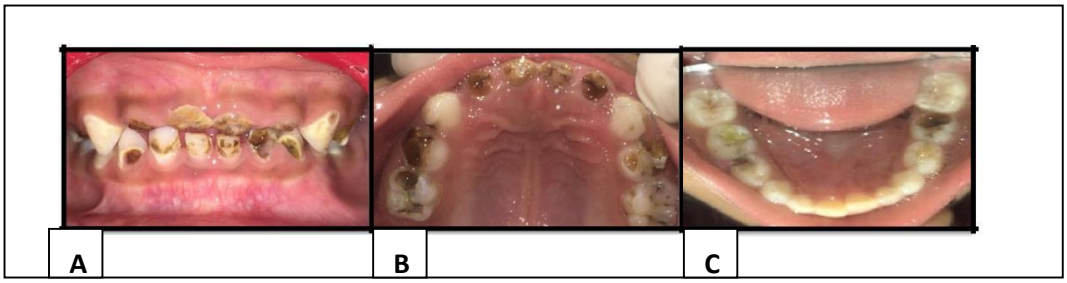

Figure 3: Pre-operative intraoral photograph

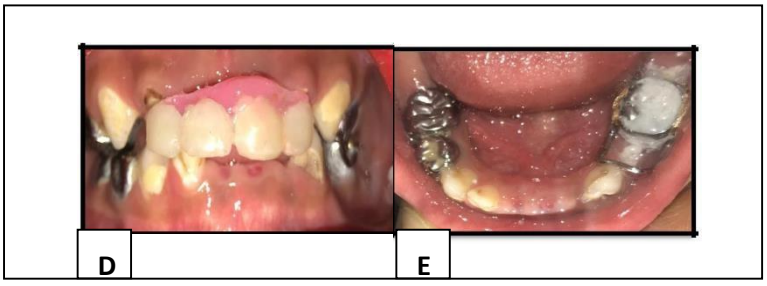

Figure 4: Post-operative intraoral photograph with Groper's appliance

The treatment plan for complete rehabilitation under GA was formulated. This was discussed with the parents and informed written consent was obtained. After consultation with Anesthesiologist, Pre Anesthetic investigations were performed at the Nootan General hospital in the campus. The child was taken up for full mouth rehabilitation under GA with nasal intubation. Single visit Pulpectomies were performed on 64, 65, 74, 75 followed by placement of stainlesssteel crowns. Grossly destructed 84 was extracted followed by band and loop space

maintainer. Band pinching for Groper's appliance (on 55 and 65) was performed with impressions. Topical fluoride application using 2% Sodium Fluoride gel was done as a part of the preventive protocol.

On completion of the procedure the child was extubated uneventfully and transferred to Post

Anesthesia Care Unit and later shifted to ward. A week later insertion of Groper's appliance was done at the opd of department of pediatric and preventive dentistry.(Figure-4).

Case-2: A 5-year-old male patient, presented with chief complaint of pain in the upper and lower right back tooth region and of multiple decayed teeth. The patient had a negative Frankel rating. Intraoral examination revealed multiple carious teeth 51, 52, 54, 55, 61,62,64,65,74,84,85 which were suspected to be pulpully involved . Due to the extreme negative uncooperative behavior exhibited by the child, as well as the extensive treatment needs which would demand several visits, a decision to perform comprehensive rehabilitation under hospital based GA was made.

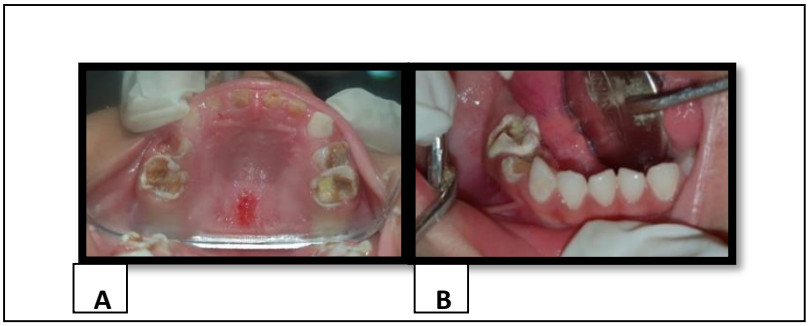

Figure 5: Pre-operative intraoral photograph

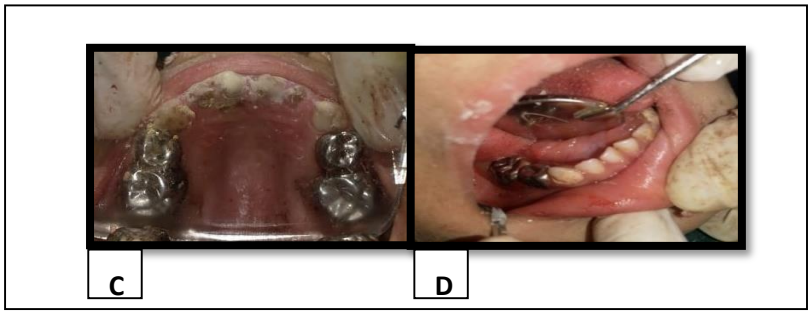

Figure 6: Post-operative intraoral photograph

Preparatory phase in which the parents were counseled, and dietary instructions were given, a corrective phase which included endodontic treatment and restoration of all restorable teeth and a surgical phase which included extraction of un-savable teeth was drawn out. This treatment plan was discussed with the parents and informed written consent was obtained from the parents and Pre anesthetic investigations were performed at the Nootan General hospital in the campus. The child was taken up for full mouth rehabilitation under GA with nasal Intubation technique. Pulpectomies were performed on 54,55,64,65,74,84,85 followed by placement of stainless-steel crowns. Grossly destructed 52 was extracted. For 51, 61, 62 pulpectomy followed by GIC restorations were done. (Figure-6) On completion of the procedure the child was extubated uneventfully and later shifted to the ward for post operative care. Patient was discharged following day.

DISCUSSION:

Treating a young child with severe dental caries is usually a challenge for dentists, especially when extensive and complex treatment is necessary. Despite the existing behavior management and pharmacological techniques, there are cases when full mouth rehabilitation under general anesthesia is required to provide safe and effective dental treatment.[6]

The goal of GA in the pediatric dental patient is to eliminate cognitive, sensory, and skeletal motor activity to facilitate the delivery of quality comprehensive diagnostic, restorative, and/or other dental services. Studies in UK showed a steady increase in the number of children treated under GA suggesting a shifting trend in practice of pediatric dentistry toward treatment under GA.[7] A similar trend was observed in various parts of Europe and Asia and Middle eastern nations.[8]

Despite the risk of adverse events inherent in GA, dental treatment performed in a hospital operating room is generally considered more safe. Pediatric dentists report a favorable attitude toward dental treatment under GA for pediatric patients and many report an increasing interest in utilizing this modality more frequently in their practices.[8]

Luis L et al (2010) reported parents are more overprotective and less likely to set limits on children's behavior. As a result, there may be a shift towards more pharmacologic behavior management techniques.[9] Furthermore, there has been a significant increase in the number of outpatient surgical centers and outpatient surgeries, due to simpler and safer procedures; thereby, increasing parental accessibility and familiarity with outpatient GA. This change in acceptability among parents coincides with practitioners views as well. There seems to be an increasing acceptance of GA for the treatment of children in pediatric dentistry.[10]

There are several advantages of GA, where full mouth rehabilitation are performed in a

single session in a hospital environment providing efficient services in a safe mode.[11] Moreover this ensures the child receives effective pain control with minimal negative impact on behaviour. Dental GA maybe more convenient and cost effective than treatment in office settings.[12,13]

ECC treatment approaches under GA fall under two main categories: extractions only or an approach that combines all treatments, which may be restorative, preventive, or exodontia. The choice is influenced by many factors, including the restorability of the teeth, caries risk for the child, ability of the child to maintain a satisfactory level of hygiene, parent's wishes and socio-economical status, the possibility of a follow up, and the resources available. For example,
GA is used mostly for extractions in the UK.[14]

In the present case series patient who had multiple decayed teeth and extremely uncooperative was treated in form of full-mouth rehabilitation under GA.

Children with special health care needs require special dental treatment. Behavior guidance of can be challenging. Demanding and resistant behaviors may be seen in the children with mental retardation and even in those with purely physical disabilities and normal mental function. These behaviors can interfere with the safe delivery of dental treatment.[15]Cerebral Palsy is a central nervous system disorder which affects movement, coordination and posture.

The management of these children poses a challenge for the treating dental surgeon because of uncontrolled involuntary movements, difficulty in communication, inability to open the mouth properly, abnormal posture and multiple dental procedures to be carried out as was seen in the present cases.[16] Hence, GA was resorted to for oral rehabilitation of the second case presented in this series with multiple dental problems. Loyola-Rodriguez et al (2004) concluded that (GA) with sevofurane, propofol and conscious sedation is an excellent tool to provide dental treatment in CP patients without most of the major postoperative complications.[17]

The day care surgery provided under GA, wherein the patient is treated chair side in the dental office. Apart from cost containment, other benefits are: decompression of busy hospital beds, less nosocomial infections and early recovery in home environment with the family. Thus, there is less disruption of personal lives.[18]

Therefore, it is clear that GA might be a preferable option for dealing with extensive ECC damage in uncooperative children; however, a strict compliance with post-operative plans is crucial to avoid the loss of any positive rehabilitation outcomes.[19]

CONCLUSION: GA use among pediatric patients in a hospital based setting is a plausible option in extensive full mouth rehabilitation of children, lacking cooperative ability, as demonstrated by the above case reports. Adequate training and judicious case selection by the pediatric dentists, ensures provision of better quality dental care under GA, with minimal emotional distress for children. Improved training among Pediatric dentists and availability of modern hospital based settings has facilitated a shifting trend toward oral health rehabilitation of young patients under GA in the Indian diaspora.

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4 PNAM : A boon to facilitate the surgical repair in infant with Unilateral cleft lip and palate : A case report

Authors: Dr. Rutu Patel, Dr. Shoba Fernandes, Dr. Yash Bafna, Dr. Palak Gupta

Introduction

Orofacial clefts(OFCs) are one of the most frequent congenital anomalies of the lip, palate, or both caused by complex genetic and environmental factors[1] with a higher birth prevalence than neural tube defects, but lower than cardiovascular malformation.[2] OFCs include a range of congenital deformities most commonly presenting as cleft lip (CL) with or without cleft palate(CLP) or isolated cleft palate (CP).[3] OFC also involves structures around the oral cavity which can extend onto the facial structures resulting in oral, facial, and craniofacial deformity.[4] The mean incidence of CLP is 2.1 cases per 1,000 live births among Asians, one case per 1,000 live births among white people, and 0.41 cases per 1,000 live births among African people.[5] In India incidence is 27,000–33,000/year, i.e., 78 infants/day or 3/h.[6] Generally, boys are affected more than girls with a ratio of about 3 : 2.[6] Males are more likely than females to have a cleft lip with or without cleft palate, while females are at a slightly greater risk for cleft palate alone.[7]

CLP is a multi-factorial birth disorder that can be associated with hereditary factors and environmental factors; folic acid deficiency, maternal smoking, alcohol consumption, and medications.[8] CLP can occur isolated or together in various combination and/or along with other congenital deformities particularly congenital heart diseases. They are also associated features in over 300 recognized syndromes.[9] The condition - CLP is typically identified in utro by 2D or 3D ultrasound. Early detection allows time for parental education about the potential causes of the CLP and procedures that the child may need after birth.[10]

Patient with OFC deformity require treatment at appropriate time to achieve functional and aesthetic well-being.[11] If not treated appropriately in a timely manner, those with CLP experience life-long difficulties in food intake, speaking, hearing, self-esteem, and psychosocial relationships. The earliest intervention in those with CLP starts during the first few weeks of life. An overview of the timeline of interventions for the CLP patient is presented in Table 1.[12] The treatment process is complex, multidisciplinary and involves interdisciplinary approach. Successful management of the child born with a cleft lip and palate requires coordinated care provided by a number of different specialties including oral/ maxillofacial surgery, otolaryngology, genetics/dysmorphology, speech/language pathology, orthodontics, prosthodontics etc

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Several modern presurgical orthopedic methods have been introduced to treat CLP, beginning with McNeil in 1950, followed by Georgiade and Latham, Hotz et al. Matsuo et al. and Nakajima et al.[15-19] In 1993, Grayson et al. described Presurgical Nasoalveolar Molding (PNAM), which addressed not only the alveolus but also the lip and the nose.[20] Some other methods to do that in current practice include maxillary plates, the Latham device[21], lip taping and Alveolar molding.[22] Among them PNAM technique has been shown to significantly improve the surgical outcome of the primary repair in CLP patients compared to other techniques of presurgical orthopaedics.[23]

PNAM is the nonsurgical, passive method of bringing the gum and lip together by redirecting the forces of natural growth. The nasal stent incorporated allows for correction of the flattened nose prior to surgery and facilitates nose repair at the time of lip repair.[24] The principles of PNAM therapy are based on Matsuo's concept (1984) that the nasal cartilage continues to develop and is subject to repositioning till the first 6 weeks of life. This is due to the presence of maternal estrogen in the infant till 6 weeks which increases the cartilage content of hyaluronan, a component of the proteoglycan extracellular matrix, thus increasing the moldability of the nasal cartilage[25] (Fig 1).[26]

PNAM provides the surgeon with a superior basis for the repair of the defect. The objectives of NAM are to provide symmetry to severely deformed nasal cartilages, achieve projection of the flattened nasal tip, provide nonsurgical elongation of the columella, improve alignment of the alveolar ridges, and reduce the distance between the cleft lip segments.[27] So, to get excellent results with PNAM, treatment of infant should be started early after birth.[28]

CASE REPORT :-

A Female child, aged 1 day, with unilateral CLP, was referred to the department of Pediatric and preventive dentistry, NPDCH, Visnagar by paediatrician for feeding appliance. The birth weight of the baby was 3 kg and medical and family history of the parents was noncontributory.

On examination, unilateral cleft involving lip, alveolus, palate till uvula, greater segment in the anterior region, collapsed left nasal rim, and deviated nasal septum toward left side were noted [Fig 2]. After thorough evaluation, PNAM Therapy was planned for the patient. The complete procedure of PNAM, along with the recall appointment schedule was described to the parents and consent and cooperation was obtained from them to initiate the active molding therapy.

The initial intraoral impression was made with Polyvinyl silicone material in Pediatric Intensive Care unit in the presence of anaesthesiologist. During impression making infant was awake, Cring and held in mother's lap with her head facing downward and her chest and lap region was supported by mother's hand. At the same visit feeding plate was fabricated (Fig 3) and inserted with instructions for use. At the second visit, 2 days later NAM appliance fabricated on the initial cast. Handle of 5 mm in length and 8 mm diameter, with slot to attach orthodontic elastics was fabricated and positioned anteriorly at an angle of 40° to the plate to the imaginary occlusal plane. First base tape (Tegaderm; 3M ESPE, St. Paul, MN), was placed over the cheeks of patient to avoid irritation to tissues. Then according to Grayson technique NAM appliance was inserted and the lip segments were approximated by applying micro pore tape. To achieve required forces- approximately 100gm, orthodontic elastics (0.25 inch diameter) were incorporated into tape and placed on check at 45^{o} angle.

The patient was then recalled weekly. Modification in tray and tape performed at follow-up visits as required. Regular change of elastics and tape advocated. In addition it was clearly conveyed to mother, the procedure for breast and bottle feeding the child with NAM appliance to reduce the regurgitation of milk and other complications. Excellent motivation and cooperation from parental side enabled achievement of significant approximation of the lip and alveolar segments in period of 3 weeks. After that, the stage of active nasal moulding was instituted with the help of nasal stent(Fig 4). The patient was evaluated regular intervals and the appliance was activated as prescribed.

At the end of 2 ½ months, there was reduction in the alveolar cleft from 15 mm to 7 mm (Fig - 6) and in lip cleft from 21mm to 3 mm (Fig -7). Repair of CL through surgery (Chelioplasty) is scheduled, after patient completes 3 months of age by the Oral and Maxillofacial Surgeon.

DISCUSSION :-

CLP is the most common congenital developmental deformity that occurs in the soft and hard palate.[29] Cleft lip is The failure of fusion of the frontonasal and maxillary processes, resulting in a cleft of varying extent through the lip, alveolus, and nasal floor (an incomplete cleft does not extend through the nasal floor, while a complete cleft implies lack of connection between the alar base and the medial labial element) and Cleft palate is the failure of fusion of the palatal shelves of the maxillary processes, resulting in a cleft of the hard and/or soft palates.[30] Clefts arises during the fourth developmental stage. Exactly where they appears is determined by locations at which fusion of various facial processes failed to occur, this in turn is influenced by the time in embryologic life when some interference with development occurred.[31]

Different techniques and management guides have been described for the early rehabilitation of the alveolar clefts. They include presurgical orthopedics, which is important for creating and preserving normal functions.[32] The presurgical NAM introduced by Grayson, consists of active molding of alveolar process as well as the surrounding soft tissues and nasal cartilage.[20] The main objectives of the PNAM technique involve repositioning of the deformed nasal cartilage and alveolar segments. The benefits of PNAM include- the improvement in arch form, ease of surgical repair, better aesthetic outcome, facilitation of feeding, and improvement of speech.[33] The long-term benefits of NAM include better arch form, improved chances of tooth eruption with good periodontal support, reduced need for revision surgeries and most importantly better psychosocial status of the patient.[34]

In the present case, at the completion of the PNAM therapy significant reduction of cleft lip was observed (From 21 to 3mm). Micro pore tape with the orthodontic elastic exert the force on lip and alveolus. Thus, closer approximation of segments, resulting in reduction in the volume of deformity, was achieved.[35] Baek et al(2006), used 3D analysis and found that the cleft gap was significantly reduced after PNAM.[36] Ezzat et al (2007), observed a significant reduction in the distance of displaced segments and increase in the maxillary arch width.[37] Thakur S et al (2018) reported, at the completion of the PNAM therapy significant reduction of the alveolar and palatal gap was observed. They also achieved significant improvement in nasal symmetry and columellar length, consequently improved nasal aesthetics.[38]

In present case after 2 ½ months of NAM therapy, Reduction in alveolar cleft (from 15 to 7 mm) and improved alignment of segments was observed . Aboul Hassan et al. (2010) Evaluate the outcome of NAM therapy in UCLP patients and found similar result Statistically significant decrease in intersegment alveolar cleft distance (narrowing by more than 3.3 mm).[39] Pre-surgical reduction of the alveolar cleft gap facilitates the performance of gingivoperiosteoplasty with to the probability of forming an osseous bridge. Reduction in alveolar cleft improvement, reduces the number of surgical revisions for oronasal fistulas and nasal deformities and also increases the bone bridges across the cleft, thus the adult teeth have a better chance of erupting in a good position with adequate periodontal support.[40] Santiago et al[41] and Ross and MacNamera[34] found that patients who underwent NAM did not require secondary bone grafting.

Conclusion :-

Presurgical orthopedics treatment is efficient in the rehabilitation of cleft children as it allows for early redirection of the affected bony elements and soft tissues to a favourable anatomic position. In present case PNAM therapy has achieved reduction of cleft lip , increased height and width of columella and contouring of alar cartilages thereby facilitating improved surgical intervention to achieve better esthetics.

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Table 1 :- Timeline of interventions for the CLP patient[12]

Patient Age	Intervention
Prenatal period– birth	Prenatal counselling for parents
	Genetic Counseling
	Nutrition & Feeding
0- 3 months	Nutrition and Oral Hygiene
	Presurgical Infant Orthopedics (PSIO)
3-6 months	Oral Hygiene
	Cheiloplasty (Lip repair), Primary rhinoplasty
6 – 18 months	Oral Hygiene & dental care
	Speech and Language Development
	Palatoplasty (Palate repair), Myringotomy (By ENT
3 – 5 years	Speech evaluation and investigations (Nasometry, Nasoendoscopy or Video fluoroscopy)
	Velopharyngal insufficiency (VIP) correction & Prosthetic Management of VPD
6 – 12 years	Alveolar bone grafting with autogenous iliac bone graft
	Orthodontic Care
15 – 20 year	Orthognathic surgery
	Definite rhinoplasty and other touch up procedures
	Lip/Nose Revisions

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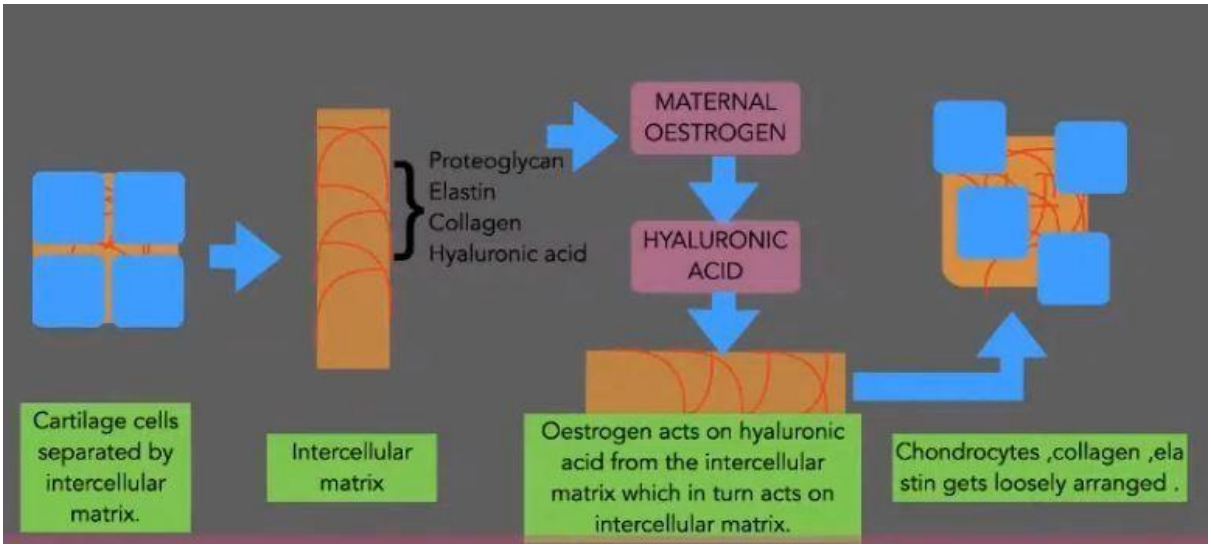

Fig 1 :- Principle on which NAM therapy work[26]

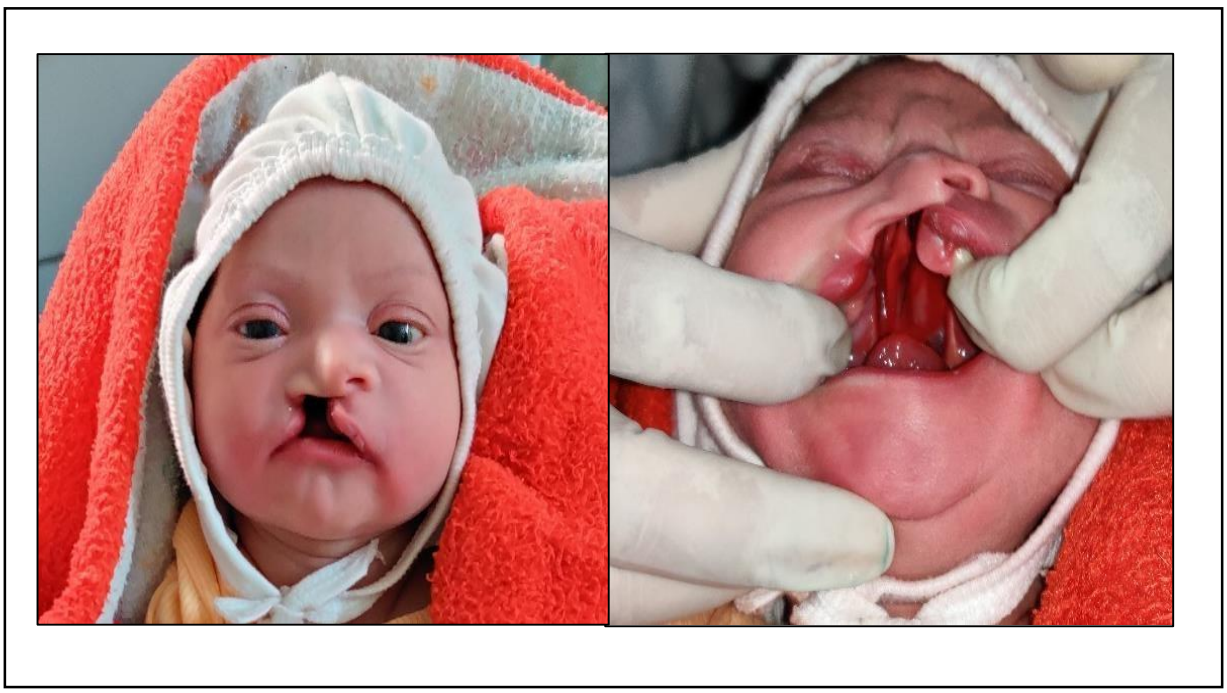

Fig. 2:- Pre-Operative Photograph

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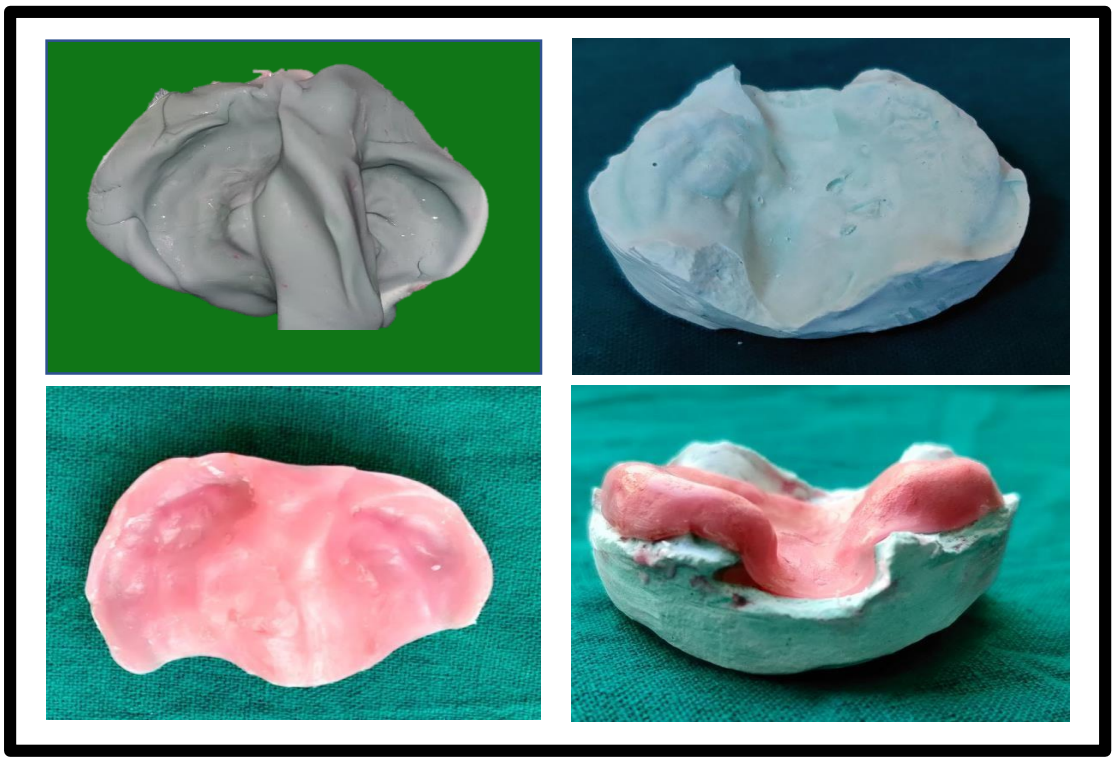

Fig. 3:- Fabrication of feeding plate

Fig. 4:- NAM appliance with Nasal stent

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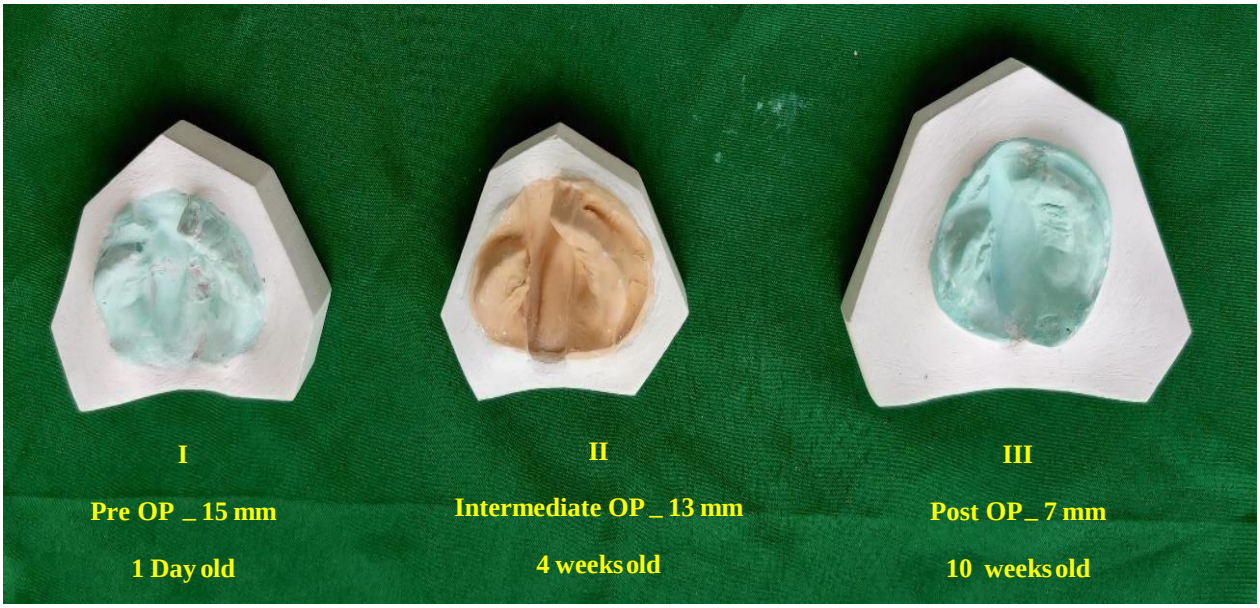

Fig. 5:- Improved approximation in alveolar segment

Fig. 5:- Pre-operative and Post-operative

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5

PRF : A POTENTIAL BIOMATERIAL

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ABSTRACT:

Over the past decade, PRF (Platelet rich fibrin) has gained tremendous momentum having been utilized for a variety of dental and medical procedures. In the dental field PRF has been utilized for the treatment of extraction sockets, gingival recessions, palatal wound closure, regeneration of periodontal defects, and hyperplastic gingival tissues. In other medical fields, PRF has been utilized for the successful management of hard-to-heal leg ulcers, and chronic leg ulcers. Furthermore, hand ulcers, facial soft tissue defects, laproscopic cholecystectomy, deep nasolabial folds, facial defects, superficial rhytids, acne scars, liposturcture surgical procedures, chronic rotator cuff tears, and acute traumatic ear drum perforations have also been treated with PRF. Reported advantages include faster wound healing, faster angiogenesis, low costs, and complete biocompatibility.

Alveolar bone loss requires numerous regenerative techniques. As a supplement to the procedures of tissue regeneration, a platelet concentrate called PRF was tested for the 1st time in France by Dr. Choukroun in 2001. This article enriches the benefits and role of plasma-rich fibrin in the field of oral and maxillofacial surgery. Platelet-concentrate fibrin is an evolution of the fibrin glue, which is widely used in the oral surgery.

KEYWORDS: Platelet Rich Fibrin, growth factors, wound healing.

5 PRF : A POTENTIAL BIOMATERIAL

INTRODUCTION

The current perspective is that regenerative surgical therapies to date can only restore a fraction of the original tissue volume[1] and have a limited potential in attaining complete tissue restoration[2]. Various biomaterials have been used for tissue regeneration in addition to autogenous and allogenic bone grafts but not a single graft material is considered as gold standard for the treatment of intrabony defects. Wound healing requires a sequence of interactions between epithelial cells, gingival fibroblasts, periodontal ligament cells, and osteoblasts.

The disruption of vasculature during wound healing leads to fibrin formation, platelet aggregation, and release of several growth factors into tissues from Platelets[3] through molecular signals which are primarily mediated by cytokines and growth factors. There is evidence that the presence of growth factors and cytokines in platelets play key roles in inflammation and wound healing.[4] Platelets also secrete fibrin, fibronectin, and vitronectin, which act as a matrix for the connective tissue and as adhesion molecules for more efficient cell migration.[5] This has led to the idea of using platelets as therapeutic tools to improve tissue repair particularly in periodontal wound healing.

Oral tissue has the capacity for repair and regeneration. Repair implies healing after surgery. The regeneration of the oral tissues is dependent on four basic components. The appropriate signals, cells, blood supply and scaffold needed to target the tissue at the defect site. All these elements play a fundamental role in the healing process and in the reconstruction of the lost tissue. The cells provide the machinery for new tissue growth and differentiation where as the growth factors or morphogens modulate the cellular activity and provide stimuli to the cells to differentiate and produce matrix for the developing tissue. The new vascular networks provide the nutritional base for tissue growth and homeostasis. Finally, scaffolds guide and create a template structure threedimensionally to facilitate the above processes required for tissue regeneration.[6]

5 PRF : A POTENTIAL BIOMATERIAL

Platelets are anucleate cytoplasmic fragments derived from bone marrow megakaryocytes and measure 2–3 mm in diameter. They contain many granules, few mitochondria and 2 prominent membrane structures, the surface connected canalicular system and the dense tubular system. The α - granules are spherical or oval structures with diameters ranging from 200 to 500 nm each enclosed by a unit membrane. They form an intracellular storage pool of proteins vital to wound healing, including platelet-derived growth factor (PDGF), transforming growth factor (TGFb), and insulin-like growth factor (IGF-I). The α - granules fuse with the platelet cell membrane after activation. Numerous techniques of autologous platelet concentrates have been developed and applied in oral and maxillofacial surgery. These techniques finally lead to a fibrin and platelet concentrate for topical application.

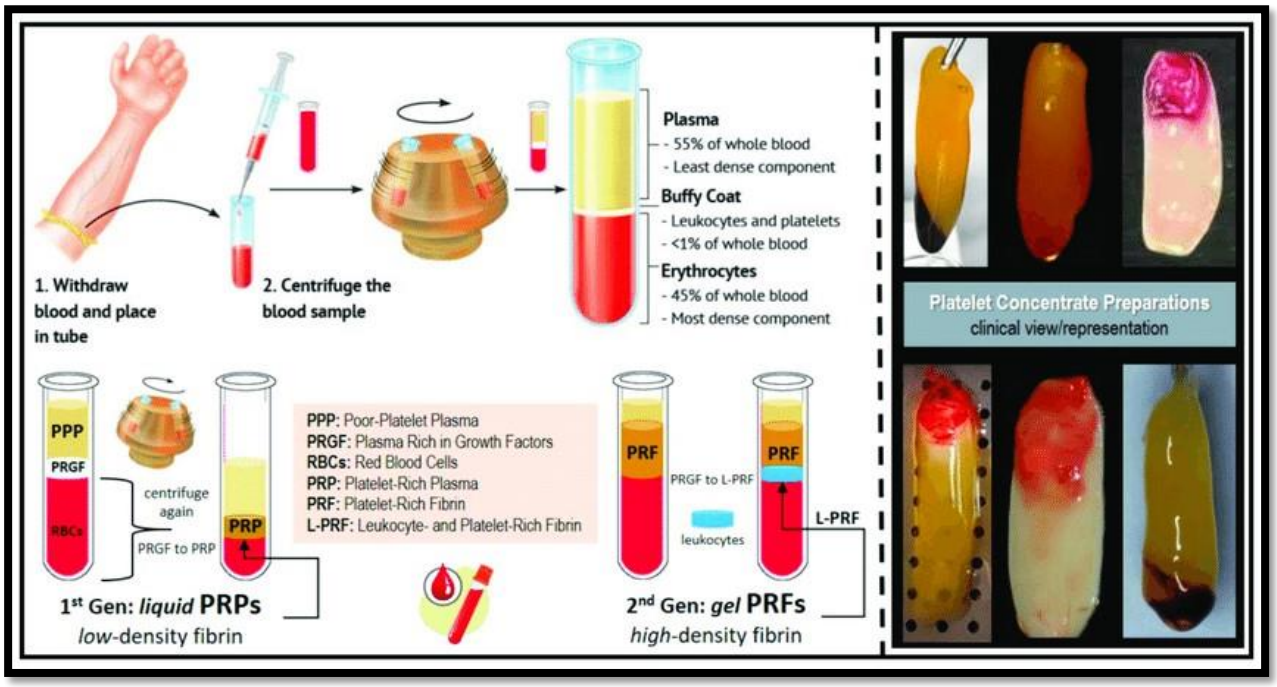
PRF AND ITS PREPARATIONS

PRF was first developed in France by Choukroun et al. for specific use in oral and maxillofacial surgery. This technique requires neither anticoagulant nor bovine thrombin (nor any other gelling agent).[7]

The PRF protocol is very simple : A blood sample is taken without anticoagulant in 10-mL tubes which are immediately centrifuged at 3000 rpm (approximately 400g according to our calculations) for 10 minutes. The absence of anticoagulant implies the activation in a few minutes of most platelets of the blood sample in contact with the tube walls and the release of the coagulation cascades. Fibrinogen is initially concentrated in the high part of the tube, before the circulating thrombin transforms it into fibrin. A fibrin clot is then obtained in the middle of the tube, just between the red corpuscles at the bottom and acellular plasma at the top.

In brief, the PRF protocol makes it possible to collect a fibrin clot charged with serum and platelets. By driving out the fluids trapped in the fibrin matrix, practitioners will obtain very resistant autologous fibrin membranes.[8]

PRF : A POTENTIAL BIOMATERIAL



CLINICAL APPLICATIONS:

The vast benefits of PRF have led to its applications in different fields of medicine and dentistry.[5, 9]

- Ear, nose, throat and plastic surgery.
- Oral and maxillofacial surgery,
- Pre-implant and implant surgery.

Oral applications :-

- PRF and PRF membrane have been used in combination with bone grafts to hasten the healing in **lateral sinus floor elevation procedures.**
- Protection and stabilization of graft materials during **ridge augmentation procedures.**
- **Socket preservation** after tooth extraction or avulsion.
- PRF membrane has been used for **root coverage** with single and multiple teeth recession.
- Regenerative procedures in treatment of 3-walled **osseous defect**.
- In the treatment of combined **periodontic endodontic lesion**.
- Treatment of **furcation defect.**
- PRF enhances **palatal wound healing** after free gingival graft.
- Filling of **cystic cavity**.

Extra-oral clinical applications :- [8, 10]

- To augment Achilles tendon repair.
- PRFM can provide significant long-term diminution of deep nasolabial folds.
- Application in facial aesthetic surgery :-

  - Facial volumization,
  - Superficial rhytides,
  - Acne scars,
  - Rhinoplasty,
  - Facial esthetic lipostructure,
  - Hair transplant and re-growth,
  - Autologous fat transfer,
  - Rhytidectomy,
  - Depressed scar,
  - Dermal augmentation.

- Healing of severe nonhealing lower-extremity ulcers.
- Repair of articular cartilage defects.

The most widespread use of PRP-clots is in dentistry and oral maxillofacial surgery. Platelets are activated at tooth extraction sites as a natural consequence of vascular disruption. There is substantial evidence that bone regeneration can be enhanced by positioning an additional source of autologous platelets in a fibrin clot at the extraction site and/or around the implant. Alternatively tried treatments include the application of recombinant bone morphogenetic proteins (BMPs) or growth factors. [16]

5 PRF : A POTENTIAL BIOMATERIAL

Autologous platelet gel was first used by Whitman et al. in reconstructive oral and maxillofacial surgery and as an adjunctive procedure related to the placement of osseointegrated titanium implants. Marx et al. (evaluated the effect of autologous PRP during bone graft reconstruction of mandibular continuity defects. PDGF and TGF-β from platelets were shown to have been adsorbed onto the grafts and it was concluded that addition of PRP accelerated the rate and degree of bone formation. In these and subsequent studies, platelets were hypothesised to provide a concentrated and directed supply of growth factors that stimulated migration and maturation of mesenchymal and epithelial cells. Autografts, allografts, xenografts and alveolar ridge augmentation procedures remain ways of increasing bone density in difficult cases, but even here the use of autologous platelets can positively affect the outcome. Thus with PRP, radiographically, significant amounts of new bone were visible as early as 2 months postoperatively.

PRP is also thought to accelerate soft tissue healing by promoting a more rapid revascularization and also the re-epithelialisation of flaps caused by the surgical incision. The use of deproteinated bovine bone and PRP has been successfully tried in maxillary sinus augmentation with simultaneous insertion of endosseous implants

Clinical evaluations of healing in an extraction socket filled with PRF used in alveolar preservation techniques in order to preserve the dimensions and accelerate bone and soft tissue healing. After the four-month healing period, post-extraction alveoli are filled with a mature bone. The dimensions of the alveolar ridges are almost preserved, with the minimal ridge width loss of 7.38% and height loss of 7.13%. In the studies in which resorbable membranes and bone grafts were used, resorption values of 17.79% of height and 11.59% of width were identified, in some studies even higher.

Fig. 1 :- Extraction socket filled with PRF membrane and sutured.

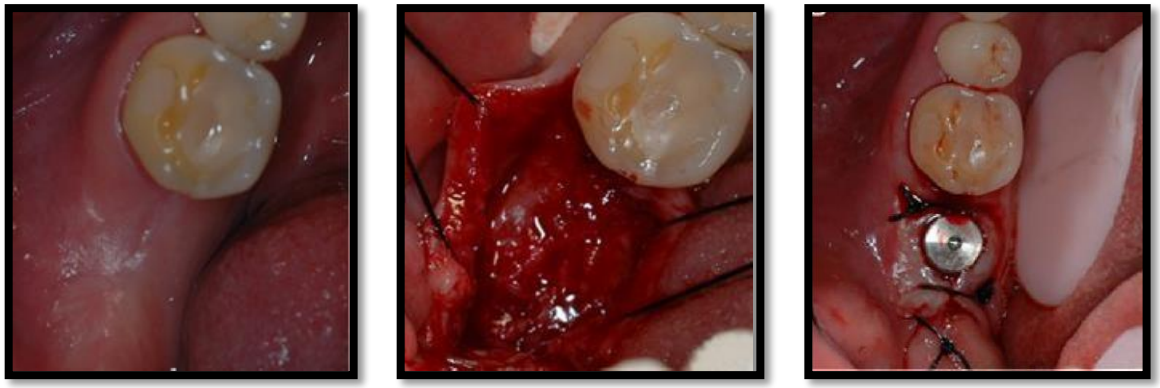


Fig. 2 :- Bone formed after 4 months and implant placement.

In case of massive cystic ablation:

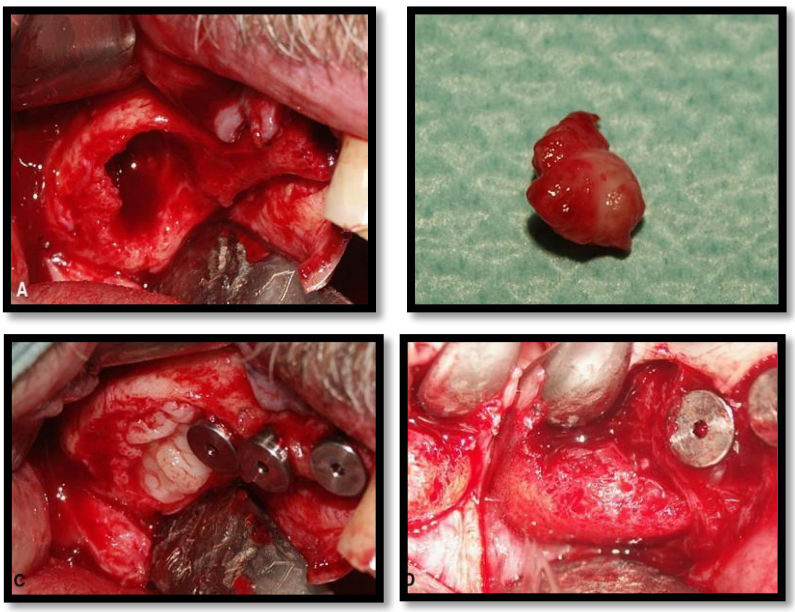


Fig 3 :- During massive cystic ablation of the maxillary (A and B), residual cavity is filled with PRF (C). Two and a half months later, the osseous defect is replaced by a dense and cortical bone (D) instead of the average 10 months naturally. The use of PRF allows acceleration of the physiologic phenomena.

Applying PRF membrane over the lateral window PRF membrane can be applied instead of the resorbable collagen membrane through the lateral window in order to prevent the invagination of the mucogingival tissue. It is beneficial because of being economically acceptable as an autologous biomaterial and because of being biologically active since it releases growth factors which accelerate soft tissue and bone healing.

Plastic surgery :-

Autologous platelets are especially useful for the soft tissue and bony reconstruction encountered in facial plastic and reconstructive surgery. [17] Their use results in a decrease in operative time, necessity for drains and pressure dressings, and incidence of complications. Reduced infections and length of hospital stay in plastic surgery was the conclusion of Valbonesi et al. who used autologous fibrin-platelet glue in 14 patients with skin and soft tissue losses caused by recent trauma or chronic pathology.

PRF : A POTENTIAL BIOMATERIAL

Hair transplant and regrowth :-

In hair follicles, reduction in the anagen phase of hair cycle leads to the entry of hair earlier into the telogen phase.[18] Platelet-rich plasma (PRP) helps in tissue augmentation by activating platelets and releasing large amounts of platelet-derived growth factors (PDGFs) which act on stem cells of the follicles, stimulating the development of new follicles and promoting neovascularisation.[19,20] By taking this clinical significance of PRP, a study was planned on 40 male patients and results were statistically significant, for evaluation of PRP in growing and healing hair after follicular unit extraction (FUE) hair transplant.[21] Intra-operative injectable PRP therapy is beneficial in giving faster density, reducing the catagen loss of transplanted hair, early recovery of the skin, faster appearance of new anagen hair in FUE transplant subjects and also activating existing dormant follicles.

Wound healing (ulcers) :-

As early as 1990, autologous human platelet-derived wound healing factors (HPDWHF) were proposed to regulate wound healing of recalcitrant skin ulcers by promoting the formation of granulation tissue in the early healing phase. [22] This conclusion was based on studies on 23 patients with 27 skin ulcers who had shown no signs of healing after an average period of 25 weeks conventional wound care.

Orthopedic surgery :-

Autologous growth factor concentrate (AGF) prepared by ultra concentration of platelets is being used in patients undergoing lumbar spinal fusion. As with bone regeneration around titanium implants, the hypothesis is that platelets release multiple growth factors having a chemotactic and mitogenic effect on mesenchymal stem cells and osteoblasts and therefore accelerate bone healing.[23]

Eye surgery :-

A novel potential use of platelets is in retina repair. In a double masked randomized trial on 110 French patients undergoing surgery for stage 3 or 4 idiopathic full-thickness macular holes, half of the patients additionally received an injection of autologous platelet concentrates. One month after surgery, the anatomic success rate for hole closure was significantly greater for those receiving platelet concentrates.[24]

Tendon and ligament repair :-

A recent case report involving our laboratory has suggested that injecting calcified autologous PRP may facilitate anterior cruciate ligament reconstruction and reattachment of knee articular cartilage in man. A role for endogenously released growth factors including IGF-1, TGF-β, VEGF, PDGF and bFGF in tendon and ligament healing is well documented.[25]

Conclusion:

The promotion of bone healing by PRP-clots has interested orthopaedic surgeons while in dentistry they are used as an aid to implantation as well as in oral and maxillofacial surgery. In this latter context, their use is becoming worldwide. The use of PRF in regenerative medicine has now seen a huge increase in its use across many fields of medicine due to its ease of use and low costs while providing a completely autologous source of growth factor delivery. Recent modifications to the centrifugation speeds and times (A-PRF) further enhance its regenerative potential and bring to clinical practice a liquid formulation that is injectable during use (i-PRF). Future strategies are continuously being developed to further improve the clinical outcomes following regenerative procedures utilizing platelet concentrates.

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6 THE MINIMALLY INVASIVE SURGICAL TECHNIQUE FOR ROOT COVERAGE FOR THE TREATMENT OF GINGIVAL RECESSION DEFECTS: A CASE SERIES

Authors: Dr. Dhar Thaker, Dr. Krishna Shah, Dr. Rajvee Thaker, Dr. Setu Shah

ABSTRACT:

The increasing aesthetic demands from patients have required that clinicians sharpen their skills and adopt newer and more novel techniques to satisfy these demands. In periodontal therapy, periodontal plastic surgery poses a substantial challenge to the clinician, as it is technique sensitive and also because it includes a wide array of procedures and their variations. Conventional plastic procedures have provided satisfactory results in the treatment of gingival recession but there is, presently, a greater need for more advanced procedures that cause less surgical morbidity and also provide improved results.[1] Minimally invasive surgery has been harnessed in periodontics for this purpose and has been extensively used in multiple indications, including root coverage which applies the principles of minimally invasive surgery to provide satisfactory results in root coverage.

AIMS AND OBJECTIVES OF THE STUDY:

AIM OF THE STUDY:

- Clinical appraisal of the efficacy of minimally invasive surgical technique for root coverage in the treatment of Miller's CL-I, CL-II gingival recession defects with bioresorbable collagen membrane

OBJECTIVES OF THE STUDY:

- To evaluate the difference in measurements of recession depth & recession width with bioresorbable collagen membrane at baseline, 3 months & 6 months.
- To estimate the difference in measurements of width of keratinized gingiva at baseline,3 months & 6 months.
- To measure the Clinical Attachment Level(CAL) at baseline, 3 months, & 6 months
- To judge the efficacy of the minimally invasive surgical technique for root coverage by means of calculating the percentage of root coverage in the Millers CL-I, CL-II gingival recession at baseline, 3 months & 6 months.
- To estimate the difference in measurements of gingival phenotype at baseline, 3 months & 6 month.

6 THE MINIMALLY INVASIVE SURGICAL TECHNIQUE FOR ROOT COVERAGE FOR THE TREATMENT OF GINGIVAL RECESSION DEFECTS: A CASE SERIES

CASE SERIES:

The present study was a clinical appraisal, conducted at the Department of Periodontics and Oral Implantology in Ahmedabad dental college and hospital. A total of 20 patients were selected for the study of age ranging 18 years and above, who met the inclusion criteria of the study. The present study was conducted with the aim to evaluate the clinical efficacy of Minimally invasive surgical technique in patients with multiple gingival recession defects along with the use of Bioresorbable collagen membrane. Patients having Millers Class I and Class II gingival recession defects in maxillary esthetic zone were selected for the study. Each patient was planned to examine at baseline, post-surgically at 3 months and 6 months in terms of below mentioned clinical paarameters:

1) Recession Depth
2) Recession Width
3) Clinical attachment Level
4) Gingival Phenotype
5) Percentages of Root Coverage
6) Width of Keratinized Gingiva

The sample for the 6 months clinical study comprised of 108 surgical sites from 20 patients. Patients above the age of 18 years were included in the study with Millers class I (52.77%) or class II (47.22%) recession defects where 12 (60%) were male with mean age of 27.58 ± 4.69 years and 8 (40%) were female with mean age of 29 ± 5.09 years. Out of 108 Study sites, 15 (13.88%) were having selected tooth number 13, 20 (18.51%) having tooth number 12, 19 (17.59 %) having tooth number 11, 20 (18.51 %) having tooth number 21, 20 (18.51 %) having tooth number 22 and 14 (12.96%) was having tooth number 23.

SURGICAL APPROACH:

Initial preparation of recipient teeth includes thorough scaling and root planing, as well as odontoplastyto reduce any cervical prominences of roots that extend beyond the confines of alveolar housing.

On administering local anesthesia (2% lignocaine hydrochloride with 1:80,000 epinephrine), a minimal horizontal incision of 2-3 mm will be made in the alveolar mucosa near the base of vestibule, apical to recipient site. No vertical incisions will be given. Specially designed customized surgical instruments (ABS Gingival Elevator) will be inserted through the entry of incision to elevate full thickness flap which was guided by visualization of the shape and movement of the instrument through the mucosa and gingival tissue. The flap will then be extended coronally and horizontally toallow for elevation of the two adjacent papillae on each side of denuded roots. For stabilization of flap, a bioresorbable collagen membrane will be used which will be soaked in sterile water and tucked into sub gingival spaces under the papillae and the marginal soft tissue. Tissue tension will be created by distention or "pouching" of the flap will be sufficient in all cases to hold the membrane in place without sutures, surgical dressing, or tissue adhesive. Gentle digital pressure will be applied to the flap for approximately 5 minutes. The entry incisions will be left to heal by first intention, without suturing.

FIGURES:

Figure 1: Armamentarium

Figure 2: Instruments (ABS Gingival Elevators)

Figure 3: Bioresorbable collagen membrane (ColoGide™)

Figure 4: Pre-operative

Figure 5: Pre-operative right buccal

Figure 6: Pre-operative left buccal

Figure 7: Access incision

Figure 8: Flap elevation (within tunnel)

Figure 9: Elevation on central incisors

Figure 10: Elevation on lateral incisors

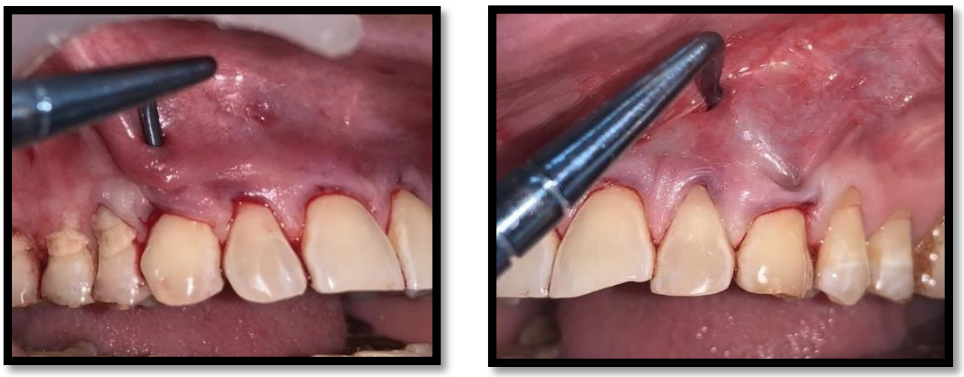


Figure 11: Instruments showing coronal pull on canines

Figure 12: After tunnel preparation

Figure 13: Insertion of BCM

Figure 14: Immediate postop right buccal

Figure 15: Immediate post-op left buccal

Figure 16: Immediate post-op

Figure 17: 3-months post-op

Figure 18: 6-months post-op

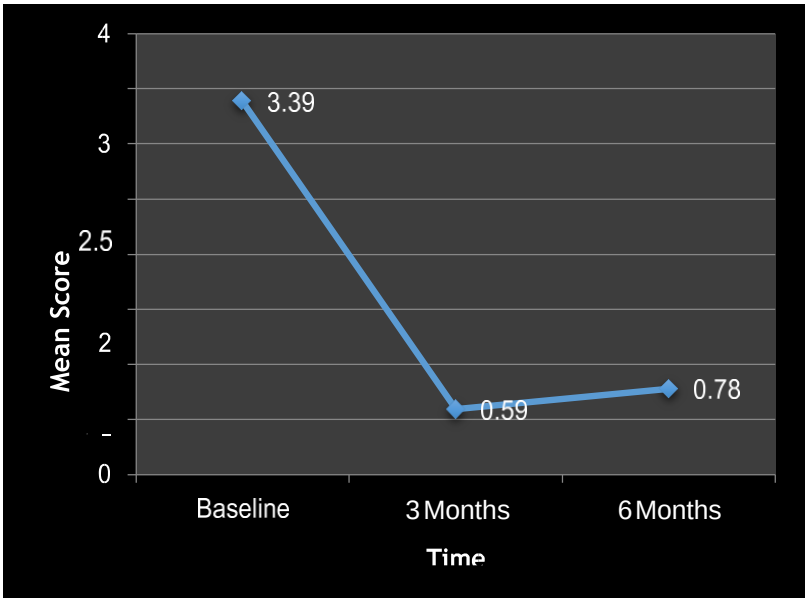
POST –OPERATIVE MANAGEMENT:

Patient will be discharged with all post-surgical instructions and medications for 5 days to avoid postoperative pain. Patient will be instructed to use 0.12% chlorhexdine gluconate. Patient will be instructed to use soft toothbrush for mechanical plaque control in surgical area. Patient will be monitored on weekly schedule postoperatively, to ensure good oral hygiene in the surgical area. Supportive periodontal maintenance at 3 months will be prescribed to maintain periodontal health and to re-evaluate this area. The patient was recalled at 1 month, 3 months and 6 months postoperatively for follow up.

Result:

GRAPH 1:

Recession Depth wise Distribution in Group (Repeated Measures ANOVA)

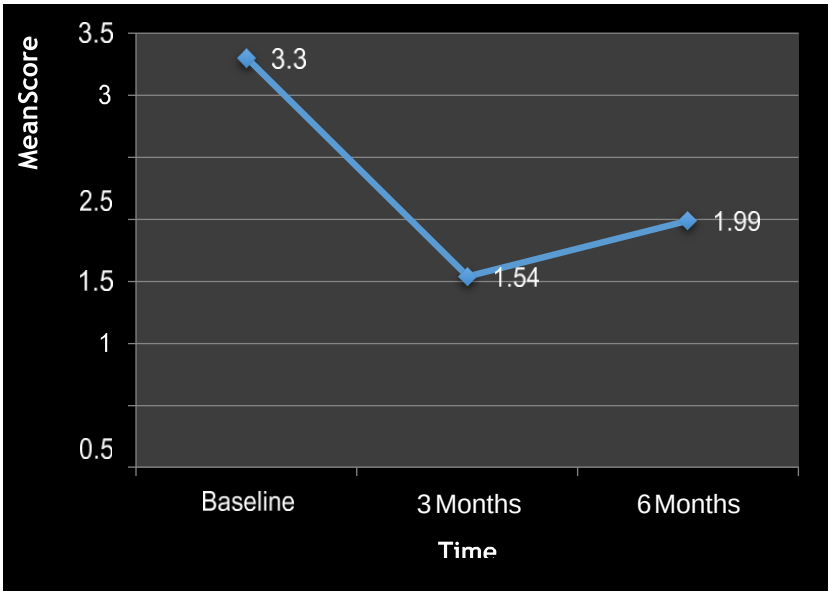


According **Graph 1**, Mean Recession Depth was 3.39 ± 1.32 mm at baseline, 0.59 ± 0.37 mm at the end of 3 months and 0.78 ± 0.48 mm at the end of 6 months. Statistically, significant difference was present in change of Recession Depth from baseline to 6 months.

($P \leq 0.05$).

GRAPH 2:

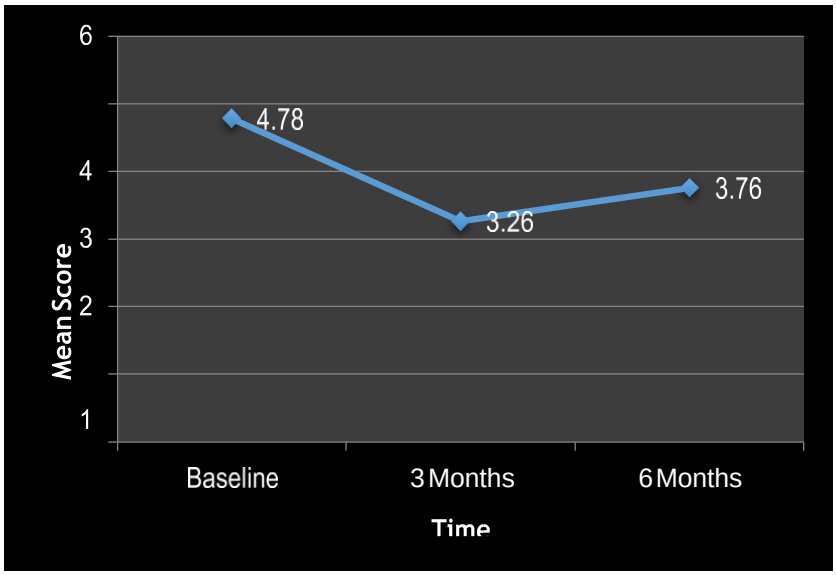
Recession Width wise Distribution in Group (Repeated Measures ANOVA)



According to **Graph 2,** Mean Recession Width was 3.30 ± 0.66 mm at baseline, 1.54 ± 0.76 mm at the end of 3 months and 1.99 ± 0.81 mm at the end of 6 months. Statistically, significant difference was present in change of Recession Width from baseline to 6 months. (P ≤ 0.05)

GRAPH 3:

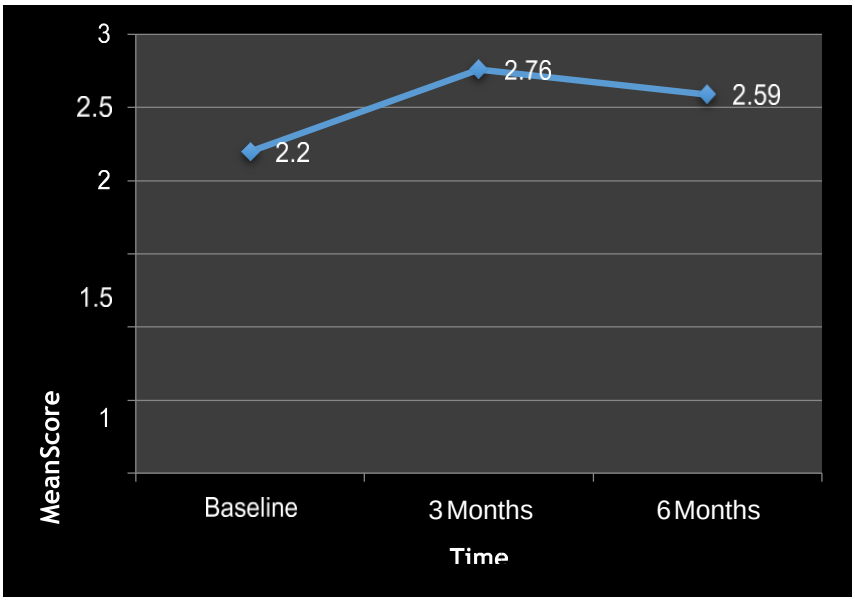
Clinical Attachment Level wise Distribution in Group (Repeated Measures ANOVA)



According to **Graph 3**, Mean Clinical Attachment Level was 4.78 ± 1.24 mm at baseline,
3.26 ± 1.26 mm at the end of 3 months and 3.76 ± 1.26 mm at the end of 6 months. Statistically, significant difference was present in change of Clinical Attachment Level from baseline to 6 months. (P≤ 0.05)

GRAPH 4:

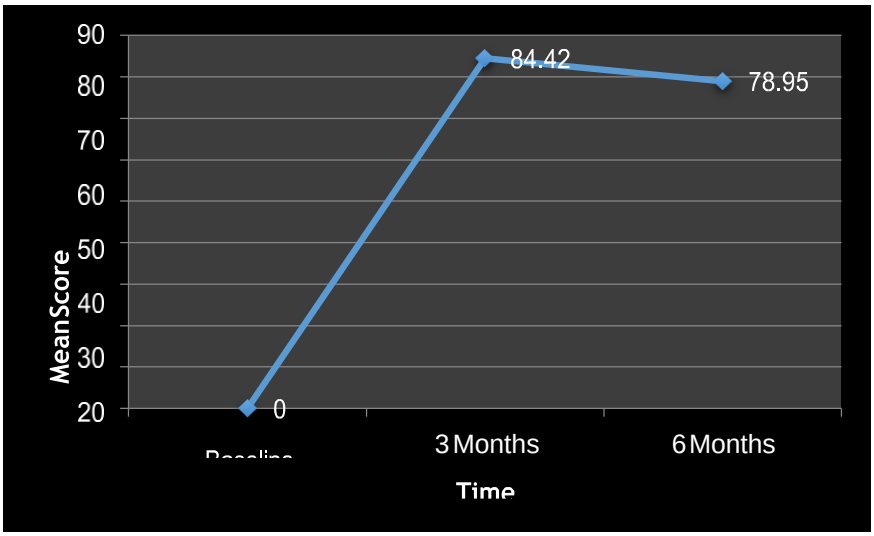
Gingival Phenotype wise Distribution in Group (Repeated Measures ANOVA)



According **Graph 4**, Mean Gingival Phenotype was 2.20 ± 0.42 at baseline, 2.76 ± 0.44 at the end of 3 months and 2.59 ± 0.52 at the end of 6 months. Statistically, significant difference was present in change of Gingival Phenotype from baseline to 6 months. (P ≤ 0.05)

GRAPH 5:

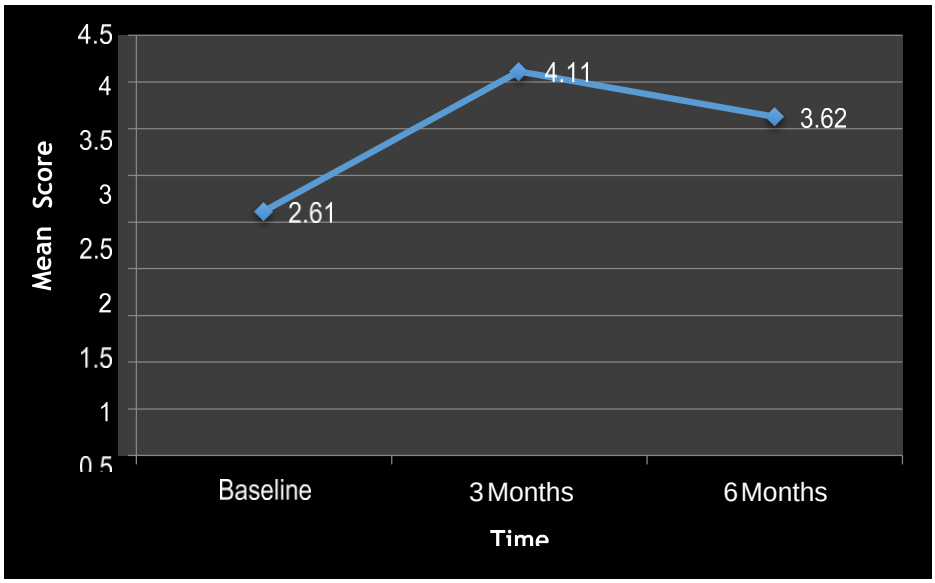
Percentage of Root Coverage wise Distribution in Group (Repeated Measures ANOVA)



According to **Graph 5** Mean Root coverage 84.42 ± 6.19 % at the end of 3 months and 78.95 ± 7.58 % at the end of 6 months. Statistically, significant difference was present in change of Root coverage from baseline to 6 months. (P ≤ 0.05)

GRAPH 6:

Width of Keratinized Gingiva wise Distribution Group (Repeated Measures ANOVA)



According to **Graph 6**, Mean Width of Keratinized Gingiva was 2.61 ± 0.58 mm at baseline, 4.11 ± 0.59 mm at the end of 3 months and 3.62 ± 0.58 mm at the end of 6 months. Statistically, significant difference was present in change of Width of Keratinized Gingiva from baseline to
6 months. (P ≤ 0.05)

DISCUSSION:

The minimally invasive technique appeared to be very promising in the management of multiple Miller's Class I and II recessions which resulted in highly esthetic root coverage outcome. The methods of assessing the outcomes of any surgical technique are of utmost importance. Without revaluation, it may be difficult to understand the predictability, effectiveness, and efficacy of a new procedure.

The ultimate goal of any root coverage treatment is also to assess the patient satisfaction and assessment of any technique should include postoperative problems of the patient. When it comes to the amount of postoperative pain after root coverage procedures, it was consistently seen that grafting procedures had higher amount of pain. Out of grafting methods, free gingival graft had a higher incidence of postoperative pain in the early wound healing period than CTG (Connective Tissue Graft) and there was no difference after 3 weeks. [2] At the same time, there was no difference in postoperative pain outcomes when free CTG was compared to subepithelial CTG (SECTG) [3]. A retrospective study of 18-month duration revealed that PST (Pin-hole Surgical Technique) is a very effective surgical technique to treat Miller's Class I and II type of MTR, wherein out of 121 sites of MTR (Marginal Tissue Recession) treated, there was MRC (Mean Root Coverage) of 94%. The amount of postoperative complications reported was minimal as pain in 37% cases, mild bleeding in 29% cases, and postoperative swelling in 32% of cases for duration of first 2 days. The study also revealed a high amount of patient satisfaction on the esthetic front with 95% of the patients highly satisfied. The mean number of analgesics taken by PST patients was found to be 1.7 ± 2.6. The mean number of days that the patients in this case series were on analgesics was for 4 days. The only complication noted after PST in this case series was postoperative edema which was severe on day 2 and reduced thereafter in 3 out of five patients. [4]

The advantage of this technique is that it overcomes some of the shortcomings of intrasulcular tunneling techniques used for periodontal root coverage. In this technique, access is made in the vestibule, where two small horizontal vestibular incisions can provide access to an entire region. The remote incision reduces the possibility of traumatizing the gingiva of the teeth being treated. [5]

Critical to the success of this technique is a careful subperiosteal closed blunt dissection that reduces the tension of the gingival margin during coronal advancement while at the same time maintaining the anatomical integrity of the interdental papillae by avoiding papillary reflection. Considerations of optimizing both blood supply and esthetics dictated a horizontally placed vestibular incision. In the maxillary esthetic zone, superior alveolar arteries, branches of the internal maxillary artery, run in a superior-inferior orientation. Therefore, a horizontally oriented initial incision will less likely disrupt the blood supply than vertically positioned incisions. Placement of the initial incision and a tunnel entrance within the maxillary alveolar mucosa results in no visible scarring, assisting in maximization of the esthetic outcome in this critical restorative area. A good vascular perfusion is the key point in any surgical procedure for faster healing. From an esthetic point of view, the vertical release incisions also lead to unesthetic keloid-like tissues along the incision line. Here, there is an additional biologic, esthetic, and time advantage wherein there is no disruption of the lateral vascular supply, no scar formation, and reduced time. An important technical difference between this technique and other tunneling approaches techniques of gingival augmentation is the degree of coronal advancement of the gingival margin advocated during the procedure. [6]

According to Saravanan Sampoornam Pape Reddy et al 2017[3], technique to stabilize the advanced tissues, collagen membrane was used by introducing into the pinhole and positioned at interdental papillae until there is sufficient fullness in the papillary tissues for self-holding the mucogingival tissue complex.

To improve the predictability of clinical outcomes of various periodontal surgeries as well as to enhance the soft and hard tissue healing, the use of collagen membrane has been advocated. Collagen is biocompatible and has got a hemostatic function (aggregates platelets) facilitating early clot formation and wound stabilization. It also has a chemotactic function for fibroblasts, which may aid in cellular migration to promote primary wound closure. It provides a collagenous scaffold for tissue repair as well as augmenting the gingival tissue thickness. Being semi-permeable, it permits gaseous exchange and nutrient passage to ensure better flap healing. Type I collagen membrane is easy to manipulate and is well tolerated by the patients with no negative response as regard to its post-operative healing as well as signs and symptoms of any other allergic manifestation. [7]

The biological principles of healing in root coverage procedures include histocompatibility, vascularization, wound contraction and wound sepsis. Hence, in this study we decided to implement a Type I bioresorbable collagen membrane which would help in the periodontal healing, without additional donor site morbidity. [8]

A statistically significant reduction in the Recession depth, Recession width, a gain in the clinical attachment level, Width of keratinized gingiva and thickness of keratinized gingiva was observed. Good significant gain in the percentage of root coverage was observed at the end of 6 months. Also the results showed that the treatment outcome in terms of percentage of root coverage is more favourable in Millers Class I than in Millers Class II gingival recession defects.

CONCLUSION:

This technique appeared to be very promising in the management of multiple Miller's Class I and II recessions which resulted in highly esthetic root coverage outcome. This case series evaluate clinically, the efficacy of the novel and minimally invasive surgical technique in combination with bioresorbable collagen membrane in the treatment of gingival recession defects.

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