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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

Greetings from HON. STATE SECRETARY

DR. GAUTAM MADAN

HON. STATE SECRETARY, IDA Gujarat State Branch

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My Dear Colleagues,

The dental profession is going through its most challenging phase right now due to covid.

It is said that when life throws a lemon at you, use it to make a lemonade. We can either get crushed by the problem or consider it as an opportunity.

So, while the covid epidemic has created lot of problems for us but at the same time it has presented us a unique opportunity.

Can we not use this crisis as a unique opportunity to review, reset and renew our clinic interiors, workflows, treatment protocols and treatment charges?

This can be the perfect opportunity to upgrade the dental profession of India to a whole new level.

As the crisis started, during the lockdown as well as in the initial unlock phases, we did see the germ of change in the way we practice, and the way we charge. But as cases are reducing and things are opening up, I see that things are going back to as it was pre-covid and there is a real danger that we will lose this opportunity; and the dental profession will be in a vicious down-cycle of cut-throat competition, competition mentality, use of average quality materials and constantly reducing charges and reducing quality of treatment.

Along with this, I would like to caution my colleagues: please do not get over-confident and underestimate the risk of covid and get lax in infection control and prevention procedures. I know a lot a dentists and their families that have been infected with covid. Thankfully, all have recovered, and I am not aware of any mortality in dentists due to covid; but not sure of the effect on their families and finances.

IDA Head office as well as IDA Gujarat state as well as our local branches have been proactively working for the benefit of dental profession during this pandemic and a lot of activities as well as initiatives have been carried out. Notable among that is the special covid supply portal of IDA HO where members can get high quality materials and equipment at highly competitive and discounted rates; as well as special customised covid insurance for members, staff as well as family members.

Let us unite and work together to make dentistry stronger and better.

Greetings from Editor

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ough times trigger human response of fight or flight depending upon individual attitude. At present we are in a unique situation where both responses would be tested equally .commitment towards augmenting and dispersing knowledge acts as a driving force for our team under such circumstances. As every night is followed by a gleaming sunrise so should these testing times also come to an end .This edition of the journal comprises yet another dimension outside the core field of dentistry which had to be addressed .Topics from the field too would add to your knowledge and be beneficial clinically. Stay safe and healthy Long live dentistry …

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1 MANAGING FINANCE for DENTISTS – Part I
The Current Scenario

Author: Dr. Bhavdeep Singh Ahuja

ABSTRACT

Being a dentist comes with an established set of financial baggage. We might be earning well into high six figures, but the fixed operational costs, sometimes running student loans, the ever changing technology, the cost of which is usually very high along with figuring out tax woes and saving for retirement needs to be managed on priority as the shelf life of a dentists' peak years is very less. Loans and debts taken for study, new clinical set up or for expansion eat into a dentist's income on monthly basis since we need to invest a lot in today's time to sit at a work place (clinic) which seems comfortable and looks hi-fi both to patients and us. Secondly, if we have loans and EMI's running into several big thousands and we suffer from poor debt management, we need to act surely and really fast. A realistic plan needs to be devised which can transform our monthly EMI's to monthly savings instead. As usual, there will be two ways to do this task, either do it ourselves by enlarging our knowledge database or seek the help of a genuine professional a.k.a. the financial consultant to get us back on track. EMI's take away from both our day to day income and savings and any acquired extra interest. Loans can seriously jeopardize the investment strategy and put a constraint on the retirement nest egg, thereby reducing our ability to build a fortune. The biggest effect will be on the tax outcome as we can't make use of the tax-effective investments which ultimately serve a double purpose of growing our wealth and reduce our tax liability over long term. There are various ways, means and strategies which can assist us in converting bad debt (non-deductible) into good (tax-deductible) debt. Just because dentists have a reputation for being bad with finances doesn't mean we are doomed to a life of debt and bankruptcy. The best way to beat the statistics is by getting a good financial adviser or become ourselves trained in these things. By doing either of these or by living within our means and saving a healthy sum for retirement, we can be successful with money like anyone. Good habits for saving have to be inculcated at an early age and maintained throughout the career.

A FEW POINTS TO PONDER

The medicine and dentistry as a profession is looked upon with great respect and in awe all over the world. It is a noble profession as doctors are looked upon like GOD to heal sickness, diseases, treat physical, mental trauma and relieve pain. Acquiring a doctor's degree is the result of loads of hard work in academics along with burning midnight oil coupled with many years of training costing their parents or them a fortune. Usually a bachelor's degree in dentistry or medicine takes about 5 – 5.5 years, but in today's fiercely competitive world that degree alone is not enough to have a successful career and many have to opt for a Master's degree like an M.D.S. or an M.D. which usually takes another 3 years. This isn't the end as well as there are specializations in various fields for doctors and for dentists as well including dental implantology, rotary endodontics, lasers to name a few. These specialized courses take time and are expensive as well. Some want to pursue higher studies abroad which make up an overall costly investment. Most doctors' friends are 22-23 when the latter finish their education, start working and earning a proper livelihood. In contrast, most doctors get free from education in their late 20's by 28-30 years of age. Doctors/Dentists also do need to keep updating their skills and educating themselves. So compared to other professions, a doctor/dentist invests overall a lot in his career and starts earning properly much later in life.

A common thought is that doctors are often neglectful with their money. They stack up loans, usually spend out too much of what they earn and hardly save for their retirement. After years of studying, exams and struggling on a tight student's life budget, they are ready to be extravagant when they earn well. Doctors have high salaries/incomes that they think it okay to spend accordingly and just because of that many of them spend their money on adventures that at least show them appearing richie-rich viz. nice vacations, expensive cars and a large house (sometimes on even further loans). A few common reasons which apply to doctors and where most people struggle include a lack of financial knowledge, poor financial regimen followed by them and a lack of vision of a long-term perspective. In addition, there is a bit of a culture within medical/dental colleges where there is hardly any talk about finance and its implications on the profession. Doctors are so used to being looked up to, that they find it difficult to seek out advice on anything. There is also the GOD complex as doctors are used to being the boss and people rely on them blindly.

It is difficult for them to trust someone else as asking for advice appears as a sign of vulnerability. Doctors are supposed to be self-assured and it is hard for them to appear weak to someone else, be it the financial advisors as well.

Let's focus our attention to our field now, DENTISTRY

ECONOMIC LIFECYCLE OF A DENTIST

We, the dentists usually start earning properly after the age of 28-30 years which is late compared to other professions. A dentist can either begin his career by assisting another dentist or by working in a private clinic or a hospital. This means we begin on a regular salary late and our social life and events are also delayed. A late marriage, late kids and long erratic working hours do influence our financial life a great deal. We usually don't have much time to concentrate on planning our finances as our earnings peak slowly between 35-45 years. Dentists don't have the advantage of continuing their practice for as long as possible like doctors because the work posture, long hours do take a toll on our back, neck and spine. Practice slows down a bit for some of us or starts cooling down after a few years in the practice as the fresher dentists start breathing down our throat and slowly start eating into our practice pie as they appear to be more in sync with current trends in dentistry and associated habits and also possess specialized degrees. A dentist like us, thus, can't be lax imagining that we have a very long career ahead of us. We should have a retirement age in mind and plan according to that. If we can continue even after that age, that is a bonus or we can decide the terms and conditions of our work which is a great advantage to have. Dentists' services never go out of demand whichever way the economy is going usually. Having plenty of disposable income for some earning handsomely also means those dentists are drawn more to the high-risk schemes which promise high returns and high tax savings. What all dental professionals should do is to identify their risk tolerance levels and manage their investments accordingly, preferably focusing on low risk investments initially. By investing in sync with our risk tolerance level, we would be able to generate stable income and minimize our tax deductions.

DENTISTS FINANCIAL QUOTIENT

Dentists or doctors in general are usually deemed intelligent having cracked some of the toughest entrance exams to get admissions in medical/dental colleges. Some of them, therefore, think they can make great monetary decisions too, but most of them make mistakes (read – blunders) leading to huge financial losses sometimes. Being high-income earners, dentists sometimes fall into the lure of living life lavishly and usually beyond their means. Be it a credit card installment or paying back the student loan installment, poor debt management habits quickly forge a significant problem for us. Many of us do not buy enough insurance at the right time to cover us and our family and sometimes, it is too late to realize this in life that our finances are not well controlled and managed. When we buy insurance at a later age, it becomes expensive. Some of us are smart enough to buy life insurance but then ignore disability insurance which is an important aspect of a dentist's life which further hurts the finances of the family. Some of us are in huge debts due to student loans or loans taken for setting up of our practice and don't know how to manage these loans. Tax is one of the grey areas for people like us, which involves a systematic and planned investment with a handsome retirement strategy, yet many dentists lack that coherent effort to build up a well defined tax strategy. Some dentists are over the roof when they see their figures of gross income per month failing to realize that a good chunk would go to taxation and the after tax position wouldn't appear that glossy and lucrative but, of course, can be dramatically improved with a well planned smart tax planning. Therefore, we can afford to take higher risks in our investment portfolio. Many of us are not aware of this and thus always over invest in low risk and low returns products. Some of these products are usually mis-sold to us by financial consultants or agents (most of them are usually our patients whom we start trusting blindly) who know our ignorance about such matters like the child future plans & pension plans. If the dentist does not have the time or the inclination for financial planning, he should invest in having a good financial planner who can manage his finances and give him sound investment advice as per his needs and pre-set goals. Earning a high income sometimes lures dentists into a false sense of security. While most earners have around four decades to plan and save for retirement, dentists due to the time they take to complete their graduation and post graduation and settling down and later, health issues starting taking a toll on our body

have less than a peak time of around two decades or even less, precisely 15-20 years. A perfect saving ratio should be 30% to 35% of our total income if we intend to retire at 55, or are forced to retire around this age and this has to be planned with a smart super-annuation and a tax strategy that involves maximizing higher contributions for the best possible tax outcome.

IRONY OF A DENTISTS LIFE

Doctors, in general, are one of the most esteemed professions. We are labeled as geniuses, seemingly unable to do anything wrong except when it comes to money. The irony is that we dentists don't follow the rules that we have instituted ourselves to first diagnose, understand the problem and then prescribe a proper treatment plan along with a preliminary apt medication. When it comes to finance, we prefer over the counter products. Many of us buy financial products without really understanding them as we are not in touch with this subject and due to lack of time, which is a case always with us; we rely on the insurance agent or the financial product seller who claim to take care of our investments whereas the fact is that they are just looking to increase their sales.

JOB VS. PRACTICE – DENTIST' S BIG DILEMMA

Dentists have to decide whether they want to set up their own practice or work in a hospital or do both simultaneously. Some do want to start their own clinic early which means getting into a business and which is a different ball game altogether. We need to see the pros and cons of each option and decide what works best for us. If one feels, he is not financially savvy but good in dentistry skills, he can set up a small private practice and be a consultant doctor in various clinics. Setting up a good practice is not easy. In big cities, there are numerous dentists with similar skills and each ones usually fight it out literally for the same target market. Fresher dentists face cut throat business wherein they start charging lower or gang-up against fellow fresh entrants in a hold to show their superiority. If you are a dentist setting up a new practice, you should devote time to starting of the practice and it should start before you finish your previous employment with consent from your current employer so that that you have a steady source of income initially. You can try understanding the financing aspect of the business (loans etc.) with the help of a finance expert too. You need to calculate how much capital you will need for setting up a practice and consider things like space required, where to set up the practice, cost of space, services offered etc. List the revenue and expenses to find out what will be the status of cash flow. We have to constantly upgrade our skills to beat competition and offer innovative and honest services to patients so that they are satisfied with the treatment that they receive. Many dentists are so busy managing the patient side of their practice that they end up neglecting the financial elements of their business while a few are just complacent about their finances. Regardless of the reason, not being on top of your practice's finances can lead to costly errors that damage your long-term financial situation and create a much higher tax liability than you would have otherwise envisaged. We see most of the dentists running helter-skelter on the call of their CA or financial advisor in March (the fag end of the financial year) to literally throw money (a hard earned one) in one scheme or the other just to save tax which is in fact, a very wrong strategy. According to a study by Govt. of India, 70% of the people who file their returns do not invest fully under Section 80C and a big chunk of those are the professionals like us.

Isn't that an irony that we slog day in and day out till late hours to earn those notes, which we hardly care to save for our rainy days or try to make the money further grow from accumulated or correctly invested money itself?

CHOICE BETWEEN THE RIGHT AND THE WRONG FINANCIAL CONSULTANT

All categories of dentists and doctors (beginners to experienced ones) can benefit from working with the right financial consultant and by beginners here, I means the ones with limited or fewer investments and assets. One of the biggest blunders committed by us (the dentists) is retaining the same financial consultant when our financial situation and practice outgrows our initial start up because so do our tax planning requirements and that is the time to change as our financial consultant's experience also outgrows. The routine financial specialist may lack the knowledge and skills to deal with dental fees and how to add income from multiple sources such as share basis, lease basis, salary and private practice, out-of-pocket gaps, or any other and all clubbed together even if they follow one basic method of accounting for us, along with the many complexities associated with running a dental practice. This can potentially lead us to be stuck with a heftier tax liability. There is a big dearth of our field or say dental financial consultants/specialists who are knowledgeable about the nuances of our field of working (inside our clinic) and also the allowable deductions for dentists, doctors and medical specialists. We need those guys who know more about tax-effective structures for dentists and doctors like service and investment trusts. Tax regulations are changing all the time and for dentists with their own practices and with many income-generating assets, tax returns can be a minefield. Due to these shortcomings, some dentists are tempted to prepare their own tax return but yes, lack of specialist knowledge of investments can most of the times make us miss out on opportunities for large tax savings. We are usually over-awed by TV ads of mutual funds (Sahi Hai, Yaar), to put in monthly investment as SIP (Systemic Investment Plan), but which fund, which types, how much amount, we don't know. That is where we peep on our friends', neighbours' and colleagues' investment portfolio without knowing their actuality of funds and tax structure and believe me friends, that is a very big hole to fall in. Your tax return should ideally be completed by a financial advisor or tax specialist with niche knowledge about our field (dental/medical). Some dentists (who make their own returns) neglect to claim small deductions which can gradually add up to large tax savings over the course of the whole financial year. Remember, you can claim a deduction on everything from hiring a chartered accountant or financial consultant to professional

membership fees, if we are going the conventional way and not the Section 44ADA way (more on this Section in later parts of this series). Smaller deductions usually include work-related car expenses, home-office expenses. Often it is just a matter of implementing the right record-keeping processes to generate accurate deduction amounts for these items; work with your accountant or financial advisor to ensure you are getting the most and the best out of your tax deductions.

Dentists also need sound financial advice just as much as anyone else, but they may be stumped about where to go to find it. We usually have many patients in the form of financial salespersons banging down our doors, but these people may not have our best interests in mind. We the dentists or doctors tend to assume that we are able to make sound financial decisions just because we are qualified to save teeth and lives respectively, but at the cost of repetition, we know by now that this line of logic for applying on financial field for us is faulty and we the dental and the medical professionals lack acumen in this area and desperately need to find a financial consultant who can sail us through in torrid and crunchy times.

HEALTH PROFESSIONALS LOVE REAL ESTATE ESPECIALLY WHEN BOTH ARE IN SAME PROFESSION (PRACTICE) – ONE OF THE MANY REASONS OF POOR FINANCIAL PLANNING

Many dentists and doctors in India invest in real estate for investment after setting up their practice and starting earning handsomely. We tend to be invested much overweight in real estate which is usually not a good idea. A part of that thinking goes on to believe that real estate is a safe bet as it will grow upwards only unlike stock market which can go downwards or crash anytime and secondly, it can be withdrawn as and when needed with no time based bond like a few mutual funds, market linked securities and debentures. We have to understand real estate is one of the asset classes and there will be periods of exacerbations & remissions (meaning over-performance and under-performance). The real problem is sometimes, when husband and wife, both are dentists/doctors; let us assume doing private practice (not in job) in separate outlets.

.A typical example of self-employed professionals earning very well but just well oiled earning machines only as, that is where the buck stops actually as they usually won't be doing any financial planning. Because of an overtly busy schedule, they usually won't be keeping a check on how much they earn because of variability in the monthly earnings (nothing is fixed in a private practice) and because of this usually, personal and professional expenses get muddled up.They do not have time for investment planning, tax planning etc. and end up making wrong investment choices at the fag end of financial year in March on just a verbal advice, hearsay or free advice or even worse, evade tax by hiding income. Many are so busy with turbulent working times that they don't have the time or inclination to spend time on managing finances. Such medico/dental couples need to take certain drastic steps like separating out personal and professional expenses, creating a budget with a high insurance cover for both and kids so that personal goals and professional expenses are taken care of in case of unfortunate events. Certain realistic financial goals like children's education, retirement plans have to be worked out with the help of a financial planner, if not by themselves and then have to realistically stride towards achieving the same by investing properly and reviewing their investments regularly. They have to take this stern decision of investments via financial advisor if they are not comfortable doing this on their own. Dentists/Doctors need to be in tune with the current technological advancements, trends and changes, to stay updated with the latest technologies and to keep updating our skills, as we normally invest more than any other profession.

Though we come with an advantage that we can practice our profession throughout until possible, we should not be negligent thinking that the career is long enough and retirement plans should always be kept in mind, which most of us usually tend to ignore. Due to late entry into income earnings compared to other professions, we usually invest for high returns resulting in lower than expected returns and sometimes even losses.

Do's and Don'ts for us – The Dentists / Doctors

We, the health professionals are fond of giving instructions to our patients as doctors or dentists, but when it comes to finance, we ourselves have to follow a few do's and don'ts or saying it other way, a taste of our own medicine in matters of finance. We have to follow a few cardinal rules to ensure that our finances remain in a healthy condition (similar to what we expect in our patients). Some of the mistakes commonly made by us are:

1. The temptation to splurge should be curbed big time once we start earning the big bucks. This urge basically stems from the so called 'exile' period we have spent in our so many spent years as a junior student first, then as a senior student and then career struggling etc. when we feel, we missed out on opportunities to have fun as we started to earn well much later in life than our school, college or other friends. The urge spills on to fancy vacations, new cars, eating out every alternate day at expensive joints etc. This juncture is very important to keep a check on our expenditure and concentrate on savings and investments. This doesn't mean that we totally limit ourselves to the above, but drawing a decent line somewhere down the line does help a lot.

2. Busy schedule and time constraint makes us more vulnerable since we are one of the most hard pressed professions for time and in the daily crushing of things, we tend to take a back seat in managing our finances usually leading us to either invest in a very unstructured and impromptu manner or the decision making is handed over to a non-expert.

3. Prime importance is to be given to have good amount of life cover and disability insurance cover so that financial needs of family and profession are taken care of in case of unforeseen and unfortunate events.

4. Wrongly made heavy investments in real estate is not a good idea for us as real estate is just an asset class and totally investing in it might not be better for overall returns.

5. In this era of 'consumer is king', when there is a patient knocking on the doors of consumer court every minute, a good professional indemnity cover is also a must.

6. Usually our improper investments for tax planning because of our pre-conceived notions that the objective of tax planning is to minimize the taxes and ending up investing in places which are not in our best interest. This blinkered vision often results in unwanted loans, investment in real estate and insurance sector in an unorganized manner.

7. For most of us, our private practice is our biggest investment, so we have to know to nurture, grow, save & ring fence the same against all sort of evils or threats.

8. We all have a very busy schedule and we work manyatimes post our fixed working hours as well to attend to various emergencies. On top of that, we have our family, health and social engagements etc. also to look forward to. A healthy life wise fitness schedule is a must for each one of us. We have to eat just the right and do a regular exercise to remain in a good physical shape. We have to be associated with some passion which can be a game, a brain challenging activity which makes us switch off from our work for some time and pursue the same so that we continually get a kick in our life to stay mentally fit as well and this is important for our sound financial health also.

9. We have to understand that once settled we are not going to face major recessions in our industry (ignoring the smaller ones), hence we can afford to take higher risks in our investment assortment portfolio, but being unaware of this or being misguided by non-experts, we tend to over-invest in low-risk low-return products.

10. Our financial plan has to be firm and proper after a thorough and proper research with primary and secondary financial goals listed and it should be deftly executed to achieve those goals. If there is no time to research and make a plan, outsource the same by hiring the services of a good financial planner who should have a proper investment plan investing in a variety of assets including equity, mutual funds and debt so that the investment portfolio is diversified and the returns are optimum and are appreciated long-term capital wise. It is high time that we understand the importance of such financial professionals. The loans and debts should not go beyond our ways and means.

11. We should pay off our education loans first and only then go for home loan or loans for buying property to set up our own clinic. We should ensure that we understand the investments and performance of the investments rather than blindly following the advice of the financial planner. We should revisit our financial plan regularly and tweak it as per changes in our life situations and macro and micro economic conditions.

12. We also have to invest in ourselves by upgrading our skills, learning about new research and developments, newer products, materials via conferences, convocations, seminars, etc. and that too requires some investment and some savings and that too regularly.

13. We lead busy lives but it is important for us to focus on our finances so that we can grow our wealth, manage our taxes and lead a healthy and a secure financial life. Mental security is very important for us to have a long career in our professional field as well.

FINANCIAL LITERACY AND THE IMPROMPTU NEED OF A FINANCIAL CONSULTANT/ADVISOR

Ideally, doctors/dentists being crème-de-la-crème of brains of society should be cracker-jack investors, but let's face the bitter truth; most of us are surely not that adept in financial matters. Financial illiteracy lies in our education system because we have never been taught personal finance and financial planning in our curriculum since childhood so after one starts earning, he does commit mistakes and then learns from them at the cost of money and time. The health professionals like us viz. the dentists and the doctors though start earning handsomely much late, but in my purview should be vigilant about financial planning from 30 years of age itself. When the income starts ramping up fast, we try to make up for the inevitable lost decade unrealistically and illogically by wrong investments compared to our friends when our savings could have been compounding otherwise, if we started earning at the same time. Secondly, given the skyrocketing cost of dental/medical education, dentists/doctors now come to the starting line with saddlebags of student debt at sometimes a higher rate of interest. Overconfidence and gullibility make us easy targets for sales guys, whom we usually mistakenly assume to be seriously credentialed professionals like us and not boiler–room bunco artists. A medical/dental field professional contact information can be readily harvested since our associations only leak our data (Data; which by the way is Goldmine these days); our habits and preferences carefully analyzed and then guided for plans which usually transfuse the assets into the broker's pockets as we people are too busy to cross check or verify any information and just want to throw our hard earned money to places where we can feel mentally secure, that yes, we are saving.

.On top of that, we think, we are too smart for our own good, as our assumption is that our high IQ will lead us on the old Olympus Towering top of the investment hit parade, which usually doesn't happen and we then keep on switching one investment advisor to another in pursuit of greener pastures (read: better guidance). Unfortunately, our head bone isn't connected to our wallet bone. The returns on money invested in financial markets are variable and uncertain, but this loan interest is inexorable and certain, making a strong argument for getting rid of the loans as soon as possible. There is no shortage of anecdotal evidence that dentists/doctors are susceptible to goofball investment schemes like extracting gold from sea water, growing money from plants etc. (I, myself have been swindled by that in early start of my career). Anything that promises sizzling returns with no taxes seems to loom large in our thinking. In addition, there is rising unemployment in our field, the only viable option left is own practice which demands huge investment, little margins left because of ever rising prices of materials or stooping to low quality ever since Chinese materials' infiltration happened in dental industry. Still, the most important of this discussion is the fact that demand for dental/medical services, although should be unrelated to the performance of the larger economy and its bewildering cycles of expansion and contraction that should bedevil the rest of us, but the contrary has started happening to all of us. In other words, being a dentist/doctor used to be low-beta and low-volatility giving us an edge, if we use it, but we usually don't. The ever changing economic slump has raised its venomous fangs to our field as well and we surely are feeling the pinch since the money in any business remains in the cycle of circulation. We normally used to have very steady, high-paid work irrespective of the economy which meant that we could afford to take more risk in our investment portfolios. Our late start also pushes up this need. Ideally, dentists/doctors in their 30's should allocate about 80% of their portfolio to stocks (high risk, but high returns). In fact, we should be overweighting value and small company stocks that are even higher-beta than the stock market as a whole. What is surprising to find according to a survey is that 37% of dentists/doctors have less than 70% allocated to equities at this age. If the dentist/doctor hits the jackpot along the way, he should immediately scale back to a safe portfolio that can sustain him throughout his retirement. Otherwise, as that happy valley draws near, we need to start shepherding our portfolio more conservatively whether we have hit his magic number or not. With no labor income in front of us, we become just like any other retiree at about a 40/60 stock/bond portfolio by the time, we get within sight of the gates at Leisure World.

If our health permits and we can work part-time in retirement, we can invest more aggressively to make our portfolio sound healthy. Many of us are majorly focused on investments and have a product-centric approach rather than managing our personal finances holistically because that's where an expert financial consultant can actually help. A financial advisor can help us plan the financial needs that include goal planning, net worth analysis, cash flow management and asset allocation strategies to minimize taxation, insurance planning, risk management, succession planning and managing the tax liabilities. We have to understand a few vital points wholesomely:

1. Unlike simple investment planning, financial planning approach is a much broader concept that helps us to take care of our finances by the financial advisor/expert.

2. The methodology and uniqueness of wasting a decade (although it was for gaining education) shall always continue to haunt us inevitably, so without much ado, we need to get in touch with an expert to plan and organize our finances.

3. We usually delay our cash inflows and also require intensive capital investments in infrastructures and machineries which significantly affect our financial life in the longer run.

4. Availability of time is gold otherwise, but for us, it is a diamond and a hard sought luxury. With our working schedules being round the clock, we often run short of time and are not able to focus properly on the financial matters. Thus, to keep our financial life healthy and running and hopping on the right track at the right speed, a financial planner is the most necessary.

5. Own practice or a salaried job is one of the biggest dilemmas; a dentist/doctor faces in the initial phase of his career. We, the dentists usually have lack of employment opportunities (salaried job wise) and own practice is always a better idea, but since it demands high investments, we tend to take wrong decisions of over spending or under decorating.

Setting up an own practice is not so easy and an expert advice on managing the financial aspects will be necessary. A financial planner helps us calculate how much investment is required, space requirements, cost, place, services offered and other overhead costs. They can also help identify the status of the cash flow, listing of the revenue and expenses.

6. Partnering up a financial planner can help manage the wrong mixing up of the personal and professional expenses and help further planning in the right direction to make just the right kind of investment choices.

7. Time problem not withstanding, an investment in a good financial planner who can manage the finances and give us sound investment advice as per our needs and desired goals can be a real match winner saga for us.

8. However, the bottom line is that it might be fine to use a financial advisor, but making sure that the advice is good and is a better bargain i.e. a good advice for a fair price. The sooner you realize that you can competently do it yourself, the sooner you will reach financial independence. In my experience, it is rare for an early retiree (think late 40s or early 50s) to pay any significant sum for financial planning or investment management. Rather than trying to pinch pennies on minor expenses, just get the big expenses right and everything rest will fall into place and take good care of itself.

So, what are the biggest tax mistakes we dentists commonly make and how can we ensure we don't make them?

Before that, we have to understand a few terms and clear many misconceptions for dentists:

1. Financial Year: The financial year (FY) is the year between 1st April and 31st March in which you earn an income.

2. Assessment Year: The assessment year (AY) is the year between 1st April and 31st March following the FY in which the income is evaluated.

3. Understanding AY-FY: The Financial year is a period between 1st April and 31st March in which you earn an income. Assessment year is the following year in which this income is assessed and taxed. AY comes after FY. Both AY and FY begin on the 1st of April and end on the 31st of March. Income is earned in FY and taxes on that income is paid in AY. Income tax returns are assessed the year after the financial year has finished. During the assessment year, taxpayers file their income tax return the returns and refunds are processed by the I-T Department in that year.

An e.g. for AY and FY for recent years

Period	Financial Year	Assessment Year
1 April 2013 to 31 March 2014	FY 2013-14	AY 2014-15
1 April 2014 to 31 March 2015	FY 2014-15	AY 2015-16
1 April 2015 to 31 March 2016	FY 2015-16	AY 2016-17
1 April 2016 to 31 March 2017	FY 2016-17	AY 2017-18
1 April 2017 to 31 March 2018	FY 2017-18	AY 2018-19
1 April 2018 to 31 March 2019	FY 2018-19	AY 2019-20
1 April 2019 to 31 March 2020	FY 2019-20	AY 2020-21

4. A New Financial year: Every financial year and assessment year starts on the 1st of April and ends on the 31st of March.
5. Difference between AY and FY: Repeating thus again for the benefit of all, AY is the assessment year and FY is the financial year. Income tax return forms have an AY mentioned over them. Thus, from an income tax perspective, FY is the year in which you earn an income. AY is the year following the financial year in which you have to evaluate the previous year's income and pay taxes on it. As mentioned above, assessment year is the year in which income is evaluated and taxed. This evaluation and taxation is done on income that is earned in the previous year, which is known as the financial year. For example, if your financial year is from 1st April 2018 to 31st March 2019, then it is known as FY 2018-19. The assessment year for income earned during this period would begin after the financial year ends–that is on 1st April 2019 till 31st March 2020. Hence, the assessment year would be AY 2019-20.
6. An ITR form has AY and not FY: Since income for any particular financial year is evaluated and taxed in the assessment year, income tax return forms have AY mentioned on them. Income is earned in a financial year but cannot be taxed before it is earned, hence it has to be evaluated and taxed after the financial year ends. Hence, taxpayers have to select AY while filing their income tax returns.
7. A FY and AY in Hindi: Financial year is called the Vitiya Varsh and assessment year is called the Nirdharan Varsh.

8. Income Tax regimen in India: There are two types of taxes in India – direct and indirect. A direct tax is a tax you pay on your income directly to the government. Indirect tax is a tax that restaurants, theatres and other service providers charge you on for goods or for services. This tax is, in turn, passed down to the government. Indirect taxes take many forms: service tax on restaurant bills and movie tickets, value added tax or VAT on goods such as clothes and electronics (these all are no longer used having been replaced by GST). Goods and services tax (GST), rolled out in July 2017 is a unified tax that has replaced all the indirect taxes that business owners had to deal with.

9. E-Filing: E-filing or electronic filing is submitting your income tax returns online. There are two ways to file your income tax returns. The traditional way is the offline way, where you go the Income Tax Department's office to physically file your returns. The other way is when you e-file through the internet. Since the year FY 2017-18, e-filing has become compulsory for all returns. Earlier ITR 1 and 2 were allowed to be filed manually, but all that has changed now since the Modi Government is keen on e-governance. It is easier also and doesn't require prints of documents.

10. Who has to file Income Tax Returns: It is mandatory to file income tax returns in India if any of the below conditions are applicable to you (as per the Income Tax Act):
    1. Earn gross annual income more than – Rs. 2.5 lakhs (individuals under 60 years), Rs. 3 lakhs (individuals between 60-80 years), Rs. 5 lakhs (individuals above 80 years)
    2. Earn income other than salary like house property, rent etc.
    3. Want to claim income tax refund from the department
    4. Earn from or have invested in foreign assets
    5. Wish to apply for visa or loan applications
    6. Company or a firm, irrespective of profit or loss

11. Income Sources: For simpler classification, the Income Tax Department breaks down income into five heads. Everyone who earns or gets an income in India is subject to income tax. The income could be salary, pension or could be from a savings account that's quietly accumulating a 3.5%, 4%, 5%, 6% or now even 7% interest (depending upon different banks). Even, winners of game shows and contests on TV/Radio/Internet have to pay taxes on their prize money.
    1. Income from Salary: Income from salary and pension
    2. Income from House Property: Rental income mostly
    3. Income from Capital Gains: Income from sale of a capital asset such as mutual funds, shares, house property, agricultural land
    4. Income from Business and Profession: This is when you are self-employed or you run a business. CA's, doctors, architects and lawyers who have their own practices come under this.
    5. Income from Other Sources: Income from savings bank account interest, fixed deposits, recurring deposits, winning game shows etc.
12. Tax Slabs: People's incomes are grouped into blocks called tax brackets or tax slabs and each tax slab has a different tax rate. In India, we have four tax brackets each with an increasing tax rate.
    1. Income earners of up to Rs. 2.5 lakhs
    2. Income earners of up to Rs. 5 lakhs
    3. Income earners of between Rs. 5 lakhs and Rs. 10 lakhs
    4. And those who make more than Rs. 10 lakhs per year

Income Range	Tax rate	Tax to be paid
up to Rs. 2.5 lakhs	No tax	No tax
Between Rs. 2.5 lakhs and Rs. 5 lakhs	5%	5% of your taxable income
Between Rs. 5 lakhs and Rs. 10 lakhs	20%	Rs. 12,500 (5% on 2.5 – 5 lakhs) + 20% of income above Rs. 5 lakhs
Above Rs. 10 lakhs	30%	Rs. 12,500 + Rs. 1,00,000 (20% on 5 – 10 lakhs) + 30% of income above Rs. 10 lakhs

This is the income tax slab for FY 2019-20 for taxpayers under 60 years. There are two other tax slabs for two other age groups: those who are 60 and older and those who are above 80 (details given above in point 10).

People often misunderstand that if they earn for e.g. Rs. 15 lakhs, they will be paying a 30% tax on Rs. 15 lakhs i.e Rs. 4,50,000 (Rs. 4.5 lakhs). That's not true. A person earning Rs. 15 lakhs in the progressive tax system, will pay Rs. 1,12,500 (see table above) + Rs. 1,50,000 = Rs. 2,62,500 only as tax and not Rs. 4,50,000.

13. A few deadlines:

1. For Salaried: 31st January: Deadline to submit your investment proofs to your employer
2. For the rest: 31st March: Deadline to make investments under Section 80C
3. For everyone (individuals): 31st July: Last date to file your tax return
4. Verification: 120 days from 31st July – Time to verify your tax return by printing, signing and sending a single page form ITR-V (Verification) to CPC, IT Department, but these days it is easily verified on the spot just after e-filing by Aadhaar or net banking by OTP (One time Password) & EVC (Electronic Verification Code).

14. ITR V (Verification): Verify your tax return by printing, signing and sending a single page form ITR-V (Verification) to CPC (Centralized Processing Centre), Income Tax Department, Bengaluru, but these days it is easily verified on the spot just after e-filing by Aadhaar or net banking by OTP (One time Password) & EVC (Electronic Verification Code).

15. Challan 280: Challan 280 is the slip that you will use for online income tax payment. Challan 280 is the easiest way to pay advance tax, regular assessment tax, self-assessment tax, tax on distributed income and profits, additional charges etc. online via link:https://onlineservices.tin.egovnsdl.com/etaxnew/tdsnontds.jsp

The type of payment must be selected correctly on the website

a. For Advance Tax, the category is '(100) Advance Tax'
b. For Self Assessment Tax, the category is '(300) Self Assessment Tax'
c. For Regular Assessment Tax, the category is '(400) Tax on Regular Assessment.

I will divulge more on Challan 280 in later parts of this series.

e-Payment

About Us | FAQs | Downloads | Contact Us | Bank Contact Details | Procedure | Authorized Banks | Website Policies

e-Payment facilitates payment of direct taxes online by taxpayers. To avail of this facility the taxpayer is required to have a net-banking account with any of the Authorized Banks.

Select applicable challan

TDS on Rent of Property

Form 26QC — (Payment of TDS on Rent of Property)

Demand Payment for TDS on Rent of Property (Form 26QC)

Demand Payment for Form 26QC — (Payment against CPC (TDS) raised demand (only for TDS on Rent of Property)

Taxation and Investment Regime for Pradhan Mantri Garib Kalyan Yojana, 2016 (PMGKY)

CHALLAN NO./ITNS 287 — (Payment under Pradhan Mantri Garib Kalyan Yojana, 2016 (PMGKY))

Income Declaration Scheme, 2016

CHALLAN NO./ITNS 286 — (Payment under Income Declaration Scheme, 2016)

Equalization Levy

CHALLAN NO./ITNS 285 — (Payment of Equalization Levy)

TDS on Sale of Property

Form 26QB — (Payment of TDS on Sale of Property)

Demand Payment for TDS on Property (Form 26QB)

TDS on Sale of Property

Form 26QB — (Payment of TDS on Sale of Property)

Demand Payment for TDS on Property (Form 26QB)

Demand Payment for Form 26QB — (Payment against CPC (TDS) raised demand (only for TDS on Sale of Property)

TDS/TCS

CHALLAN NO./ITNS 281 — (Tax Deducted at Source / Tax Collected at Source (TDS/TCS) from corporates or non-corporates)

Non-TDS/TCS

CHALLAN NO./ITNS 280 — (Payment of Income tax & Corporation Tax)

CHALLAN NO./ITNS 282 — (Payment of Securities Transaction Tax, Hotel Receipts Tax, Estate Duty, Interest Tax, Wealth Tax, Expenditure Tax /Other direct taxes & Gift tax)

CHALLAN NO./ITNS 283 — (Payment of Banking Cash Transaction Tax and Fringe Benefits Tax)

16. TDS: TDS ensures steady flow of taxes for the government. TDS exists to help government get tax throughout the year. There's a prescribed table on how much tax deducted under what circumstances for e.g. any salary paid over Rs. 21,000 (Annual Rs. 2,50,000) will have 10% -15% TDS deduction. Your employer cuts TDS based on the information available to him about you. So if you have made investments, but have not declared or if you live in a rented house, but have not shared rent receipts, your finance department will have no choice but to deduct tax based on your Cost to company or the CTC. This is why the investment proofs deadline of 31st January is very important. Save yourself some headache and submit your investment proofs on time. Banks don't know if you are working in a company or if income from fixed deposits is what you solely rely on. So, they deduct a standard 10% tax before they give away the interest. Now if you fall in the 20% or 30% bracket, it is on you to pay the remainder of the income tax. That's why sometimes you may find yourself paying some tax at the time of filing a tax return. Make sure banks have your PAN number. They deduct 20% tax if they don't have your PAN in their records. Persons responsible for making payments have to deduct tax before making payment. The tax department wants payers to deduct tax beforehand and deposit it instead of waiting for you (the recipient) to make the tax payment yourself. The recipient of income receives the net amount (after deduction of tax at source). The recipient adds the gross amount to his income. TDS is adjusted against final tax due, since it is tax already deposited on the recipient's behalf (More on TDS in later parts of this series).

16. Advance Tax: Advance tax means income tax should be paid in advance instead of lump sum payment at year end. It is also known as 'pay as you earn' tax. These payments have to be made in installments as per due dates provided by the income tax department. If the salaried, freelancers, professionals and businesses have a total tax liability of Rs. 10,000 or more in a financial year, you are bound to pay advance tax or pay interest with penalty at the end. Advance tax applies to all tax payers, hence. Senior citizens, who are 60 years or older and do not run a business, are exempt from paying advance tax. Self-employed people must do the calculation themselves and pay the tax to the Government periodically every quarter.

The deadlines are:

Due Date	Advance Tax Payable
On or before 15th June	15% of advance tax
On or before 15th September	45% of advance tax
On or before 15th December	75% of advance tax
On or before 15th March	100% of advance tax

To calculate your advance tax: Add up all the invoices received and include future payments you will be receiving till March 31 to estimate your taxable income. Deduct expenses directly related to your business and any investments you have made or will be making under Section 80C and accordingly deposit advance tax.

18. Books of accounts: Books of accounts means a record of all income, expenses, assets and liabilities of your business. These financial records are essential for understanding the performance of your business. These may be compulsorily required in some cases.

19. Deductions: Income from all the five heads is summed up and is called gross total income. From this gross total income, deductions can be claimed. These deductions reduce your total tax outgo since they lower your gross total income. Investments such as PPF, NSC or certain expense like life insurance premium, interest on education loan, medical insurance are allowed as deduction from your gross total income.

20. Depreciation: When you purchase a capital asset, the benefit of such an asset is usually expected to last more than a year, such assets are 'capitalized' and not charged to expenses when they are bought. Every year a small portion of its cost is expensed and is allowed to be reduced from your income. This expense which is charged every year is called depreciation (More on Depreciation in later parts of this series).

21. Tax audit: Tax audit is a review of your financial records by a Chartered Accountant. Your books must be audited if:
you are a professional earning gross receipts exceeding Rs. 50 lakhs
or a business owner with an annual revenue of over Rs. 2 crores
or you have opted for presumptive taxation, you declare your income below the prescribed percentage but your total income exceeds the basic exemption limit of Rs. 2,50,000 (More on Tax Audit in later parts of this series).

22. Form 26AS: Form 26AS has all tax related information of your PAN. It shows how much tax has been received by the government against your PAN. It includes TDS, tax directly deposited by you, refunds made to you etc. You can understand how to view and download your Form 26AS. It is a tax summary statement that contains all the tax payments you have made yourself (self-assessment tax/ advance tax) or tax someone deducted (TDS) on your behalf. You are going to need this document when you are doing your income tax e-filing. Form 26AS can be downloaded from www.incometaxindiaefiling.com. I always advise my colleagues to keep checking Form 26AS at least once every week (More on Form 26AS in later parts of this series).

23. Form 16: This is a super important document for all salaried individuals. If you need to know whether or not your company has given you some tax allowance like your offer letter says, or want to see how much tax has been deducted throughout the year, or need to see EPF contributions, it would be easier if you could see them all in one place? That is your Form 16 where all this information is available in one place and having a Form 16 makes e-filing your income tax return very simple. You can upload your Form 16 and e-file your income tax return. Form 16 has:
a summary of all the tax deducted by each quarter
all the tax benefits and allowances you've availed as a salaried individual
Section 80C deductions you've claimed through your employer
and your taxable income after allowances and Section 80C deductions

24. Form 16A: Form 16A is very similar to a Form 16 in that it contains how much tax was deducted over what income. So how's Form 16A different from Form 16? Form 16A will never be issued by an employer. They are usually given to you by a bank that is deducting TDS, or a company that has deducted tax on your freelancing service.

25. Digital Signature: While filing the audit report, both the CA's signature as well as yours' need to be included. For this, you must get a digital signature. Digital signature certificate come with validity of one/two years.

26. Form 15G & Form 15H: What can you do to make sure bank does not deduct TDS on interest, if your total income is not taxable? (applies mainly to fresher dentists) Banks have to deduct TDS when interest income is more than Rs. 10,000 in a year. The bank includes deposits held in all its branches to calculate this limit. But if your total income is below the taxable limit, you can submit Forms 15G and 15H (only for senior citizens) to the bank requesting them not to deduct any TDS on your interest. Form 15G and Form 15H are forms you can submit to make sure TDS is not deducted on your income if you meet the conditions mentioned below. Also, you must have a PAN before applying for these forms. Some banks allow these forms to be submitted online through the bank's website. Form 15G and Form 15H are valid for one financial year. So you have to submit these forms every year if you are eligible. Submitting them as soon as the financial year starts will ensure the bank does not deduct any TDS on your interest income. Form 15H is for senior citizens, those who are 60 years or older; while Form 15G is for everybody else. Conditions you must fulfill to submit Form 15G/15H:

1. You are an individual or HUF (Hindu Undivided Family)
2. You must be a Resident Indian
3. You should be less than 60 years old for form 15G (above 60 years or will be 60 years for which you are submitting the form for form 15H)
4. Tax calculated on your Total Income is nil
5. The total interest income for the year is less than the minimum exemption limit of that year, which is Rs 2,50,000 for financial year 2016-17.

A lot of taxpayers forget to submit Form 15G and Form 15H timely. In such a situation, TDS of one quarter may already be deducted by the bank. The only way to claim a refund of excess TDS deducted is by filing your income tax return. Banks or other deductors cannot refund TDS to you, since they have already deposited it with the income tax department. Income tax department will refund excess TDS, after you file an income tax return. TDS is usually deducted quarterly. So, if you forget to submit Form 15G/Form 15H, don't worry, you can submit it at the earliest available opportunity, so that no TDS is deducted for the remaining financial year.

27. Self Assessment Tax: When you are filing a tax return and you find out that you need to pay additional tax, you would be paying self assessment tax. Another way to think about this would be:

    a.if you are paying tax for a financial year after the deadline has ended, you will pay self assessment tax.

    b.if you are paying tax for a financial year during the financial year, you will pay advance tax.

28. Section 87A Tax Rebate for FY 2017-18 & for FY 2016-17: The primary duty of any government is to safeguard its citizens. There are many helpful provisions in the Indian tax laws to reduce your tax liability. Section 87A of the Indian Income Tax Act is one such provision. Section 87A rebate provides for income tax rebate to individuals earning income below the specified limit. It is being provided to reduce the tax burden of lower income bracket. Rebate under section 87A provides for a marginally lower payment of taxes to individuals earning an income below the specified limit.

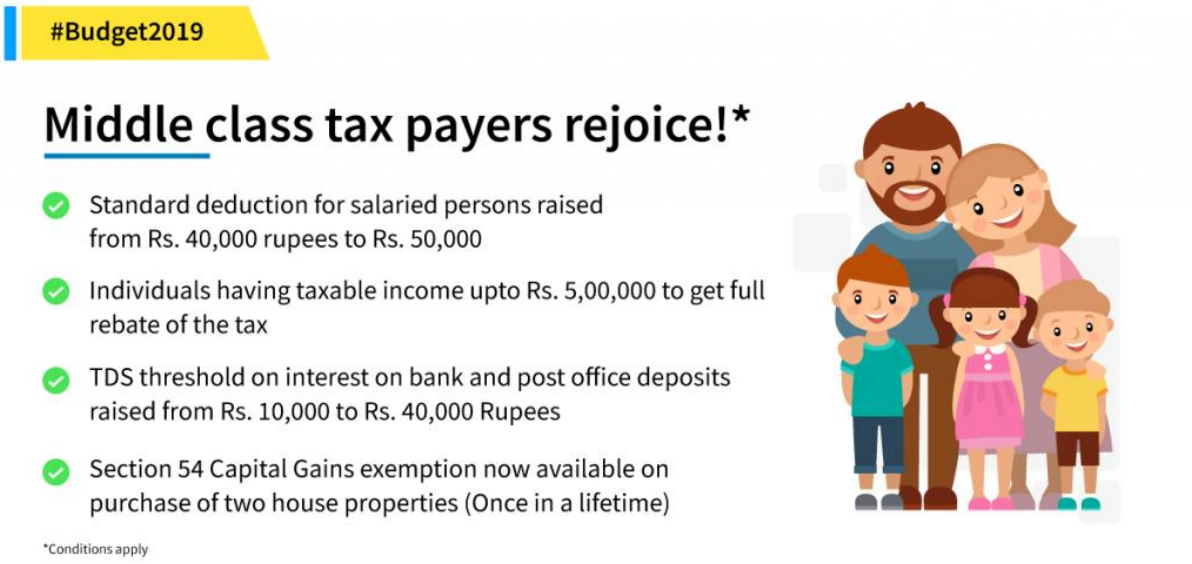
    Who all can claim rebate under section 87A for FY 2019-20?

    You can claim tax rebate under this provision if you meet the following conditions:

    •You must be a Resident Individual; and

    •Your Total Income after Deductions (under Section 80) doesn't exceed Rs. 5 lakh.

    •The rebate is limited to Rs. 12,500. This means that if the total tax payable is lower than Rs. 12,500, then that amount will be the rebate under section 87A. This rebate is applied to the total tax before adding the Education Cess (4%).



(Image Courtesy: Cleartax)

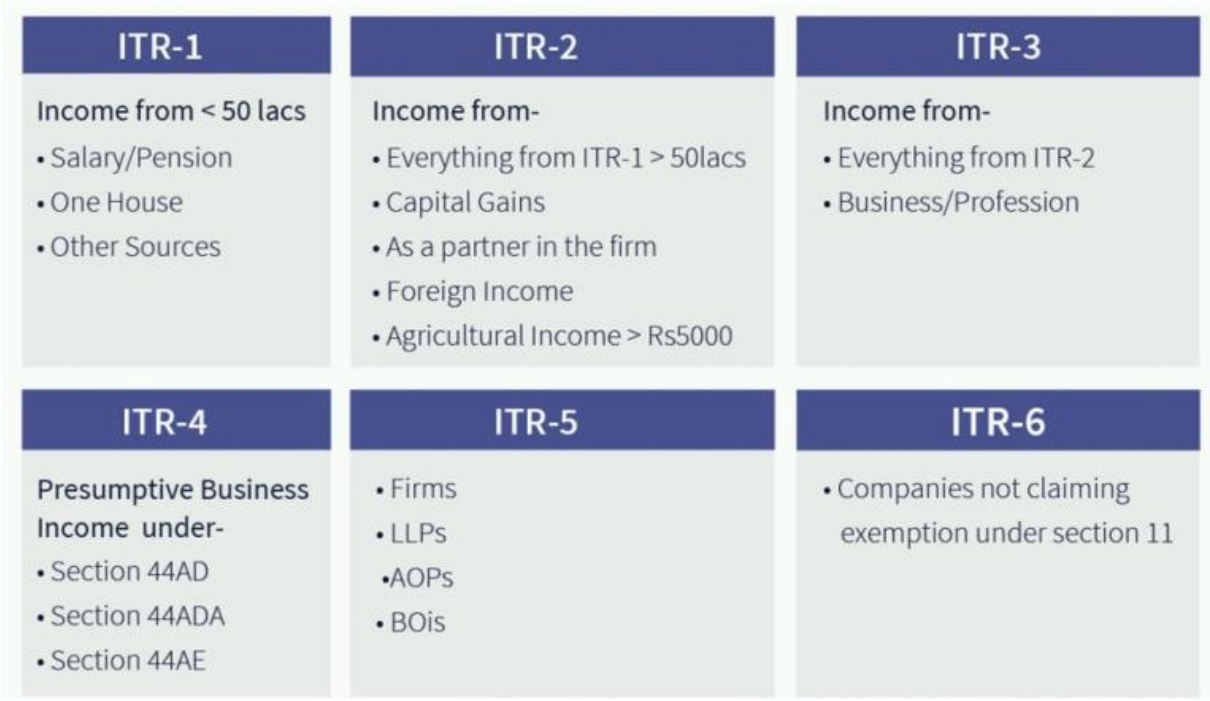
Following are a few examples of the 87A rebate allowed to Resident Individuals including Senior Citizens:

Total Income	Tax payable before Cess	Rebate u/s 87A	Tax Payable + 4% Cess
2,70,000	1,000	1,000	**0**
3,60,000	3,000	3,000	**0**
4,90,000	12,000	12,000	**0**
12,00,000	**1,72,500**	**0**	**1,79,400**

(Table Courtesy: Cleartax)

This rebate varies from each FY and is the discretion of Finance Ministry depending on audience pulse. For e.g. in FY 2016-17, the same section read that if you are a resident individual and your total Income minus deductions (under Section 80) is equal to or less than Rs. 5,00,000, you are eligible for a rebate of Rs. 5,000 under Section 87A. The rebate is limited to Rs. 5,000; which means if the total tax payable is lower than Rs. 5,000, such lower amount of tax will be the rebate under section 87A. This rebate is applied on total tax before adding Education Cess (3%). This rebate is also available to Senior Citizens who are 60 years old but less than 80 years old. For FY 2017-18, the Finance Minister provided a maximum Rebate of Rs. 2,500 under Section 87A and that too if your total Income minus deductions (under Section 80) was equal to or less than Rs. 3,50,000. This rebate too was applied on total tax before adding Education Cess (4%).

29.. IT Return Forms



(Image Courtesy: Cleartax.com)

30. **For Professionals (Doctors/Dentists)**: Your income tax return must include income earned from all sources. This includes income earned from your practice, any rental income, income from fixed deposits and savings accounts and income earned from sale of any shares or property, called capital gains. The common way going on since many years now is to consider it like a business activity and deduct actual expenses from actual receipts to calculate its profit and loss and pay tax on it. Once your income is calculated from all sources, you can claim reduce your taxable income by claiming deductions under Section 80 and pay tax on the remaining income.

31. Need of a CA or not: We definitely need a CA if we need to get our books audited, if your gross income crosses Rs. 50 lacs per annum if following the presumptive scheme of taxation. A certified CA has to go over the books of accounts and submit an audit report in the tax return. Even otherwise, we need a CA to manage our books of accounts and help us claim tax-deductible expenses. Moreover, the cost to hire a CA is tax-deductible too.

Head of income	Nature of income covered
Income from Salary	Income from salary and pension are covered under here
Income from Other Sources	Income from savings bank account interest, fixed deposits, winning KBC
Income from House Property	This is rental income mostly
Income from Capital Gains	Income from sale of a capital asset such as mutual funds, shares, house property.
Income from Business and Profession	This is when you are self-employed, work as a freelancer or contractor, or you run a business. Life insurance agents, chartered accountants, doctors and lawyers who have their own practice, tuition teachers,

(Image Courtesy: Cleartax.com)

32. Defective return notice under 139 (9) for freelancers: When we file an income tax return using the ITR-4 Form, we have to attach a profit and loss (P & L) statement along with it. The Income Tax Department may send us a defective tax return notice under Section 139 (9) for not filing out the balance sheet and profit and loss (P & L) statement.

33. Deductions: Income from all the five heads (as in the image below) is summed up and is called gross total income. From this gross total income, deductions can be claimed. These deductions reduce your total tax outgo since they lower your gross total income. Investments such as PPF, NSC or certain expenses like life insurance premium, interest on education loans, medical insurance are allowed as deductions from your gross total income.

34. Tax saving options in India: The most popular tax-saving options available to individuals and HUFs in India are under Section 80C of the Income Tax Act. Section 80C includes various investments and expenses that can be used to claim deductions. The Section 80C limit is Rs. 1,50,000 in a financial year, which means that you can use this entire amount to reduce your taxable income.

35. Saving tax beyond Section 80C: Apart from the deductions available under Section 80C, there are various other Section 80 deductions that can also be claimed to save on income tax. These deductions include health insurance premiums, tax benefits on home loans. Another way to save tax is by creating a Hindu Undivided Family (HUF). An HUF can be created by married Hindu individuals. An HUF would include the creator, who is called Karta, and his or her family members. The advantage of an HUF is that you can split your income between two entities–yourself as an individual taxpayer and the HUF. This way, you can avail the same tax-saving deductions twice.

36. Planning tax-saving investments for the year: The best time to start planning your tax-saving investments is at the beginning of the financial year itself. Most taxpayers procrastinate till the last quarter of the year and end up taking hurried last minute decisions on hear say or an urgent verbal advice on telephone which can't be even verified or cross checked. Instead, if you plan at the start of the year, you can make investments that can also help you fulfill your long-term goals. Tax-saving investments should be used to build wealth as well and not only to just save tax. You can use the following guidelines to plan your tax-saving for the year:

Check the tax-saving expenses that you are already making that you can claim. This includes expenses like insurance premium, children's tuition fees, etc.

Deduct this amount from Rs. 1,50,000 to figure out how much to invest. The entire amount doesn't need to be invested if expenses are covering it.

Choose tax-saving investments on the basis of your goals and profile. ELSS funds, PPF, NPS and fixed deposits are some of the popular options.

This way, you can figure out how much you need to invest to save taxes. It is best to begin investing in the first quarter of the financial year so that you can spread the investments over the year. Doing this won't burden you at the end of the year and will also allow you to make informed investment decisions

SHOCKING but TRUE

According to a study by Govt. of India, 70% of the people who file their returns do not invest fully under Section 80C and a big chunk of those are the professionals like us.

REFERENCES:

http://www.alterdoctor.in
https://www.bankbazaar.com
https://www.blog.tax2win.in
http://www.businessnewsthisweek.com
https://www.businesstoday.in
https://www.cleartax.com
https://www.docplexus.org
https://www.economictimes.indiatimes.com
https://www.economictimes.indiatimes.com/wealth/earn
https://www.economictimes.indiatimes.com/wealth/plan
https://www.economictimes.indiatimes.com/wealth/tax
https://www.en.wikipedia.org
https://www.ey.com
https://www.financialexpress.com
https://www.getwalnut.com
https://www.hdfcbank.com
https://www.incometaxindia.gov.in
https://www.indiafilings.com/learn/cash-transaction
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https://www.kevinmd.com
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https://www.nytimes.com
https://www.paisabazaar.com
http://www.pocketnewsalert.com
https://www.quora.com
https://www.scroll.in
https://www.sec.gov/reportspubs
https://www.taxadda.com/restrictions-cash-transactions
https://www.taxguru.in/income-tax/rs-2-lakh-cash-transaction-limit-wef-01apr2017-details-examples.html
http://www.tennews.in
https://www.tflguide.com
https://www.tomorrowmakers.com

Dear Readers: Important Announcement

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

The above is Part 1.

Check out DentiMedia September 2019 Vol. 20 Issue 2 for the 2nd part of the above article.

2 Maxillary first molar with two palatal roots: A case report.

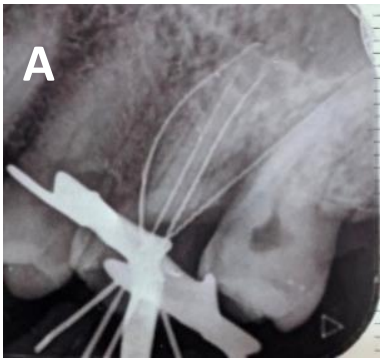
Authors: Dr. Priyanka Patel, Dr. Dipti Choksi, Dr. Barkha Idnani

INTRODUCTION:

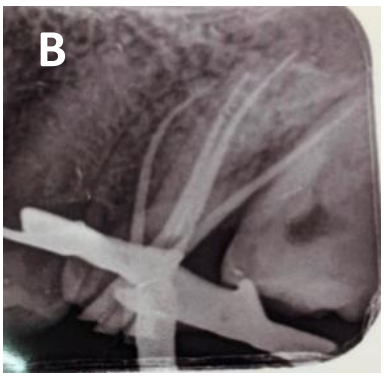
The complexity of the root canal system of maxillary molars presents a constant challenge, as the dentist must have a thorough knowledge of root canal configuration to provide successful endodontic treatment. Failures to detect all the root canals and to identify extra roots are one of the main causes for failure in the endodontic therapy.1 Vertucci2 proposed a standardized method for categorizing known root canal anatomic variations, and a more clinically relevant classification of the root canal anatomy was described by Weine.3 Traditionally, the maxillary first molar has been described to have three roots, namely, the mesiobuccal, distobuccal, and palatal with three or four root canals, while the fourth canal commonly being found in the mesiobuccal root.4 There is a wide range of variation reported in the literature regarding the number of roots and the number of canals in each root. Variations in root anatomy have ranged from 1 root to 5 distinct roots.5 Cleghorn et al. did a comprehensive review on the root and root canal morphology of the maxillary first molar.6 The present case report describes the endodontic management of a maxillary first molar with 2 palatal roots.

CASE REPORT:

A 32-year-old male patient came to our Department of Conservative Dentistry and Endodontics, with a chief complaint of pain in the maxillary left first molar since last 10-15 days. Pain was dull aching in type, moderate in intensity and intermittent in nature. His medical history was noncontributory. Clinical examination revealed a carious maxillary left first molar with tenderness on percussion. Electric pulp test was performed which gave delayed response. Radiographic examination revealed caries on the distal aspect of crown involving enamel, dentin and pulp. The clinical and radiographic findings led to a diagnosis of acute apical periodontitis for maxillary left first molar. Radiographic evaluation indicated unusual anatomy with the roots superimposed over each other. (Figure 1, A) After administration of local anesthesia, rubber dam isolation was performed and the traditional access cavity was prepared. On examining the floor of the pulp chamber 3 distinct orifices: mesiobuccal, distobuccal and one palatal were located and an additional palatal orifice was also located distopalatally. (Figure-1, B) All the four canals were negotiated and patency was checked with no 10-hand k-file. Working length was established by using an intraoral periapical radiograph at different angulations and was confirmed by an electronic apex locator. (Figure 1, C) Cleaning and shaping was done by the crown down technique using Protaper Gold Rotary file system till F1 along with 2.5% sodium hypochlorite solution and EDTA. Temporary restoration was given after completion of the biomechanical preparation and the patient was recalled for obturation. In the next appointment master cones were selected by placing cones corresponding to the last file used and was confirmed radiographically. (Figure 1, D) After drying the canals with sterile paper points obturation was performed using warm vertical compaction of gutta percha and grossman's sealer. The access was then restored with a composite resin. Final radiograph was taken to check for the quality of the obturation and the post endodontic restoration and patient was recalled for full coverage restoration. (Figure 1,E)



B: Access opening,



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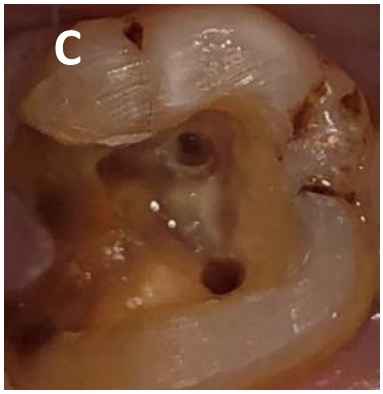
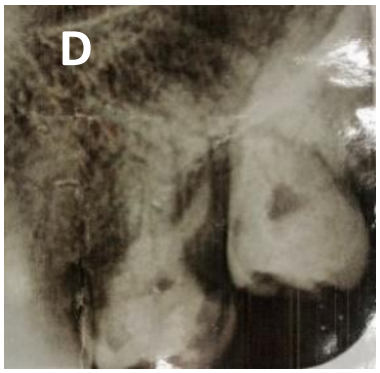
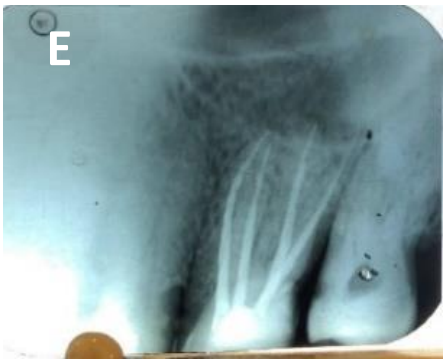


C: Working length radiograph,



D: Master cone radiograph,



E: Post obturation radiograph,

DISCUSSION:

Successful endodontic therapy requires thorough knowledge of the root and root canal morphology. The 2-rooted type of the maxillary first molar is rarely reported. Its incidence in the literature is 3.9%8. Fava reported a case of maxillary first molar with two roots; two canals in the buccal root and one palatal root canal.9 Gopikrishna et al. presented the endodontic management of a maxillary first molar with a single-fused buccal root with two canals and 2 palatal roots.5 The clinician should be attentive to the

clinical signs of anatomic variations during access cavity preparation as in this case, a bleeding spot in the pulp chamber floor was noticed, suggesting the presence of an additional palatal canal, the other indications could be the eccentric location of an endodontic file on a radiograph during working length determination, inconsistent apex locator readings.9

REFERENCES:

1. M. Deepalakshmi, R. Miglani, R. Indira, and S. Ramachandran, "Spiral CT diagnosis and endodontic management of an anatomically variant palatal root with two canals in a maxillary first molar," Indian J Dent Res,2010, 21(3)443–445.

2. Vertucci FJ. Root canal anatomy of the human permanent teeth. Oral Surg Oral Med Oral Pathol Oral Radiol Endod 1984;58:589-99.

3. Weine FS, Endodontic therapy. 6th ed. St. Louis: Mosby; 2004: 109-10

4. Burns RC, Buchanan LS. Tooth morphology and access openings. In: Cohen S, Burns RC, editors. Pathways of the pulp. 6th ed. St Louis: Mosby; 1987. p148.

5. Gopikrishna V, Bhargavi N, Kandaswamy D. Endodontic management of a maxillary first molar with a single root and a single canal diagnosed with the aid of spiral CT: a case report. J Endod 2006;32:687-691.

6. Cleghorn BM, Christie WH, Dong CCS. Root and root canal morphology of the human permanent maxillary first molar: a literature review. J Endod 2006;32:813-21.

7. L. R. G. Fava, "Root canal treatment in an unusual maxillary first molar: a case report," IEJ, 2001,34(8), 649–653.

3 Soft Tissue Considerations Around Dental Implants

Author: Charu Agrawal, Hiral Parikh, Shilpa Duseja, Rikta Virda.

ABSTRACT:

ABSTRACT

Background: The peri-implant soft tissue health is one of the most important aspects for long-term survival of osseointegrated dental implants.

Purpose: To discuss the normal peri-implant structures, maintenance requirements & the probable short-comings associated with peri-implant soft tissue integration. To describe common procedures used for prevention and treatment of peri-implantitis.

Conclusion: The peri-implant structure has been shown to be less effective than that of natural teeth in resisting bacterial invasion because of the change in the gingival fiber alignment and less vascular supply which makes it more susceptible to subsequent peri-implant disease progression and bone loss around implants. Because of the difference exits between various structures around implant & natural teeth, clinicians and patients as well must pay more attention in the maintenance & recovery of peri-implant soft tissue.

INTRODUCTION:

Now-a-days, dental implants are commonly used for the replacement of missing teeth. Most clinicians focus on osseointegration and considered it as the most important factor for prediction of implant success in terms of stability, while the role of soft tissue integration around dental implants has neglected.1

Adequate transmucosal healing and soft tissue stability around the dental implant is pre-requisite for the success of osseointegrated implants. This soft tissue integration provide a protective barrier against the bacterial invasion and subsequent inflammation. Thus, the adequate soft tissue integration is essential for long-term survival of osseointegrated dental implants.2

Therefore, the aims of this article are to describe the peri-implant soft tissue composition and to discuss the recommended ways to maintain and promote the peri-implant soft tissue health.

Biology of Periimplant Soft Tissue

The soft tissue interface around the implant comprises an epithelial tissue component and a connective tissue component. The epithelial part is termed as barrier epithelium and it resembles the junctional epithelium around the natural teeth.

Microscopically, the peri-implant mucosa contains a well-keratinized oral epithelium, sulcular epithelium, and a thin barrier of peri-implant junctional epithelium.

The amount and distribution of collagen fibers, number of fibroblasts and blood vessels is quite different in relation to the peri-implant mucosa from those of a natural tooth. (figure 1)

Distribution and Orientation of Collagen fibers

In natural teeth, the collagen fibers are perpendicularly oriented from the tooth cementum to the alveolar bone and serves as a protective barrier against the epithelial downgrowth and bacterial invasion. While in case of dental implants, there is no cementum layer, so the collagen fibers are oriented in a parallel or parallel-oblique to the implant surface, making them more susceptible to bacterial invasion and subsequent peri-implant tissue breakdown. The studies has shown that collagen fibers around the rougher implant surfaces with either microgrooves or porous plasma-sprayed surfaces are oriented more perpendicular than their smooth surface counterparts. The supracrestal connective tissue of the peri-implant mucosa is primarily composed of collagen type I fibers. Collagen fibers of type III, IV, V are also present in similar amount to that of around natural tooth whereas type V collagen fibers are present in higher amounts in peri-implant mucosa.3

Blood Supply

The blood supply of the periodontal soft tissues is derived from two different sources. One is from the supra-periosteal vessels which are present lateral to the alveolar process, and another is the vessels of the periodontal ligament. While in case of dental implants, the blood supply from the periodontal ligament is not present and the supracrestal vascular topography is also reduced and diversely arranged. Beside these, there is dense collagen fibers present adjacent to the inner zone of the implant surface which also account for reduced vascular of peri-implant tissue compared to the natural tooth. A clearing technique visualizing carbon-stained blood vessels showed that peri-implant vascular networks are derived from the terminal branches of larger blood vessels emerging from the periosteum of the bone at the implant site.4

Fibroblasts

Fewer fibroblasts are present surrounding the dental implants in comparison to natural teeth, while mesenchymal cells with a high number of fibroblasts are found which are typically interposed between collagen fibrils.5

The Biologic Dimensions

The biological width around the dental implant acts as protective barrier against potential bacterial infection, food debris entrapment into the implant soft tissue interface. It had been shown in studies that there should be at least 3 mm of smooth titanium surface present supra crestally to achieve the adequate biological width around dental implants. Approximately 2 mm of the junctional epithelium and 1 mm of connective tissue attachment is constitutes the biologic width around dental implants. Biological width has been reported composed of 2 mm of junctional epithelium and 1.3-1.8 mm of connective tissue for a two-part implant. Similar dimensions were also observed around one-part implant before and 12 months after loading. Recent evidence has suggested that reformation of biological width may be the primary etiology contributing to early implant crestal bone loss. Nevertheless, some authors have speculated that there is approximately 1 mm increase in the biological width after implant loading, due to crestal bone resorption.

Significance of Keratinized Tissue Around Implants:

Keratinized Tissue (KT) consists ortho/para keratinized epithelium overlying the dense, collagen-rich connective tissue in the form of the lamina propria, which is firmly attached to the periosteum of the bone. Whereas the lining mucosa is comparatively collagen-poor, covered by a nonkeratinized epithelium, and is attached by collagen and elastic fibers to muscles/periosteum of the underlying bone. If implants have sufficient width of attached/keratinized tissue, the long-term prognosis of these implants is improved. Clinical parameters of inflammation were accounted higher in cases of implants with a narrow zone (<2 mm) of keratinized tissue. A wider keratinized mucosal band (>2 mm) is associated with less gingival recession and periodontal attachment loss as compared with a narrow (<2 mm) band. Therefore, it can be speculated that an inadequate amount of KT, especially with nonoptimal oral hygiene, negatively influences the long-term maintenance of marginal tissues of restored teeth and/or dental implants.

An adequately keratinized zone of masticatory mucosa for maintaining gingival health is defined as ≥2 mm of masticatory gingiva with ≥1 mm of attached gingiva. Lack of KT and vestibular depth leads the periimplant mucosa in close proximity to the muscular attachment fibers

The contraction of muscle will pull these fibers away, resulting in a break in the seal. This may lead to chronic tension to the tissues, leading to its breakdown. The transmucosal extensions of the implants may trap food boluses since there is shallow vestibule and lead to inflammation of the tissues. Hence, it is prudent to assume that "keratinized tissue should be present in adequate amounts in area of implant placement and if not, have to created by opting for various mucogingival surgical procedures."62

Influence of Mucosal Thickness on Soft Tissue Integration

A minimum of 3 mm periimplant mucosa is required for the formation of stable epithelial connective tissue attachment. If a minimal dimension of gingival tissue is not available, bone loss may occur to ensure the proper development of the biologic width. The transition of the alveolar mucosa to the periimplant mucosa is a difficult and a complex process. The maturity of the soft tissue sealing around the implants promotes increase in papillary height within 2 years without any manipulation of the soft tissue. Loss of implant papilla is one of the most troubling dilemmas in implant dentistry. The "black triangle" around the implant-supported restoration causes phonetic difficulties, food impaction and unpleasant aesthetics. Factors that can affect the appearance of the periimplant papilla are inter proximal distance, crestal bone height, tooth shape/ form, periimplant keratinized tissue and gingival thickness.

Microbiota and Inflammatory Response

The accumulation of plaque and formation of biofilm on dental implant is responsible for the development of peri-implantitis. The formation of the biofilm on dental implants is influenced by the various implant surface characteristics such as micro roughness, chemical composition and free surface energy. Data available from different studies have shown that the Staphylococcus aureus is most common associated with deep peri-implant pockets and responsible for suppuration and bleeding tendency on probing. Though the Staphylococcus aureus is not closely related to chronic periodontitis, it seems to be more specific to periimplantitis. Apart from S.aureus, the subgingival microbiota is similar in chronic periodontitis and in periimplantitis.7

The inflammatory cellular response in periimplant tissue is also different form that of periodontal tissues around natural teeth, higher proportion of B cells and plasma cells are associated with peri implant infection. The human and animal studies have shown that host response in initial phase of the periodontal disease and periimplant disease is quite similar, but the progression of disease with subsequent bone loss more rapidly occur in the peri-implant lesions compared to

periodontal disease. The explanation for the above mentioned difference is on the basis of following: difference in direction of supra-crestal connective tissue fiber compared to that of natural tooth, reduced vascular supply and less inflammatory cells including infiltrating neutrophils and B cells.8

Influence of the Abutment Material, Design, Surface, and Connections on Soft Tissue Integration

Abutment material

The pure titanium is used traditionally as abutment material for the dental implants because of its biocompatibility. But the emerging era of aesthetic dentistry necessitate the use of other materials as an abutment of dental implants. Abrahamsson et al. used various abutment materials including titanium, gold alloy, dental porcelain, and Al2O3 ceramic to investigate the difference in soft tissue integration around dental implants. The result of titanium and ceramic abutment were satisfactory while the gold alloy and dental porcelain failed to establish adepuate soft tissue integration. Various other clinical studies where the comparison between titanium and ceramic (Al2O3) abutments were carried out for microbial profile and soft tissue integration have shown the similar results as no significant difference was found.

Implant Neck Design/Crest Module

Crestal/marginal bone loss around endosteal implants is a common phenomenon. The highest bone stress concentrate in the cortical bone at the implant neck region as observed in the finite element analysis studies. The factors associated with early implant bone loss are: microgap, implant crest module, occlusal overload, reformation of the biologic width around the dental implant. The crest module is that part of the implant that receives the crestal stress after the loading of implants. After the loading of an implant , bone loss has been observed up to the first thread in various submerged implant systems, which have different distances between the implant platform to its first thread. It has been hypothesized that there are changes in the force at the crest module from shear to compression which is probably caused by the first thread which ultimately favor the reduced bone loss. Soft tissue integrity is extremely important to be maintained during the healing phase of the two-stage submerged implant. In two-stage implant, unintentional perforation of the gingival tissues above the cover screw during healing phase account for an inflammatory reaction and subsequent marginal bone destruction of around 2 mm. Healing abutment should be placed as early as possible to avoid further marginal bone loss. By placing the healing abutment, the mucosa is supported and raised to a level that may reach the dimension of the biologic width.

The Periimplant Soft Tissue Health

The periimplant tissues are vulnerable to mucosal inflammation and bone loss. The long term success of the implant is strongly depended on the periimplant soft tissue integrity. Soft tissue health around dental implants is primarily governed by the periimplant marginal bone and the periimplant papilla. Marginal gingiva is influenced by: Periodontal biotype, width of the facial bone, microstructure/macrostructure of the neck of the implant, microstructure of implant — abutment connection, abutment material and design, interimplant distance, implant abutment junction, abutment disconnection (one-stage or two-stage), and surgical technique adopted. Periodontal biotypes, both flat thick and scalloped thin biotypes respond in different ways to inflammation/surgery. Thin biotype is more prone to recession following procedures. Thick biotype is more stable and resistant to recession. 1.8 mm of the cortical bone width should be left all around to avoid crestal bone loss and recession. The factors which influence the position of the interimplant papilla are formation of the biological width and the distance of the interproximal bone. When the vertical distance from the contact point to the alveolar crest is <5 mm, papilla fill is almost 100%. A minimum of 3 mm of the interimplant distance should be maintained to avoid crestal bone loss and subsequent necrosis of the papilla. Full thickness flaps lead to an unavoidable bone resorption. An average 1 mm of alveolar height and width gets resorbed and this may contribute to buccal soft tissue recessions on the facial aspect of implants that may dramatically disturb the aesthetic appearance..

MAINTAINING THE HEALTH OF PERI-IMPLANT SOFT TISSUE

Maintaining the peri implant soft tissue health is at most important for the long term survival of the dental implant. It requires the adequate oral hygiene maintenance by combined efforts of both the dentist and patient himself/herself.

PATIENT SELF-MANAGEMENT

Mechanical Methods

Tooth Brushing:

It is mandatory to maintain the proper oral hygiene around dental implants. Various manual toothbrushes are available which fulfil the basic aim of plaque removal. Power tooth brushes are also available such as sonic, ionic and counter rotational toothbrushes. Studies have shown that both manual and powered tooth brush are equally effective in removal of plaque and calculus. On the other hand investigators found that powered brushes were more effective in reducing plaque and gingivitis it is advised to the patients with impaired dexterity, hospitalized patients, old age group patient to use power tooth brush for the better plaque control.9

Interdental aids:

Besides the toothbrush, various aids are available which helps specifically removal of plaque interdentally. Dental floss, tooth pick, uni-tufted and multi-tufted interproximal brushes are used for interdental plaque control.10

Chemical Methods

Chemical agents can be used as an adjunct to mechanical plaque control.

Triclosan/Copolymer Toothpaste:

Triclosan (0.3%) together with methyl vinyl ether-maleic anhydride polymer (2.0%) in a sodium fluoride silica-based toothpaste can be used as anti-tartar and to reduce the plaque accumulation and subsequent gingival inflammation.11

Fluoride-Containing Mouth Rinses:

Amino fluoride/ stannous fluoride mouth rinses are effective in plaque control equivalent to that of chlorhexidine. It also has acceptable taste. Furthermore, fluoride-containing mouth rinses are able to reduce pro-inflammatory cytokines in peri-implant crevicular fluid.12

Essential Oils Mouth Rinse:

Listerine when used for 30 seconds twice daily with tooth brushing has shown improved gingival health parameters e.g, bleeding on probing compared to tooth brushing only. Besides these a variety of oils such as cinnamon oil and clove oil have been studied for their long-term antibacterial effect as well.13

Chlorhexidine:

Chlorhexidine is available in mouth rinse, irrigation and in the form of local application as well. 0.12% chlorhexidine gluconate is being widely used as an adjunct to mechanical cleaning. Further more, irrigation with 0.06% chlorhexidine has been shown to be more effective than chlorhexidine gluconate (0.12%) mouth rinses.14

PROFESSIONAL MANAGEMENT

It is mandatory to maintain strict regular follow up for implant patients. Professional management include assessment of peri implant health, regular professional cleaning including mechanical as well as chemical debridement and when needed surgical intervention has to be carried out.

Mechanical Debridement

Ideally the implant patient has to be put on recall period of every 6 to 12 months. During the follow up visit supra and subgingival debridement of calculus and plaque has to be carried out by means of carbon fiber curettes. The recall interval has to be reduced for high risk patients, such as systemic diseases, smoking, poor oral hygiene, or genetic factors. 15

Phosphoric Acid Etching Gel

The studies have shown that the application of 35% phosphoric acid gel in peri implantitis sites associated with reduction in bacterial count and improved soft tissue health.16

Chlorhexidine

Chlorhexidine can be used in the form of local drug delivery in peri implant sulcus. Groenendijk et al showed that a 0.2% chlorhexidine injection in peri implant sites demonstrated a significant reduction in bacterial growth.17

RECOVERING THE HEALTH OF PERI-IMPLANT SOFT TISSUE

SURGICAL APPROACHES FOR SOFT TISSUE MANAGEMENT

Surgical approaches to augment the width of deficient mucosa can be performed prior to implant placement or when undesired exposure of submerged implants occurs.

Apically Positioned Flaps/ Vestibuloplasty

Aim of apically positioned flap surgery is to decontaminate the affected implant surface and exposing it into the oral cavity for its better self management by the patient, often accompanied by osteoplasty. This technique also enables the reduction of pocket depths, increased width of attached gingiva facilitating patient hygiene. A midcrestal incision followed by elevation of a double-layer flap. The inner layer of the flap was then sutured back while the external layer was apically sutured, thus deepening the vestibule. This technique is only recommended for non aesthetic regions.15,16

Access Flap Surgery

Access flap surgery is a surgical way to decontaminate the implant surface. It is recommended when bone loss is minimal. Following the flap elevation, decontamination will be carried by various means such as curettes, air-abrasion, ultrasonic devices, and lasers to enhance cleaning efficacy.17

Regenerative Techniques

Interpositional Free Gingival Graft18

Interpositional free gingival graft (iFGG) is performed at the time of implant placement to increase the keratinized tissue around dental implants. A mid crest horizontal incision was given followed by elevation of full-thickness buccal and lingual flaps. Non-submerged implants are placed, and healing caps are connected. The iFGG is harvested with an epithelium-connective part (E-C) and only connective tissue part (CT). The graft is rectangular in shape in the frontal view and wedge-shaped in the cross-sectional view. The graft is positioned at the recipient site, and the CT portion of the graft is inserted under the buccal flap and sutured to obtain a blood supply from the buccal flap and the underlying periosteum. The E-C portion is tied around the healing caps using sling sutures. The graft is then closely adapted to the lingual flap followed by interrupted suture in the interproximal area. Consequently, the buccal flap is positioned apically and fixed at the inferior border level of the E-C portion. These kinds of grafts achieve buccolingual and apicocoronal ridge augmentations. This procedure has advantages likee minimal shrinkage of the graft, better vascular supply to graft, deepened buccal vestibule and improved healing. (figure 2)

Subepithelial Connective Tissue Graft19

Subepithelial connective tissue graft (SCTG) procedures have now set the benchmark for the management of recession and soft tissue defects around natural teeth. However, there is ambiguity in the clinician's mind regarding the acceptance of SCTG around nonvital implants. This technique reconstructs an interdental papilla by elevating a facial envelope type of split-thickness flap followed by the harvesting of a suitable connective tissue graft internally from the palate and its placement under the flap in the interdental papilla area. Advantages include dual blood supply at recipient site, less technique sensitive, comfortable palatal wound, more predictable and excellent colour match.63

Vascularized Interpositional Periosteal Connective Tissue Flap20

This technique is preferred for simultaneous hard and large volume soft tissue augmentation. The procedure involves raising a subepithelial palatal connective tissue periosteal flap and rotating it into the recipient site. It is then positioned beneath the recipient flap and immobilized with sutures. During initial healing phase, a customized provisional restoration is recommended. (figure 3)

SURGICAL TECHNIQUES TO RESTORE PERI-IMPLANT PAPILLA:

Technique by Palacci (1995):21

In this technique, semilunar incisions were made in the flap at each implant. The first one started distal to the most mesial implant. The tissue was then rotated palatally to create a papilla between the implant and the tooth. Semilunar incisions were also made more distally around each abutment. Mattress sutures were taken. Desired papilla can be obtained in between the implants by this technique. (figure 4)

Technique by nemcovsky et al (2000):22

U-shaped incision is given with its divergent arms placed buccally. The adjacent papillae remain adhered to the adjacent teeth. The outer edges of the incisions and adjacent papillae are de-epithelized. A full thickness flap is raised, and a healing abutment is placed. Next split the flap from its center to divide it into two halves-mesial and distal. Each part is then positioned over the de-epithelized papillae and sutured to the palatal mucosa. (figure 5)

Technique by El Salam El Askary (2000):23

A prefabricated custom-made titanium papillary insert is used. It is pyramid-shaped titanium core of 2 to 3 mm of height and a base that is 3 mm buccolingually and 1 mm in the mesio-distal dimension. Self-tapping screws of 0.8 mm in diameter and 5 mm in length is used for securing the papillary insert into interimplant bone. It creates a hard metal support for the tissue instead of bone. Soft tissue closure is achieved through relaxing incisions (Figure 6).

Technique by Grossberg (2001):24

A horizontal incision is made on the palatal aspect of the crest of ridge and along the palatal gingival margin vertical releasing incisions are placed so that interdental papilla is not included in the incision. Full thickness buccal and palatal flap are elevated to uncover the implant. The buccal flap is modified by creating a midline double pedicle flap, which is then mobilized to mesial and distal aspects of the implant and stabilized with sutures (Figure 7).

Technique given by Azzi (2002):25

This technique can be employed in cases of little/no keratinized tissue present around dental implants. The buccal flap is released from its insertion to the bone beyond the mucogingival junction and papillae are also undermined. The connective tissue graft is then inserted into the pouch-like tunnel and has to submerge completely. The flap is coronally advanced. Postoperative healing shows satisfactory results.

Interimplant Regenerative Template:26

The interimplant regenerative template is used for providing the housing for graft material used for regeneration purpose. The use of template requires an inter implant space of minimum 3 mm. After the placement of implants, the bone is decorticated, to provide sufficient blood supply. The template is then placed on the ridge with its two perforated ends facing the alveolar ridge. After postoperative healing, the formation of the papilla like tissue is seen between the two implants. The long-term prognosis of this method is still under investigation and requires further assessment. (figure 8)

Omega-shaped Incision Technique by Bidra et al (2011):27

This technique can be performed during implant placement. With the help of a scalpel desired incison is given. This incison design starts at the mesiobuccal line angle of the tooth distal to the edentulous site and continued through the buccal sulcus to the mesial side emerging at the middle of the crest of the ridge. Then the incision is advanced by 5.5 mm before creating an omega-shaped and sparing a 4 × 4 mm area of soft tissue at the crest. At later stage, this intact area of soft tissue promotes the formation of the papilla like tissue between two implants. Next the incision is advanced by 3.5 mm and a papilla sparing vertical release incision is given. The full thickness mucoperiosteal flap is elevated and the omega- shaped area which is left intact. The crestal incision are excised and the placement of implants is carried out. Postoperatively, regeneration of the inter-implant papilla is seen. (figure 9)

DISCUSSION:

Osseointegration is a special kind of bone healing process, and the intact peri-implant seal plays an important role in protecting the alveolar bone from bacterial invasion in the oral cavity. However, because of the structural differences between implants and natural teeth, there are drawbacks in peri-implant soft tissue healing compared with natural teeth such as deeper probing depth, weaker connective tissue attachment, faster inflammatory expansion, and reduced vascular supply, making the implant more vulnerable to bacterial accumulations and other external stimulations. Thus, it is clear that implant surfaces necessitate more attention to the maintenance of peri-implant soft tissue health. It is also vital that patient self-management is rigorously employed, and this should be stressed at each dental consultation. Dentists have a variety of means to promote soft tissue health around implants, such as using both mechanical and chemical methods to remove plaque and calculus. However, when the implant surface is contaminated with peri-implantitis, the healthcare professional must utilize methods of decontamination, re-osseointegration, and re-adhesion of soft tissues around implant collars. Both nonsurgical and surgical techniques exist to facilitate this attachment; however, a great deal of research is still necessary in terms of comparing the different options available to dentists to generate long-term predictable results. Thus more importance should be given to the health and maintenance of soft tissues around implants.

	Contributor 1	Contributor 2	Contributor 3	Contributor 4
Concepts	√		√	√
Design	√	√	√	
Definition of intellectual content	√	√	√	
Literature search	√		√	√
Data acquisition		√	√	√
Data analysis	√		√	
Manuscript preparation	√	√	√	√
Manuscript editing	√	√	√	√
Manuscript review	√	√	√	√
Guarantor	√	√	√	√

CONCLUSION:

Following conclusion can be drawn from the present study:

Asymmetries are common finding in human beings.
The asymmetries decrease in magnitude as we approach higher in craniofacial regions.
Mandibular region shows the asymmetries of higher magnitude.
Left side dominance of mandibular asymmetry was appreciated.
Tip of the Nose and Centre of chin is shows marked asymmetry.
Most of the times Asymmetry goes unnoticed by the person and people surrounding them if it's within 4 mm.
Undergraduates' students who are in process of becoming future dentist are also not aware regarding the presence of asymmetry amongst them.

Financial support and sponsorship : Nil.

CONFLICTS OF INTEREST: There are no conflicts of interest.

ACKNOWLEDGEMENTS

To begin with, I bow my head in reverence before Almighty who has always blessed me with his bountiful grace throughout my life and for being my strength and shield. It gives me immense pleasure to express my deepest gratitude to all my teacher, collegues & students for their indispensable organizational constant help and timely guidance. Words seems inadequate to express my gratitude to my respected parents & my ever supportive family members for their immense support and unwavering faith and confidence in my abilities and it is what shaped me to be the person I am today. Last but not the least, I thank all those who, directly or indirectly, played role in successful completion of this dissertation.

REFERENCES:

1. Baumgarten, Alexander. Reflection on Poetry (1735).
2. Shah SM, Joshi MR. An assessment of asymmetry in the normal craniofacial complex. Angle Orthod 1978;48:141-8.
3. Thiesen G, Gribel BF, Freitas MPM. Facial asymmetry: a current review. Dental Press J Orthod. 2015 Nov-Dec;20(6):110-25.
4. Sheldon Peck, Leena Peck, and Matti Kataja (*1991*) Skeletal asymmetry in esthetically pleasing faces. The Angle Orthodontist: March 1991, Vol. 61, No. 1, pp. 43-48.
5. Severt TR, Proffit WR. The prevalence of facial asymmetry in the dentofacial deformities population at the University of North Carolina. Int J Adult Orthodon Orthognath Surg. 1997; 12:171–176.
6. Ramirez-Yañez GO, Stewart A, Franken E, Campos K. Prevalence of mandibular asymmetries in growing patients.Eur J Orthod 2011 Jun;33(3):236-42
7. Haraguchi S, Takada K, Yasuda Y. Facial asymmetry in subjects with skeletal Class III deformity. Angle Orthod. 2002 Feb;72(1):28-35.
8. Peck S, Peck L, Kataja M. Skeletal asymmetry in esthetically pleasing faces. Angle Orthod 1991;61:43-8
9. Goel S, Ambedkar A, Darda M, Sonar S. An assessment of facial asymmetry in Karnataka population. J Indian Orthod Soc 2003;36:30-8.
10. Haraguchi S, Iguchi Y, Takada K. Asymmetry of the face in orthodontic patients. Angle Orthod. 2008 May;78(3):421-6
11. Gribel BF, Thiesen G, Borges T, Freitas MPM. Prevalence of mandibular asymmetry in skeletal Class I adult patients. J Research Dent. 2014;2(3):189-97
12. Kim EJ, Palomo JM, Kim SS, Lim HJ, Lee KM, Hwang HS. Maxillofacial characteristics affecting chin deviation between mandibular retrusion and prognathism patients. Angle Orthod. 2011 Nov;81(6):988-93
13. Sheats RD, McGorray SP, Musmar Q, Wheeler TT, King GJ. Prevalence of orthodontic asymmetries. Semin Orthod. 1998 Sep;4(3):138-45.
14. Willems G, De Bruyne I, Verdonck A, Fieuws S, Carels C. Prevalence of dentofacial characteristics in a Belgian orthodontic population. Clin Oral Investig. 2001 Dec;5(4):220-6.
15. Samman N, Tong AC, Cheung DL, Tideman H. Analysis of 300 dentofacial deformities in Hong Kong. Int J Adult Orthodon Orthognath Surg.1992;7(3):181-5.

4 ORAL SIGNS AS A DIAGNOSTIC TOOL FOR MORBID DISEASE

Author: Dr Bijal Bhavsar, Dr Hiren Patel, Dr Haren Pandya,

Dr Bhavinkumar D Masariya

ABSTRACT:

Introduction

Many systemic diseases present with signs and symptoms related to oral cavity. Since these oral manifestations are detectable early in the progress of such diseases , they often contribute to the diagnosis of the corresponding systemic disease like leukemia[1]. Gingival and periodontal lesions are relatively frequent, often associated with mobility of the offending teeth and swelling. In such patients extraction sockets may not heal well and may lead to further progression of the infection and complications. The clinical manifestation of gingival enlargement differs based on its etiology.

CASE REPORT

A 37 years old female presented with a 02-months history of pain and swelling in upper left back tooth region which was small initially and gradually increased in size. She also complained of intermittent throbbing type of pain following which she underwent extractions of 24,25,26 at a private dental setup before 2 months. Even after getting multiple teeth extractions done, she didn't get pain relief, her pain and swelling got worse and the wound didn't heal properly. She gave history of prolonged bleeding even after mild trauma and after extractions of teeth. Her family and personal history was not significant. Upon general examination, her built and gait appeared normal with vital data within the normal range. Intraoral examination revealed ill defined, erythematous swelling in relation to the extraction sockets of 24,25,26 measuring 3X3 cm in size approximately, not crossing the midline. On palpation it was firm, indurated and tender with tendency to bleed.

On radiographic examination, orthopantomogram showed ill-defined erosion starting from distal aspect of 23 extending till the mesial aspect of the 27 also encroaching the left maxillary sinus. To tackle the diagnosis dilemma, we got the blood investigations done to plan a biopsy.

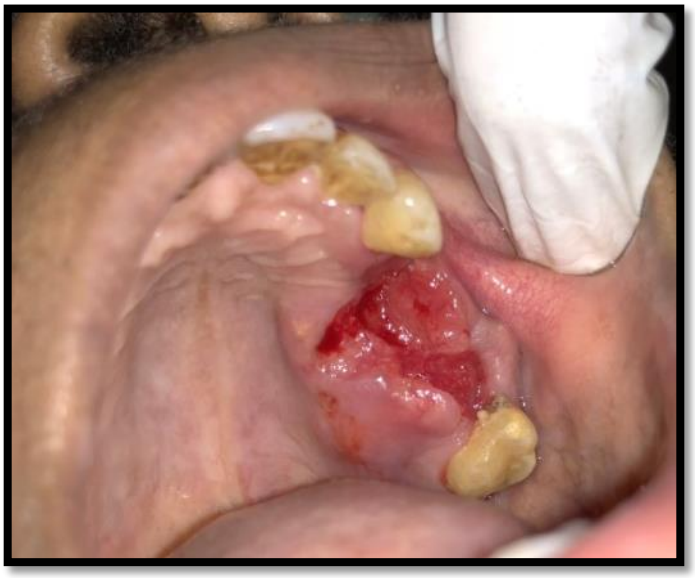


Figure 1: Pre-operative view

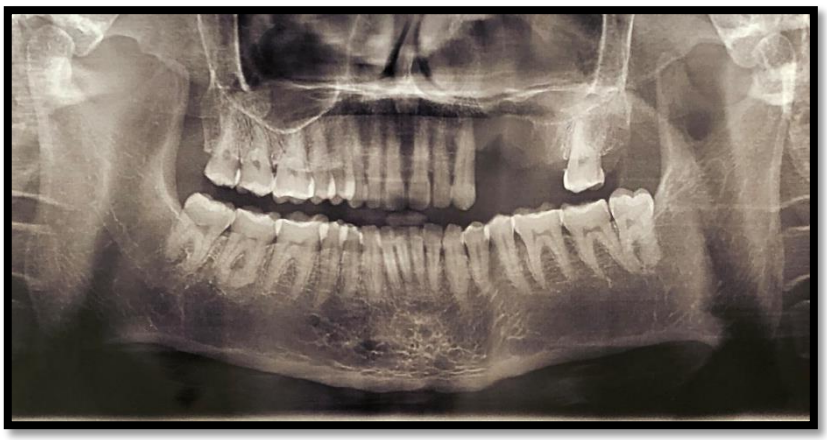
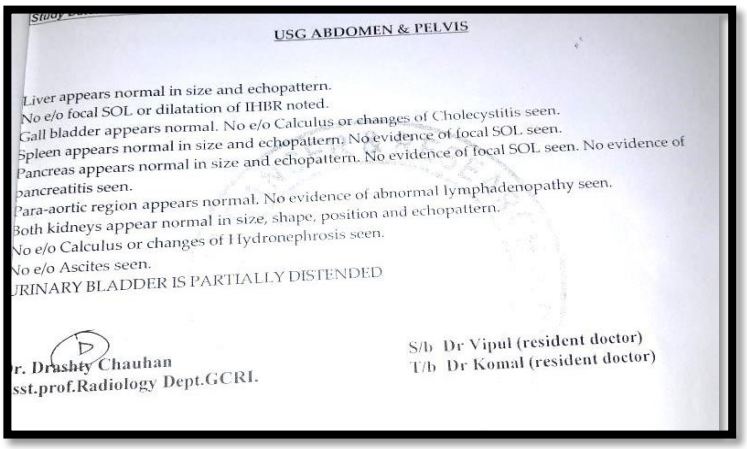


Fig 02 Preoperative OPG



USG ABDOMEN & PELVIS

Liver appears normal in size and echopattern.
No e/o focal SOL or dilatation of IHBR noted.
Gall bladder appears normal. No e/o Calculus or changes of Cholecystitis seen.
Spleen appears normal in size and echopattern. No evidence of focal SOL seen.
Pancreas appears normal in size and echopattern. No evidence of focal SOL seen. No evidence of pancreatitis seen.
Para-aortic region appears normal. No evidence of abnormal lymphadenopathy seen.
Both kidneys appear normal in size, shape, position and echopattern.
No e/o Calculus or changes of Hydronephrosis seen.
No e/o Ascites seen.
URINARY BLADDER IS PARTIALLY DISTENDED

r. Drashty Chauhan
sst.prof.Radiology Dept.GCRI.

S/b Dr Vipul (resident doctor)
T/b Dr Komal (resident doctor)

Fig 03 Ultrasonogram (Abdomen)

Routine blood profile was done. Her results were startling as her WBC count was 1510/cmm, platelet count was 34000/cmm with increased lymphocyte and SGPT count. We consulted a physician for the same who suspected coagulopathy to be the underlying cause, hence he advised to get the Ultrasonography (abdomen) and test for vitamin B12 done to rule out any liver dysfunction. Her USG(abdomen) was normal but she had deficient levels of cynocobalamin. Therefore, she was advised to get vitamin B12 therapy for 5 days and repeat the blood profile. Her WBC and platelet counts were still low post vitamin therapy , after getting the physician's consultation done he suspected some underlying detrimental cause related to the decreased production of the blood cells. She was advised to get the bone marrow biopsy done and consult a haematologist.

She underwent bone marrow biopsy which was suggestive of AML (Acute Myeloid Leukemia) showing increased peripheral blast cell population (31%) with high N:C ratio. She came to our opd post bone-marrow biopsy with a complaint of continuous bleeding from the same intraoral lesion. We had injected 10 ml of tranexamic acid intravenously after which it had stopped bleeding.

Differential diagnosis:

•Leukemia may mimic periapical inflammatory disease, clinically as well as radiographically.

•Oral manifestations of pancytopenia due to leukemia are indistinguishable from other causes of pancytopenia, such as adverse drug reactions, immune conditions, and viral infections.

•Other causes of gingival enlargement, such as drug induced or inflammatory hyperplastic gingivitis can also mimic leukemia clinically.

The patient had a CBCT which was done before she underwent extractions of 24,25 and 26 which seemed to have periapical pathology as bone loss in the same region was evident that was relevant with her history of throbbing type of intermittent pain with mobile teeth and pus discharge which can definitely lead us towards a wrong diagnosis.

Usually the diagnosis is founded on the basis of blood tests and bone marrow biopsy. Therapeutic approach of leukemia involves chemotherapy, radiotherapy, bone marrow transplantation, and supportive/ palliative care. Most commonly applied is chemotherapy, but other additional therapeutic supports are important too: transfusions of red blood cells or platelets, treatment with antibiotics to combat side effects of chemotherapy, etc. Chemotherapy involves most of the times three distinct steps: induction, followed by consolidation and finally the step of maintenance. Depending on the case/ form of leukemia, the duration of chemotherapy can prolong until 2 years. This patient had also undergone extensive chemotherapy.

CONCLUSION

As an oral healthcare provider, one shouldn't just look for the local causes of the patient's discomfort but should also pay some serious attention when such signs and symptoms are encountered that can help us reach proper diagnosis. If such malignant and hematological disorders like leukemia is present, relevant investigations should be done and other doctors should also be consulted who have better knowledge in this field so that the patient can get the benefits of the treatment as early as possible. Early diagnosis of leukemia is very much important before it worsens and oral manifestations serve us a key to resolve the diagnostic dilemma.

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Conflicts of interest : There are no conflicts of interest.

REFERENCES

1. 1.Stana, Marina,Dumitriu Anca.Oral manifestations in Acute Leukemia as the first sign;The Interdisciplinary Approach of Diagnosis and Treatment.J Mind and Medical Sciences 2015;02(2):186-191.
2. 2.Demirer,Ozdemir,Sencan,Ismail Marakoglu.Gingival Hyperplasia as an Early Diagnostic Oral Manifestation in AML:A Case Report.Eur J Dent 2007;1(2):111-114.
3. 3.Rashid A,Lee NG,Jakobee FA,Freitag SK.Epstein-Barr virus-positive polymorphous lymphoplasmacystic infiltrate of the lacrimal glands in patients with ALL.JAMA Opthal.2014,137(7):892-4.
4. 4.J.Kleinheinz,UMeyer,T.Buchner,G.Kosters.D Weingart,U.Joos(Mund Kiefer GesichtsChir 1997;1;57-60.
5. 5.Marucci,Torsten,hartmut Dohner.Molecular Genetics of Adult AML:Prognostic and Therapeutic Implications J Clin Onco 2011;29:475-486.
6. 6.Franch,Esteve,M Gracia Sarrion Perez.Oral Manifestations and Dental Management of patient with Leukocyte alterations.J Clin Exp Dent 2011;3(1):53-9.

5

Custom Metal Occlusal Inserts For Single Complete Denture : A Preventive Approach of Occlusal Wear : A Case Report

Author: Dr. Bhagyashree Sutaria ,Dr. Setu P Shah, Dr. Krishna Shah, Dr. Shreyansh Sutaria

ABSTRACT:

Several difficulties are encountered in providing a successful, single complete denture treatment. One of the major concern is wearing out of the occlusal surfaces of the acrylic teeth of a complete denture with its use over a period of time specially in case of single complete denture opposing natural dentition. Wear of the occlusal surface of the denture is a known fact which leads to subsequent changes in jaw relation, vertical dimension, loss of aesthetics, aged looks and decrease in masticatory efficiency. Re-fabrication of new denture set over a period of time, inclusion of highly cross linked acrylic teeth, amalgam or metal inserts on occlusal surface, use of composite, gold or metal occlusal surface etc. are some of the treatment options available to counteract that problem. Several articles have described methods to construct gold and metal occlusal surfaces, some of which are time-consuming, expensive and require many cumbersome steps. For a successful insertion of the complete denture the occlusal surfaces have been modified with cast metal using the lost wax technique which is harmonious with mandibular movement recorded by functionally generated path technique.

KEYWORDS :- Metal insert, single complete denture, combination syndrome, occlusal wear.

INTRODUCTION

Thought is the child of action and necessity is the mother of invention. This is the soul of newly based dentistry. A little diverse approach from traditional modalities available in dentistry can solve patient's problem to a greater extent, thereby adding to his well-being and comfort. Occlusal surfaces of posterior teeth of complete dentures that are harmonious with mandibular movement contribute to masticatory efficiency and stability of dentures. Historically, cast gold occlusal surfaces for complete or removable partial dentures have been fabricated with retentive loops or beads and then luted to prepared denture teeth1. There are many articles describes the construction of metal occlusal surfaces for the patients having the history of occlusal attrition, bruxism, oro-facial tardive dyskinesia, self-induced excessive chewing and idiopathic parafunctional mandibular movement.2,3

Metal occlusal surface may be indicated, a) when constructing a denture, that is to be opposed by reconstructed dentition with metal occlusal surfaces, b) when constructing a complete denture, removable partial denture or overdenture with a functionally generated path concept in which considerable modification of the denture teeth is necessary to place the occlusal surface and core in harmony, c) to reinforce and strengthen the denture and d) when special wax carving techniques are completed on a fully adjustable articulator for the development of a functional occlusion.2

In addition, when a dentate arch opposes an edentulous arch, the edentulous arch is usually adversely affected because of the forces generated.4 Koper believes that occlusal problems and denture-base fractures seen in the single complete denture are the result of one or all of the following :- (1) occlusal stress on the maxillary denture and the underlying edentulous tissue from teeth and musculature accustomed to opposing natural teeth, (2) the position of the

mandibular teeth, which may not be properly aligned for the bilateral balance needed for stability, and (3) flexure of the denture base.5

Several methods have been advised in the dental literature to construct metal occlusal surfaces on the acrylic resin teeth to prevent wear and increase chewing efficiency and metal based denture to overcome the denture base fracture.1-10 This article presents quick, simple and relatively inexpensive procedure for construction of metal occlusal surfaces on complete dentures with metal based denture.

CLINICAL REPORT

A 52-years-old female patient reported in the Department of Prosthetic and Crown & Bridges, College of Dental Sciences and Research Centre, Bopal with the chief complaint of worn out denture occlusal surfaces and difficulty in mastication and she wanted a denture in which chewing efficiency is maintained as the time passes but at lowest cost possible. She was bothered only about the functional efficiency of the denture and not about the esthetics.

On clinical examination, the patient was found to be completely edentulous with well formed upper ridge opposing complement of natural dentition and a Class 1 : Orthognathic ridge relation was present. In the mandibular arch 36 was missing. [Figure-1] Mucosa was normal. Saliva was of medium consistency and patient was co-operative and philosophical according to House classification. History revealed that the patient was wearing the metal based denture since 2 years. Because of metal denture base, denture was not fractured inspite of opposing natural dentition but posterior acrylic teeth were totally worn off. [Figure - 2]

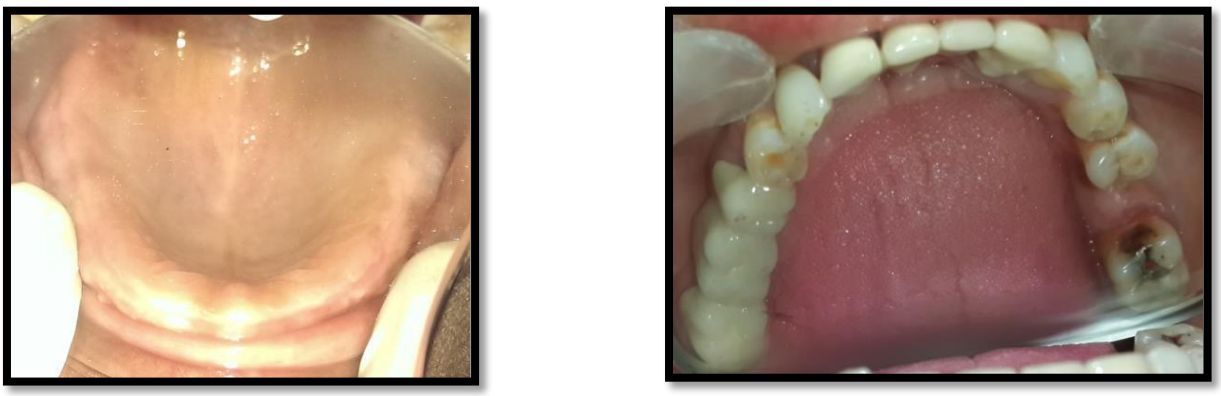

Figure - 1 :- Completely edentulous maxillary arch opposing natural teeth in mandibular arch.

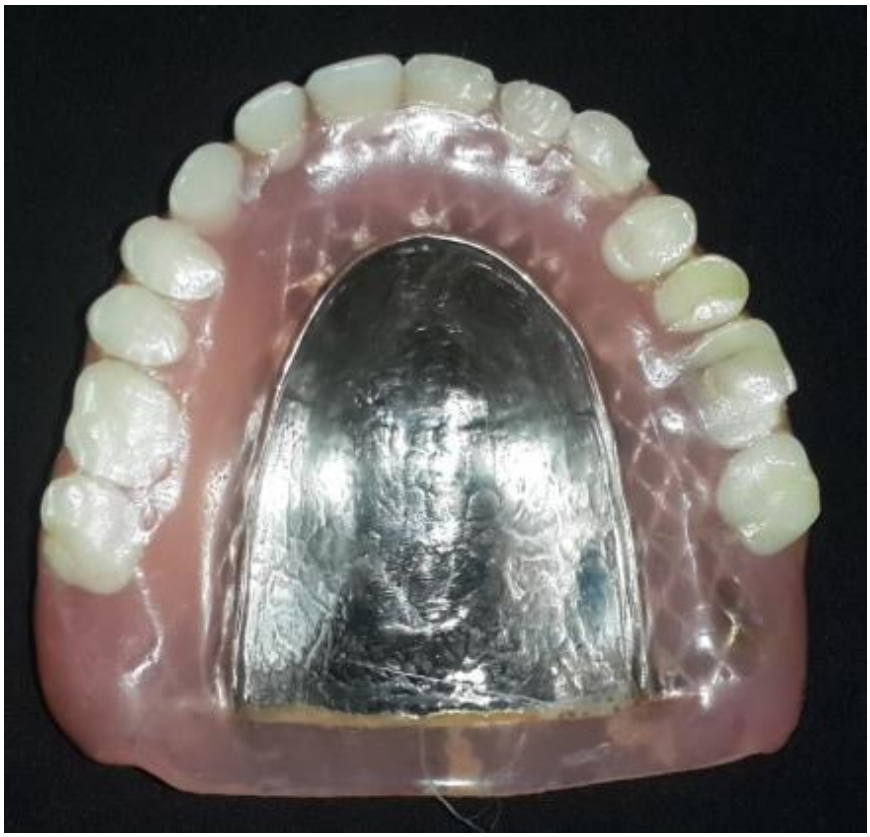

Figure - 2 :- Existing denture with worn off posterior teeth.

Various treatment options were described to the patient like, (a) denture or implant supported overdenture with highly cross-linked acrylic teeth, (b) denture or implant supported overdenture with metal occlusal surface, (c) implant supported fixed prosthesis.

Patient was ready to compromise the esthetics of the denture but want denture with low cost, the best functional efficiency and had no time constraint. Therefore, the denture with the metal occlusal surface and metal denture base was planned as the patient's all concerns were addressed. In addition, it improves the degree of masticatory ability, prevents the attrition of the teeth and increases the fracture resistance of denture base.

PROCEDURE

The preliminary impressions were made of the upper and lower arch, followed by final impression of the upper arch with zinc oxide eugenol paste. Then, the maxilla-mandibular relationship was recorded of the upper edentulous arch to the lower full fixed partial denture in the conventional manner. Face-bow transfer records were taken and these, along with maxillomandibular relationship, were transferred to the semi-adjustable articulator.

Mounting of upper and lower casts were done on the semi-adjustable articulator. Following mounting, teeth arrangement was done using cross-linked acrylic teeth and try-in was carried out. [Figure - 3] After try-in, the occlusal surface of upper posterior denture teeth was reduced with the help of carbide trimming bur so as to create 2-4 mm of interocclusal clearance. [Figure - 4] The articulator was moved into lateral and protrusive positions to verify the space adequacy. The central portion of the teeth was reduced slightly more than the cusps to gain mechanical retention of the casting. [Figure - 5]

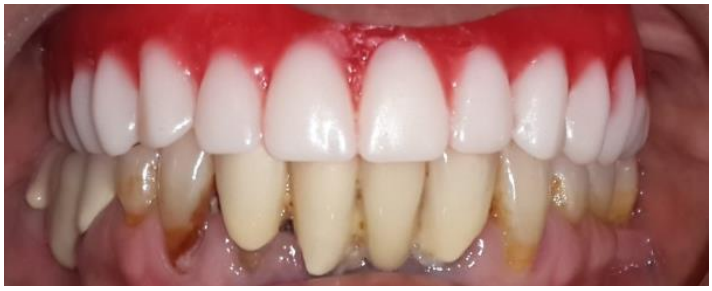

Figure - 3 :- Final try-in.

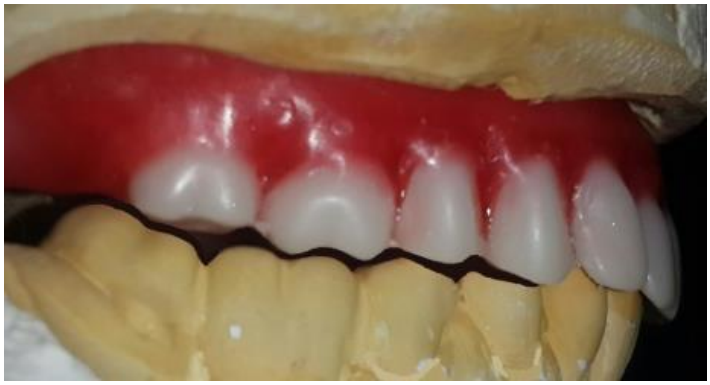

Figure - 4 :- Interocclusal clearance. (2-4 mm)

Then the inlay wax was added on the prepared denture teeth and the occlusal surface of the individual teeth was contoured. [Figure - 6] Secondary anatomic details were carved and the waxed occlusion was checked in centric, lateral and protrusive positions. The wax patterns for the cast metal were contoured following Functionally Generated Path Technique (Hardy chew-in technique) in order to adjust the upper single complete denture to the bilaterally balanced occlusion.11-15

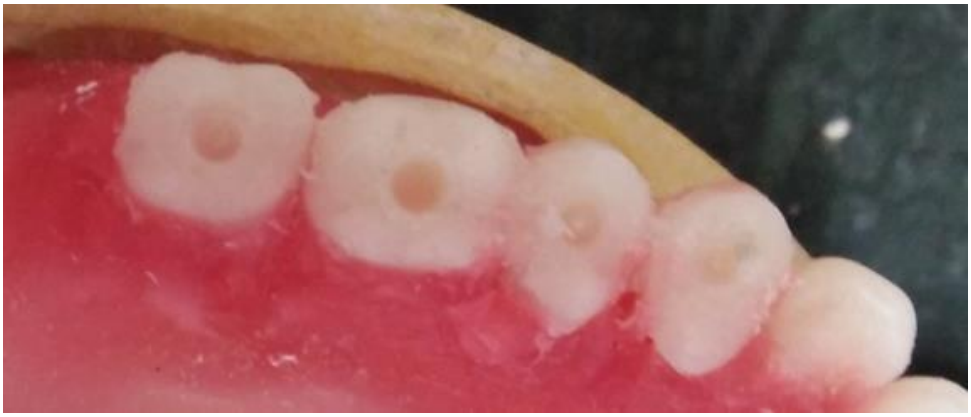

Figure - 5 :- Central portion of the teeth was reduced slightly more than the cusps to gain mechanical retention of the casting.

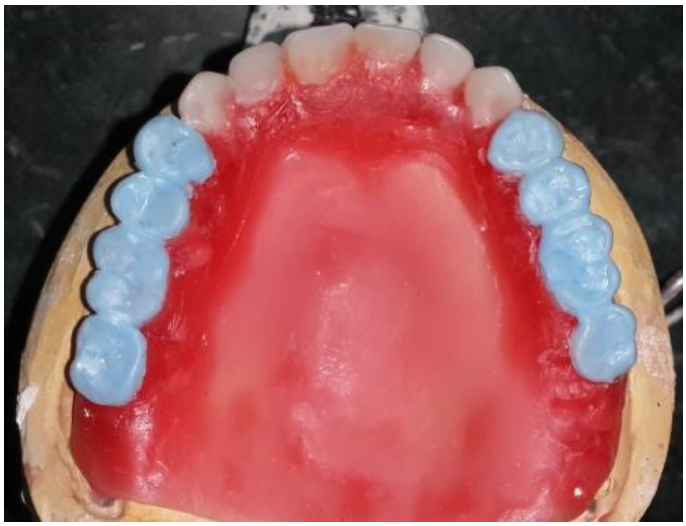

Figure - 6 :- Wax pattern made on prepared teeth.

Wax pattern was carefully removed from the teeth and a 14-gauge half-round casting wax was attached on the inferior surface of the wax patterns in order to give rigidity to the castings. Small wax beads were also added to it, so as to provide mechanical retention with the acrylic resin. [Figure - 7] Sprue formers were attached. [Figure - 8] The patterns were invested with phosphate bonded investment and the metal casting process was completed using a Ni-Cr alloy. After divesting the castings, the metal occlusal surfaces were recovered and polished. [Figure - 9]

Further reduction of the resin teeth was done to accommodate the 14-gauge half-round retentive strip. Polished castings were positioned at their respective sites on the denture teeth ensuring that each casting was completely seated. The occlusion was checked in centric, lateral and protrusive positions. Self cure white acrylic was used to seal the casting and to modify the buccal and lingual resin contours.

Figure - 7 :- Small beads on inferior surface of the wax pattern for better retention

Figure - 8 :- Sprue attached to wax pattern.

Wax pattern was carefully removed from the teeth and a 14-gauge half-round casting wax was attached on the inferior surface of the wax patterns in order to give rigidity to the castings. Small wax beads were also added to it, so as to provide mechanical retention with the acrylic resin. [Figure - 7] Sprue formers were attached. [Figure - 8] The patterns were invested with phosphate bonded investment and the metal casting process was completed using a Ni-Cr alloy. After divesting the castings, the metal occlusal surfaces were recovered and polished. [Figure - 9]

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Figure - 9 :- Finished and Polished metal occlusal inserts.

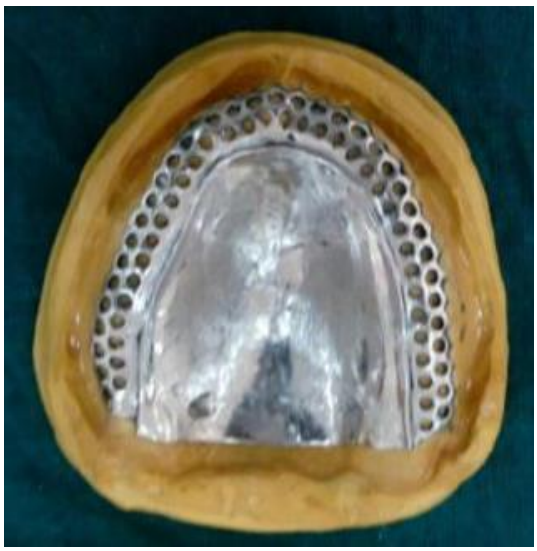
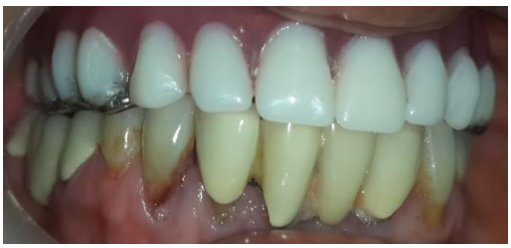


Figure - 10 :- Metal denture base.

The denture teeth were carefully removed along with the metal occlusal from the articulator for flasking. Before flasking, the mould of the master cast was made with reversible hydrocolloid (Agar Agar). A refractory cast was poured with ethyl silicate bonded investment material. On the refractory cast, the denture base pattern wax was adapted and the sprues were attached and invested. The denture base was casted with cobalt chromium metal. [Figure - 10]

The flasking of the teeth with metal occlusal surfaces was done in the usual manner. After dewaxing, the mold was flushed with clean boiling water to thoroughly remove the wax residues. Tin foil substitute was painted on the stone mold. Before packing, metal denture base was placed on master cast. Packing was done with heat cure pink acrylic resin. This heat cure acrylic was flown between beeds and this way heat cure resin retained the metal occlusal inserts in denture. After curing, the dentures were finished, polished [Figure - 11] and were ready to be delivered to the patient.

Figure - 11 :- Finished and polished denture.



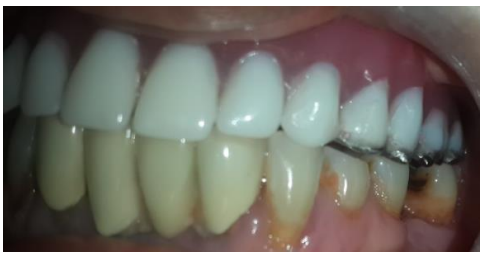


Figure - 12 :- Denture insertion.

DISCUSSION:

The use of standard technique with required indicated clinical and laboratory alterations may contribute to greater clinical success. With this technique there is increase in one clinical and laboratory step, but had contributed significantly in solving patient's long term problem. Metal or gold occlusal surfaces have been reported to cause minimal wear to opposing occlusal materials and increased chewing efficiency.16,17 Metal occlusal surface has advantages of inherent physical property of metal, the adaptability of the occlusal surface and psychological advantage. This technique should be considered in cases where the prosthetic occlusion is in contact with enamel, composite resin, porcelain, or a combination of such materials.6 There is no cement or bonding agent used to secure the castings to the denture teeth. Casting is retained in teeth by metal beeds provided on the internal surface of the casting through heat cure acrylic resin. As a result, discoloration will not occur at the interface, and the castings will not become loose.16 The esthetic acceptability is controlled by the amount of reduction to the prepared teeth and by avoiding an unsightly layer of discolored luting agent on facial surfaces. Instead of individual units, single joint unit is fabricated to improve the retention and provide an ease in finishing and polishing of the casting. This technique allows for precisely designed occlusal relationships beyond those possible with stock denture teeth.

Alternative to metal occlusal surface, porcelain teeth can be used but they contribute to maximum stress, brittle, expensive and mechanical locking with denture base.18,19 Silver amalgam filling may be used but will cover only occlusal fossae, pit and fissure areas but not the complete occlusal surface. This will be mostly effective in cases with single complete denture but the advantages are economical and require less clinical and laboratory steps. Some author advocates the use of light cure composite resin to duplicate the occlusal surface. Although the composite resin on occlusal surfaces will wear, but the rate of wear is less than that of the most acrylic resin denture teeth.20

In addition, cobalt chromium bases in maxillary denture reduce functional deformation and thrust to the supporting tissues occurring in the anterior part of the maxilla.21 Besides rigidity and fracture resistance these metal bases have several other added advantages like excellent strength to volume ration, good adaptation to supporting tissues, enhanced control of denture plaque, high thermal conductivity, high biocompatibility, very little dimensional changes in time through fluids absorption and does not interfere with phonation due to its decreased bulk which also makes the denture light weight.22

In alternate treatment options, (a) implants could not be placed because of high cost, needed surgical intervention and also increased chair side time, (b) crossed linked acrylic teeth could not be used, since they also tend to wear off when opposed by metal occlusal contacts.

SUMMARY & CONCLUSION

In a nut shell, the present approach towards the patient's diverse problem has served as a better treatment modality. The approach seemed to be best suited for the patients not too keen on posterior aesthetics. To satisfy unique clinical requirements, it is sometimes appropriate to employ denture teeth having metal occlusal surfaces. An effective technique is presented which permits denture teeth to be constructed with custom made metal occlusal surfaces. Acrylic resin is attached to the metal occlusal surfaces via direct resin processing to the internal metal beads.

The metal denture bases are good thermal conductors, less bulky and provide strength to denture. Patient's opinion is being taken monthly about the denture use. Patient seemed to be happy and satisfied with the functional efficiency of the denture with no need for refabrication.

REFERENCES

1. Lloyd PM. Laboratory fabrication of gold occlusal surfaces for removable & implant supported prostheses. J Prosthodont 2003;12(1):8-12.

2. Wallace DH. The use of gold occlusal surfaces in complete and partial dentures. J Prosthet Dent 1964;14:326-33.

3. Koehne CL, Morrow RM. Construction of denture teeth with gold occlusal surfaces. J Prosthet Dent 1970;23:449-55.

4. Stephens AP. The single complete denture. In: Sharry JJ, editor. Complete denture prosthodontics. 3rd edition. New York: McGraw-Hill Book Co;1974:241–65.

5. Koper A. The maxillary complete denture opposing natural teeth: problems and some solutions. J Prosthet Dent 1987;57(6):704–7.

6. Elkins WE. Gold occlusal surfaces and organic occlusion in denture construction. J Prosthet Dent 1973;30:94-8.

7. Schneider RL. Custom metal occlusal surfaces for acrylic resin denture teeth. J Prosthet Dent 1981;46:98-101.

8. Krammer R Von. Modified artificial occlusal surfaces. J Prosthet Dent 1973;30:394-402.

9. Lee H and Oster C. A technique to fabricate metal occlusal surfaces for the overlay removable partial denture. J Prosthet Dent 2006;96:456-57.

10. Schultz AW. Comfort and chewing efficiency in dentures. J Prosthet Dent 1951;1:38-48.

11. McDermott IG and Roewe RF. The Hardy chew-in technique : A modified procedure. J Prosthet Dent 1982;48:202-05.

12. Stansbury C B. Single denture construction against a non-modified natural dentition. J Prosthet Dent 1951;1: 692-699.

13. Rudd and Morrow : Occlusion and single denture. J Prosthet Dent 1973;30:4.

14. Vig R G. A modified chew in and functional impression technique. J Prosthet Dent 1964;14: 214-20.

15. John. J. Sharry, Complete denture prosthesis, 3rd edi.;1974:316.

16. Barco MT, Synnott SA. Precision metal occlusal surfaces for removable partial dentures. Int J Prosthodont 1989;2:365-67.

17. Awinashe VN and Nagda SJ. A comparative study of the masticatory efficiency in complete dentures using acrylic and metal occlusal posterior teeth-Photo-colorimetric analysis. J Indian Prosthodont Soc 2010;10(2):112–17.

2008;3:96-99.

18. A. Ekfeldt and G. Oilo. Occlusal contact wear of prosthodontic materials. An in vivo study. Acta Odontologica Scandinavica, 1988;46(3)159–69.

19. A. Ekfeldt, B. Fransson, B. S¨oderlund, and G. Oilo. Wear resistance of some prosthodontic materials in vivo. Acta Odontologica Scandinavica 1993;51(2):99–107.

20. Vergani CE, Giampaolo ET, Cucci AL. Composite occlusal surfaces for acrylic resin denture teeth. J Prosthet Dent 1997;77:328-31.

21. Shimizu H, Tsue F, Obukuro M, Kido H, Takahashi Y, Ohmuro H. Fracture strength of metal-based complrte maxillary dentures with a newly designed meta framework. Int Chin J Dent 2005;5:35-8.

22. Marcaupeanu C, Gogupa L, Jivanescu A, Demjan E, Bratu D. Titanium complete denture base in a patient with heavy bruxism: a clinical report. J Exp Med Surg Res

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Perception of Individual towards orthodontic treatment need and its relationship with severity of malocclusion

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ABSTRACT:

Introduction: The study of Orthodontics is indissolubly connected with that of art related to the human face. The facial aesthetics is of paramount importance to Orthodontist. Aim: The purpose of the present survey is to check prevalence and awareness regarding apparent facial asymmetry amongst undergraduates' students who are in the process of becoming future dentists. Method: 150 samples were clinically examined mainly in yaw (Sagittal) and Roll (Transverse) dimensions with reference to Mid saggittal reference plane(MSR).Maxillary and Mandibular Skeletal and dental midlines were checked, chin and nose projection, CR-CO discrepancy, maxillary arch width, Occlusal plane, Molar relation, Overjet, Overbite, Crossbite other dental features were examined. Results: Prevalence of Asymmetry 30.7%(n=46), Amongst them Skeletal 47.82%(n=22), Dental 4.35%(n=2), Both 47.82%(n=22). Asymmetry present on left side (76.08%) more than right (23.91%). Maxillary skeletal asymmetry 2.17%, Mandibular skeletal asymmetry 34.38%, chin deviation 67.39%, Nose deviation 47.83%, Maxillary and Mandibular midline not matching in 41.3%, Maxillary width not equally wide in 6.52%, Occlusal cant present in 21.74%. In these 46 undergraduates only 26.08% self aware and 8.69% by society. Conclusion: Asymmetry is more common findings in individuals but most of the times it goes unnoticed if it falls within 4 mm.

Key Words: Apparent asymmetry, Mid saggittal reference plane (MSR), prevalence, awareness.

INTRODUCTION:

Orthodontics has been helping people by correcting several malocclusive traits that have psychological as well as social impact. Crowded, irregular, and protruding teeth have been a problem for some individuals since antiquity, and attempts to correct this disorder go back at least to 1000 BC. Primitive orthodontic appliances have been found in both Greek and Etruscan artifacts. Malocclusion has been considered the third highest oral health priority by the World Health Organization. Since the state of malocclusion has such critical importance, it is imperative that factors associated with a patient wanting to treat his/her malocclusion should be well understood. Evaluating these factors helps us understand patient's psychology towards the treatmentneed and priorities of patient thus enabling us to provide a "patient statisfactory" treatment.

Orthodontic rehabilation is an elective procedure in most patients. Subjects with severe malocclusion might not feel the need to get the malocclusion corrected while subjects with minimal malocclusion might have a strong desire to get the malocclusion treated. The desire for orthododntic treatment seems to be influenced by various factors such as social and cultural characteristics in different populations as well as gender, self-perceived esthetics and function, and malocclusion severity.Understanding this factors can help the clinician estimate the cooperation during treatment, the prognosis of the case, and posttreatment satisfaction. Orthodontists and administrators of healthcare services should recognize this network of interrelations with the aim of achieving a favorable outcome for the patient as well as improving the cost effectiveness of the services offered.

Malocclusion can be considered a public health problem due to its high prevalance and prevention/treatment possibilites. The orthodontic treatment varies in every individual according to the severity of malocclusion. Indicies such as DAI(Dental Aesthetic Index) (developed in United State of America and and integrated into the International Collaboration Study of Oral Health Outcomes by the World Health Organization (W HO, 1989) as an international index) and IOTN index (P.H Brook and W.C Shaw in 1989) can be used as a tool to divide and quantify any population on the basis of severity of malocclusion and orthodontic treatment need.

The indices linksclinical and aesthetic components mathematically to produce a single score that combines physical and aesthetic aspects of occlusion, including patient perceptions. Patient perception differs individually and ethnic factors might have an effect at regional aspect. Thus quantifiying a regional population and studying various perception factors of individuals according to severity of malocclusion can help us understand patient psychology at ethnic level.

This can help us plan our resources and also in patient counselling when needed. Thus this study was done keepin the following aims in mind:

Aims:

- To determine the factors involved in seeking orthodontic treatment.
- To determine need of orthodontic treatment need through IOTN and DAI index
- To determine the relationship between treatment need and its awareness in individuals

MATERIALS & METHODS:

A questionarrie survey of 150 patients visiting for the first time, was carried out inthe Department of orthodontics and Dentofacial orthopaedics, AMC Dental college, Khokhra, Ahmedabad 380008.Approval for the survey was taken from institutional review board and informed consent of the patients, parents/guardians of children were obtained prior to the questionnaire interview. Patients who were not willing to participate in the study, who are alreading undergoing orthodontic treatment, mentally challenged,medically compromised were excluded. The questionnaire had 10 questions, the question were directed to evaluate the perception and explore the reasons responsible for the patient wanting to undergo orthodontic treatment. All subjects were examined by a single examiner by using a mouth mirror and a periodontal probe.

The questions asked are given below

1)Are you aware of dental malocclusion?

A) Yes B) No

2) Who is the first person to notice your dental malocclusion?

A) Self B) Mother C) Father D)Dentist E) Others

3)Who is the first person to suggest orthodontic treatment?

A) Parents B) Relatives/Friends C) Self D) Dentist E) Others wearing appliance

4)Do you think your self confidence will Improve after orthodontic treatment?

A) Yes B) No

5)Are you expecting good career opportunities after your orthodontic treatment?

A) Yes B) No

6)Do you think your biting and chewing will Improve after orthodontic treatment?

A) Yes B) No

7)Do you have any problem while speaking?

A) Yes B) No

8)Do you think your dental health will Improve after orthodontic treatment?

A) Yes B) No

9)Do you think your facial and dental appearance will Improve after orthodontic treatment?

A) Yes B) No

10) Do you have any pain/clicking sound around your ears(at the temporomandibular joint)

A) Yes B) No

Table 1 : Questionnaire

The questions were aimed to evaluate patients' perception regarding esthetic functional concerns of malocclusion. The need of treatment owing to aesthetics was determined by DAI index, whilst the need of treatment owing to severity of malocclusion was determined by IOTN (Index Of Orthodontic Treatment Need).

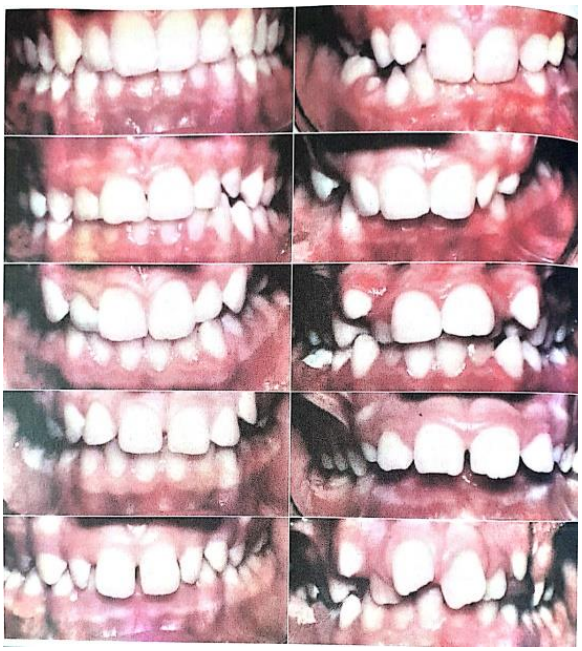
DAI is a rank-ordered on a continoud scale to assess severity levels in order tp prioritize treatment need. The components of DAI index with its assigned score is given below

DAI component	Rounded weight
1. Number of missing visible teeth (incisors, canines, and premolars in maxillary and mandibular arch)	6
2. Crowding in incisal segment (0=no segments crowded, 1=1 segment crowded, 2=2 segments crowded)	1
3. Spacing in incisal segment (0=no spacing, 1=1 segment spaced, 2=2 segments spaced)	1
4. Midline diastema, in millimetres	3
5. Largest anterior maxillary irregularity, in millimetres	1
6. Largest anterior mandibular irregularity, in millimetres	1
7. Anterior maxillary overjet, in milimetres	2
8. Anterior mandibular overjet, in millimetres	4
9. Vertical anterior openbite, in millimetres	4
10. Anteroposterior molar relationship, largest deviation from normal either left or right (0=normal, 1=½ cusp mesial or distal, 2=1 full cusp or more mesial or distal)	3
11. Constant	13
Total	DAI score

Malocclusion severity	Treatment need	DAI Score
Without abnormality or mild malocclusion	Little or no need	≤25
Defined malocclusion	Elective	26 to 30
Severe malocclusion	Highly desirable	31 to 35
Very severe or disabling malocclusion	Indispensable	≥35

Table 2: Dental Aesthetic Index

IOTN index places patients in five grades from "no tratment need" to "very great treatment need". It has two components, aesthetic component and health component.



Grade 5 (Extreme/Need Treatment)
5. i Impeded eruption of teeth (except third molars) due to crowding, displacement, the presence of supernumerary teeth, retained deciduous teeth, and any pathological cause.
5. h Extensive hypodontia with restorative implications (more than one tooth per quadrant) requiring preprosthetic orthodontics.
5. a Increased overjet greater than 9 mm. 5. m Reverse overjet greater than 3. 5 mm with reported masticatory and speech difficulties.
5. p Defects of cleft lip and palate and other craniofacial anomalies.
5. s Submerged deciduous teeth.
Grade 4 (Severe/Need Treatment)
4. h Less extensive hypodontia requiring pre-restorative orthodontics or orthodontic space closure (one tooth per quadrant). 4. a Increased overjet greater than 6 mm but less than or equal to 9 mm.
4. b Reverse overjet greater than 3. 5 mm with no masticatory or speech difficulties.
4. m Reverse overjet greater than 1 mm but less than 3. 5 mm with recorded masticatory or speech difficulties.
4. c Anterior or posterior crossbites with greater than 2 mm discrepancy between retruded contact position and intercuspal position.
4. l Posterior lingual crossbite with no functional occlusal contact in one or both buccal segments.
4. d Severe contact point displacements greater than 4 mm.
4. e Extreme lateral or anterior open bites greater than 4 mm.
4. f Increased and complete overbite with gingival or palatal trauma.
4. t Partially erupted teeth, tipped, and impacted against adjacent teeth.
4. x Presence of supernumerary teeth.
Grade 3 (Moderate/Borderline Need)
3. a Increased overjet greater than 3. 5 mm but less than or equal to 6 mm with incompetent lips.
3. b Reverse overjet greater than 1 mm but less than or equal to 3. 5 mm.
3. c Anterior or posterior crossbites with greater than 1 mm but less than or equal to 2 mm discrepancy between retruded contact position and intercuspal position.
3. d Contact point displacements greater than 2 mm but less than or equal to 4 mm.
3. e Lateral or anterior open bite greater than 2 mm but less than or equal to 4 mm.
3. f Deep overbite complete on gingival or palatal tissues but no trauma.
Grade 2 (Mild/Little Need)
2. a Increased overjet greater than 3. 5 mm but less than or equal to 6 mm with competent lips.
2. b Reverse overjet greater than 0 mm but less than or equal to 1 mm.
2. c Anterior or posterior crossbite with less than or equal to 1 mm discrepancy between retruded contact position and intercuspal position.
2. d Contact point displacements greater than 1 mm but less than or equal to 2 mm.
2. e Anterior or posterior openbite greater than 1 mm but less than or equal to 2 mm.
2. f Increased overbite greater than or equal to 3. 5 mm without gingival contact.
2. g Pre-normal or post-normal occlusions with no other anomalies.
Grade 1 (No Need) 1. Extremely minor malocclusions including contact point displacements less than 1 mm.

Table 3: Index of Orthodontic Treatment Need

RESULTS:

150 individuals were interviwed for the questionarrie out of which 66 were male and 84 were female.The pie diagram of division of population sample based on IOTN index is shown in figure 1 and division of population sample based on DAI index is shown in figure 2.

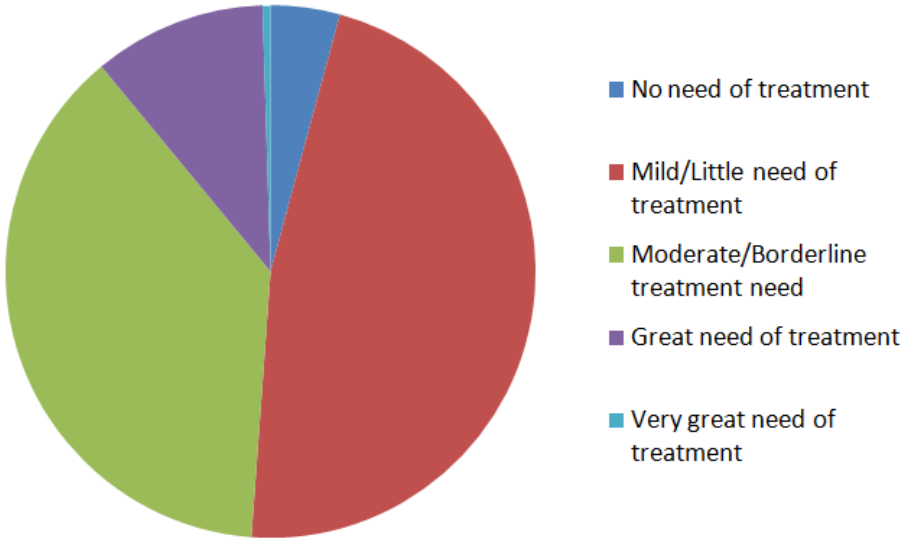


Figure 1: Population division based on IOTN index

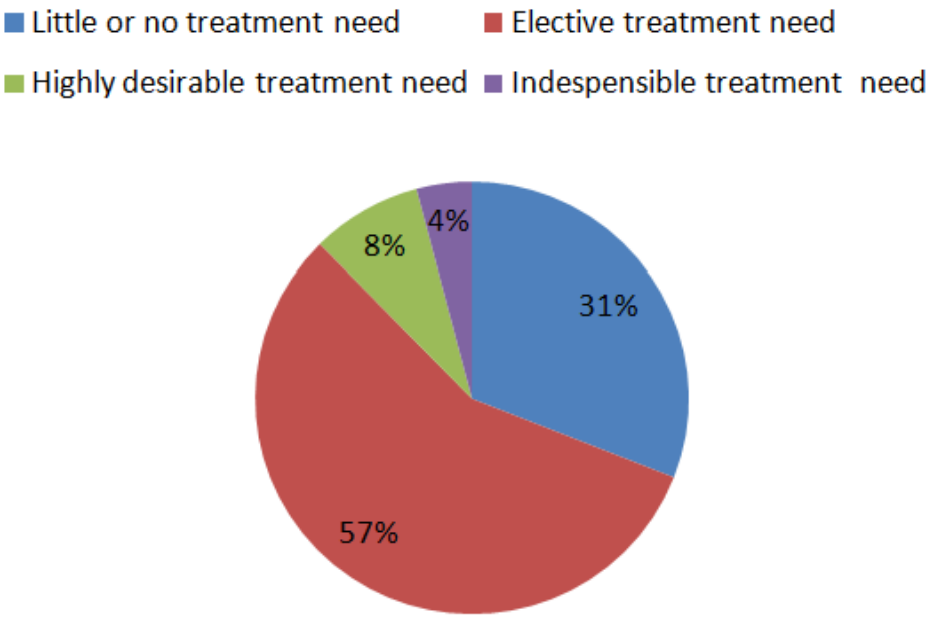


Figure 2: Population division based on DAI index

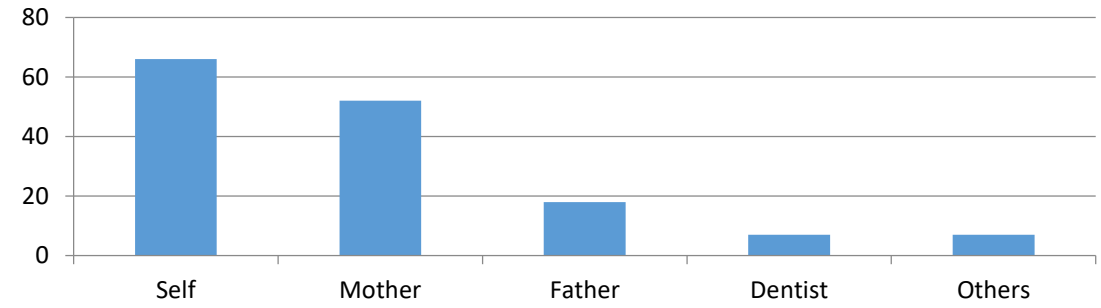


Figure 3: First person to notice malocclusion

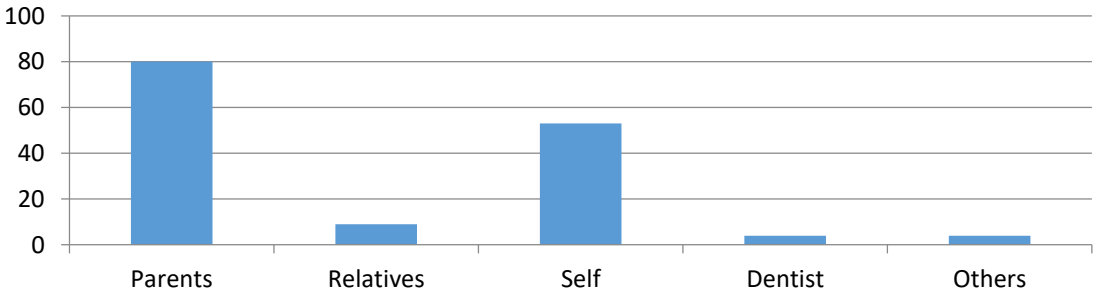


Figure 4: individual to insist for treatment

DISCUSSION:

William Osler, a Canadian scientist has quoted "The good physician treats the disease; the great physician treats the patient who has the disease" . To stand true to this quote, it is essential for us to understand complete psychology of patient's seeking our treatment and treat them accordingly. Malocclusion can have psychological impact, the intensity of social setback can vary from very little to as much as being socially handicapp. Thus it is imperative that an orthodontist has sound knowledge of patient's perception and attitude towards the treatment before commencing any procedure.

Figure 1 divides the population when classified for treatment need based on severity of malocclusion. Figure 2 divides the population when classified for treatment need based on severity of malocclusion. Figure 3 clearly shows that most individuals opting for orthodontic treatment are self motivates, while parent/guardian's are the one that insist a patient fo go for orthodontic treatment

On further studying figure 1, it was noted that, out of the 7 subjects that had little or no treatment need 4 subjects belived they will experience a positive change in confidence if they opt for orthodontic treatment,6 subjects belived they will experience positive change in apperance no subject had any difficulty in speech or mastication, 1 subject belived his oral health will improve and their chewing efficiency will improve if they opt for the treatment

Of the 67 subjects with mild treatment need 60 subjects belived they will experience a positive change in confidence if they opt for orthodontic treatment,65 subjects belived they will experience positive change in apperance no subject had any difficulty in speech or matiucation, 55 subjects belived their oral health will improve and their chewing efficiency will improve if they opt for the treatment

Of the 54 subjects that had moderate/borderline treatment need 52 subjects belived they will experience a positive change in confidence if they opt for orthodontic treatment,53 subjects belived they will experience positive change in apperance no subject had any difficulty in speech or mastication, 49 subjects belived their oral health will improve and their chewing efficiency will improve if they opt for the treatment.

Of the 15 subjects that had great treatment need all subjects belived they will experience a positive change in confidence and apperance, no subject had any difficulty in speech or mastication, all subjects belived their oral health will improve and their chewing efficiency will improve if they opt for the treatment

Of the 4 subjects that had very great treatment need all subjects belived they will experience a positive change in confidence and apperance, no subject had any difficulty in speech or mastication, all subjects belived their oral health will improve and their chewing efficiency will improve if they opt for the treatment

On further studying figure 2, it is noted that 30% population had little treatment need, 55.33% population needed treatment which was elective, 8% population needed treatment which was highly desirable and 4% population's treatment need was indespensible

Of the 45 subjects that had little or no treatment need 32 subjects belived they will experience a positive change in confidence if they opt for orthodontic treatment,28 subjects belived they will experience positive change in apperance no subject had any difficulty in speech or mastication, 3 subjects belived their oral health will improve and their chewing efficiency will improve if they opt for the treatment.

Of the 83 subjects that needed elective treatment, all subjects belived they will experience a positive change in confidence and esthetics if they opt for orthodontic population,78 subjects belived their oral health will improve and their chewing efficiency will improve if they opt for the treatment,

All subjects with highly desirable and indispensible treatment need belived they will experience a positive change in confidence and esthetics, and their oral health as well as their chewing efficiency will improve if they opt for the treatment.

Conclusion:

About 4% of population deals with severe malocclusion aesthetically as well as functionally. These individuals are well aware about their situation and are self-motivated for treatment. a large amount of society that is about 50% population deals with malocclusion ranging from mild to moderate malocclusion. It is important that these patients are motivated enough to opt orthodontic treatment despite having less psychological impact. Such population may have accepted their aesthetics but it is important to treat them for functional reasons.

CONCLUSION:

Following conclusion can be drawn from the present study:

Asymmetries are common finding in human beings.

The asymmetries decrease in magnitude as we approach higher in craniofacial regions.

Mandibular region shows the asymmetries of higher magnitude.

Left side dominance of mandibular asymmetry was appreciated.

Tip of the Nose and Centre of chin is shows marked asymmetry.

Most of the times Asymmetry goes unnoticed by the person and people surrounding them if it's within 4 mm.

Undergraduates' students who are in process of becoming future dentist are also not aware regarding the presence of asymmetry amongst them.

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REFERENCES:

1) Contemporary orthodontics, William Profitt

2) Marques et al, Factors associated with desires for orthodontic treatment among brazilian adolscents and their parents. BMC Oral Haelth, 2009 1472-6831/9/34

3) Fabio et al, The impact of malocclusion on adolescents' dissatisfaction with dental appearance and oral functions, Angle Orthod. 2012;82:403–409.

4) Abdullah MS, Rock WP. Assessment of orthodontic treatment need in 5,112 Malaysian children using the IOTN and DAI indices. Community Dent Health. 2001;18:242–248.

5) Spalj S, Slaj M, Varga S, Strujic M, Slaj M. Perception of orthodontic treatment need in children and adolescents. Eur J Orthod. 2010;32:387–394. Epub 2009 Oct 27

6) Nagarajan S, Pushpanjali K. The relationship of malocclusion as assessed by the Dental Aesthetic Index (DAI) with perceptions of aesthetics, function, speech and treatment needs among 14- to 15-year-old schoolchildren of Bangalore, India. Oral Health Prev Dent. 2010;8:221–228

7) Shue-Te Yeh M, Koochek AR, Vlaskalic V, Boyd R, Richmond S. The relationship of 2 professional occlusal indexes with patients' perceptions of aesthetics, function, speech, and orthodontic treatment need. Am J Orthod Dentofacial Orthop. 2000;118:421–428.

8) Bos A, Hoogstraten J, Zentner A. Perceptions of Dutch orthodontic patients and their parents on oral health-related quality of life. Angle Orthod. 2010;80:367–372.

9) Onyeaso CO. An assessment of relationship between selfesteem, orthodontic concern, and Dental Aesthetic Index (DAI) scores among secondary school students in Ibadan, Nigeria. Int Dent J. 2003;53:79–84.

10) Jenny J, Cons NC. Establishing malocclusion severity levels on the Dental Aesthetic Index (DAI) scale. Aust Dent J. 1996;41:43–46.

11) Emerson Tavares de Sousa et al Perception of children and mothers regarding dental aesthetics and orthodontic treatment need: a cross-sectional study . Progress in Orthodontics (2016) 17:37

12) Carlos Alberto Feldenl et al, Desire for orthodontic treatment and associated factors among adolescents in southern Brazil,Angle Orthod. 2015;85:224–232.

13) Nihal Hamamci et al, Dental Aesthetic Index scores and perception of personal dental appearance among Turkish university students European Journal of Orthodontics 31 (2009) 168–173

14) Sudha Patil et al, Factors influencing the perceived orthodontic treatment need and its relationship with awareness of malocclusion among college adolescents. Journ of Indian Association Of Public Health Dentistry Vol. 12, Issue 3, | July-September 2014

15) G. Mutthu Lakshmi, Reasons for Seeking Orthodontic Treatment among South Indian Population-A Questionnaire Study /J. Pharm. Sci. & Res. Vol. 8(7), 2016, 692-695

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