Sheet no.: 8

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Today we are going to talk about treatment planning which is a very sensitive subject.

The dr show us a case: How are we going to treat it ?

We need a logical sequence of procedures in order to reach our aim of healthy dentition, function and appearance . According to the glossary of prosthodontic terms Treatment planning is :is the sequence of procedures planned for the treatment of the patient after diagnosis.

Treatment planning isn't a static thing you can change its dynamic and sequence of events. A successful treatment plan is a one that meets the patient expectations, you need to have a good knowledge, communication skills all together to make a proper plan.

If you don't actually plan the results would be catastrophic failure.

In order to do a treatment plan you need to follow 4 steps:

1. Collect as much information as you can from the patient himself through history,
2. examination and other sorts of investigations
3. put the information together to make them meaningful
4. reach diagnosis

Sometimes a patient comes to the clinic pulsating problem which is pain most of the time, you reach diagnosis and that's it you solve the problem. Other times a list of problems so the treatment plan should be more comprehensive and as soon as we reach diagnosis we identify our treatment options and assess these options to several factors and in the end we select our treatment plan.

In History we need to ask the patient about his chief complaint, medical history, social history and about the dental history

Patient's chief complaint is very important don't assume the trigger the patient know more than you about his complaint you must listen to him. Some drs take a radiograph and work on the patient by it and this is wrong because you'll probably always find problems in the patient's but it may not cause him any discomfort.

 You need to record the chief complaint in simple words in the patient's own words . For example instead of anterior and posterior use frontal and back , Maxillary mandibular use top bottom. In Jordan we translate it to Arabic so it wouldn't make much of difference but it's helpful if you are going to work abroad.

Sometimes the patient tell you about his main CC but he does have other complaints make sure to ask about them because it would give you a lot of information you could use easily.

At the end your treatment plan must address the patient's CC

Most patients complain from pain we need to know everything about this pain in order to reach diagnosis:

* Most of the time the pain is odontogenic : which is a pain originate from the teeth, periodontal ligaments
* Or non odontogenic

The most acceptable assessment system is **SOCRATES system** it's an acronym each letter stand for a word so

* **S** stands for site : you need to know exactly where the pain is, ask questions: where is the pain whether its in the upper or lower jaw, right or left side
* **O**nset - When did the pain start, and was it sudden or gradual? Include also whether if it is progressive or regressive.
* **C**haracter - What is the pain like? An [ache](https://en.wikipedia.org/wiki/Pain)? Stabbing? Throbbing ?
* **R**adiation - Does the pain radiate anywhere? Or is it in the same place every time?
* **A**ssociations - Any other signs or [symptoms](https://en.wikipedia.org/wiki/Symptom) associated with the pain?
* **T**ime course - Does the pain follow any pattern?
* **E**xacerbating/Relieving factors - Does anything change the pain? What makes it worse and what makes it better?
* **S**everity - How bad is the pain? It's very subjective some patients would say it's very severe when its actually mild, one of the ways to make is objective is to rate the pain from 0-10, 10 is the worse pain you could imagine and 0 is no pain atall

Because we treat human beings not just teeth we must know about their **medical history**

* whether they have any medical conditions that would cause his CC or would affect the future treatment plan
* we should review all the systems following the ABC system you can follow or simply reviewing the main systems.
* Ask about his medications and drugs he use
* Allergies: from antibiotics like penicillin or from latex which is very important during endo treatment using rubber dam to avoid having anaphylactic shock

**Family History** diabetes, hypertension all these things you need to know them

Diabetic patients are very common in Jordan, They are really compromised it's important for us in our day to day practice, we need to make sure they won't skip the meal or medications, there is a common misconception that patients need to skip a meal before going to the dentist which may compromise them going thro a hypoglycemic shock

Heart disease in certain conditions we use prophylactics and antibiotics, we need to keep the pain to minimum , chest can induce heart changes , epilepsy, convulsions.. it' a long list actually

A student asked what do in case of epilepsy or convulsions ? the recent regulations stated you shouldn't restrain the patient and prevent them from swallowing their tongue , remove all appliances around the patient, if the convulsions are consistant you should remove them somewhere outside

Pregnancy is very common to come across a pregnant lady, there is no evidence that taking x-rays can compromise the health of a pregnant woman or the baby, but if –like 1 in a million- something happened for the baby you are to blamed. So the rule is if its an elective procedure don't do it wait until after delivery, if the pregnant lady is in pain you can do an access cavity with temporary fillings and see her after. Having said that leaving a pregnant lady in pain is more dangerous than anything else, so being pregnant doesn’t take her right of being treated. If you are prescribing medications antibiotics are commonly prescribed by dentists try to avoid them in the first trimester. If the lady is in her last trimester she might faint if she laid flat because uterus may impair the blood flow so she could easily faint

Steroids: patients who use steroids need to double the dose on the day of dental treatment especially if you cant drug them properly and if they are under stress may undergo addisonian crisis which would be really damaging to their health

Patients with Asthma: make sure they got their inhalers, if the asthma is severe you might need to give them some epinephrine or something like that

Patients on phosphonates : (phosphonates are dugs used to treat patients with osteoporosis and similar diseases of the bone it almost mask the effect of these diseases but it expose the patient to having biphosphonate-related osteonecrosis ) so you need to avoid surgical intervention as much as possible. ( in dr experience in Manchester they used to do RCT in non restorable teeth of such patients to avoid extractions)

 Radiotherapy caries the same adverse related to osteonecrosis so you need to give the patients all dental treatments and restorations before undergoing the radiotherapy

Patients with infectious diseases: HBV and HIV if they were honest sometimes they wouldn't receive treatment coz dentists were scared of getting infected so most of the time patients won't tell you or they actually don't know so you need to treat all patients as if they were infected and take all the precautions needed

A student asked: if the patient have hypertension what should we do? It depends if they had controlled hypertension We treat them the same as any patient and preferably LA without vasoconstrictor. But if he had uncontrolled hypertension you might need to return them home, but the dr doesn't really follow that rule in order to put the patients health first.

**Social history :** you should ask about his social life, what does he do for living? marital status ?

**Dental History :** its important, you need to ask what did they have in their last dental visit ? do the brush their teeth ?do they floss ? and their general attitude about dentistry are they anxious do they like or avoid going to the dentist and if they have any issues about local anesthesia, extraction.. lot of patients faint, undergo palpations , hyperbreathing after extractions

Now after taking the history you need to know about the information the patient don't know about by physical examination

We start with **extraoral exam** you can exam anything you want but these are the basics you need to assess :

* If their face is asymmetrical that could be easily visible and could be a periapical abscess or some sort of cellulitis which is even worse
* TMJ supported, assess mouth opening , sometimes the patient can open his mouth properly, whether there is a sound of clicking or crepitus
* Lymph nodes whether they are tender or enlarged due to infection but in worst cases it could be due to tumors
* Muscles of mastication
* Lips whether they are competent or not and by competent we mean being able to come togethor without any conscious effort

Usually patients with incompetent lips are mouth breathers who would probably have xerostomia which effect caries rate

Another aspect important in examining the lips is the lips line: patients with high lip line which would show part of the gum upon smiling are difficult to treat when their complaints are purely esthetic , patients with low lip line no matter of how hard they smile they don't show their gums then they are easier to treat .. usually the most difficult part to get esthetic is from the junction between the tooth and the gingival so for example if you doing ceramometal crowns but the patient low lip lines even if the margins of the ceramometal crowns are short his lips wont show anything

**Intra oral examination :**

We examine the intraoral tissues and teeth, charting, palpation Percussion, question restorability of teeth

Periodontal examination: periodontal disease simply starts as inflammation of the gums "gingivitis" if not treated may progress into periodontitis where we lose bone this mainly manifest as pockets; you use a probe with a blunt end and you measure the depth of the pocket if its anything more than 3-5 mm then it's called pocket and it’s a disease

So you need to assess the periodontal health and oral hygiene (methods) , how much plaque the patient have ? whether they bleed upon probing or not, probing depth, recession and mobility, saliva flow "which is usually over looked" if the patient hae lot of saliva even if he drools he should be immune against caries and the opposite with xerostomia

Now after finishing examination we still need more information diagnostic tasks and special investigations:

* this include testing the vitality or sensitivity of teeth by cold test, hot test, electrical test and so on
* also you need to do a radiographic examination we don’t see whats inside the bone we only see the crowns in the oral cavity

the most commonly used radiographs are periapical radiographs and bitewings, we also use panoramic radiographs DPT, occlusal radiographs is not used a lot but sometimes its needed. And nowadays cone beam CT which gives you 3d image, its priceless but you expose the patient to higher radiations

* sometimes you need to take biopsies and examine them histologically if you suspect any malignancies or suspicious lesion
* blood test
* study casts register the bite to examine the relationship between the upper and lower teeth

to analyze occlusion and if there is any occlusal interferences, could be used as an education tool to show the patient the teeth , and very important as diagnostic the wax up and this is what you want the patient's teeth to look like , use these casts to make temporal teeth, temporal crowns until you give them the dental treatment.

* Facebow registration which gives you the relationship between the upper jaw and TMJ

So now we gathered these information, we should put them together in a way that would make sense in order to reach diagnosis, sometimes you do differential diagnosis first and then the rest of our diagnosis. Once we do this we need to consider our treatment options.

Treatment options: you need to list them all and see what happens and assess positives and negatives of each plan there is no perfect treatment option

There are general factors you need to take in consideration:

1. Patients preferences: patients in Jordan prefer fixed appliances for some reason they don't accept removable appliances as the general consentience
2. Patients motivation: if you tell your to brush their teeth once or twice aday and he still comes to the clinic with plaque and poor oral hygiene then the patient wasn't motivated then this patient won't be competent for ur treatment plan
3. Systemical :a lot of things could affect our plan
4. Emotional status: this is more common is females, there is something called body dysmorphic syndrome some people have perfect health but they are still not happy about it, make sure your patient is not one of these because he'll never be pleased
5. The cost of treatment: you can show the patient different treatment plans but with different costs and it's up to the patient
6. The condition of abutment teeth, if the teeth are compromised you don’t want to use bridge or denture because if these teeth failed then you are risking the failure of prosthesis ?
7. If the patient is edentulous or moving towards being edentulous, whether we can give them implants or not

Factors related to the dentist:

1. Whether you have the experience to do complicated procedures or not
2. Do you have a good technicians
3. Do you have access to specialists
4. Your relationship with the patient

If you came across a patient with poor hygiene and a lot of oral problems but had so much pain the day before he couldn't sleep, he is not interested with you talking about his problems he just want to get rid of the source of pain

For the ease of remembering them the dr made only four phases but you can add for these phases

So first phase of any treatment plan is to manage the emergency situation, could be simply related to symptoms; couldn't sleep all night because of pulpitis, abscess, whatever the reason is this should be ur primary concern the patient won't listen to you about anything else, deal with this first. Also trauma; patient could come with their teeth on their hand , fractured teeth and they are in a hurry they need it to be fixed atleast temporarily

Second phase is stabilization and prevention, basically the patient comes with an ongoing disease, caries is progressive periodontal disease is progressive , these two are the most common pathologies in the oral cavity, so you need to stabilize the patient condition, stop the caries and periodontal disease but in order to do this you need to identify the factors that led to this, educate the patients and take them to a lvl where they don't have any active disease and then you can move on to the caries which is the definitive treatment

This is the phase where you give the actual treatment then as soon as you gave ur patients what they wanted you need to maintain their status of health

Now what the dr want to discuss should be phase two but its small so you can't actually call it a phase so call it whatever you want; sometimes while doing your comprehensive examination you may come across suspicious lesions. Then he show a picture and say lesion like that doesn’t look benign, so if you come across something like this you need to deal with it, if you don't know how to deal with it pass the patient on to an oral pathology specialist like dr Yazan Hassoun he's really good,

Sometimes if you see erosion on teeth surfaces may mean some sort of GI problems; irritation, Bulimia, anorexia, the dr show a picture of red swollen beefy tongue could mean the patient is anemic, then another a picture proposing sarcoma , another picture featuring leukoplakia

Erosive teeth of a bulimic patient



Anemic beefy tongue

Leukoplakia

Then we inter the stabilization preventive phase,

Now if we go back to the first case at the beginning; what do you think made his teeth this bad? What are the factors?

1. Oral hygiene 2. Diet 3. Saliva 4. Habits general attitude 5. Fluoride

So first thing you want to do is to improve their oral hygiene methods and making them interested in maintaining their oral health, of you fail to do this fit don't proceed. Tell the patient if you don't improve your oral health then I can't help you. Because no matter what you do if the patient didn't maintain their oral health then what you are doing is pointless

Diet: we do this mainly to watch their sugar intake which is very important and sometimes their acid intake ; acids could lead to erosions and sugar result in caries

Fluoride : The dr doesn't have a statistical information about water fluoridation in Jordan but in England 95% of their water wasn't fluoridated that's why English people has very bad teeth so if your water is not fluoridated you need to take fluoride from other source: mouthwash , systemic, fluoride varnish any of these things. Fluoride is very important in preventing caries

And then if there was any teeth with hopeless prognosis, these teeth are not treatable, so you need to get rid of them at this stage there is no point of keeping them

then you start with your periodontal treatment you clean the gums , scale and polish at this stage,

and about the carious lesions you don’t necessary have to restore them all but you have to remove all the carious lesions temporize bcoz this is a stabilization stage.

Then if there is any defective restorations you need to change them and replace them with better ones

Now if you did all of that you've dealt with the pain and his ongoing diseases, what are you going to do now ?

The definitive treatment phase : you can divide it into **Preliminary** and the definitive one but before you jump into the treatment phase you need to go back to re-assess the stabilization phase ; assess the oral hygiene methods plaque and bleeding indices , patient attitude still being motivated on continuing the treatment plan, if you are happy with all of these then you start your treatment phase.

Sometimes treatment plan is very simple like doing a cavity or root canal filling but other times you need to mess with the occlusion- the whole occlusion isn't satisfactory- and need to rearrange it, in this case you need preliminary phase. So not every case you face you need to go into every phase in details you can skip some phases but you can't jump from one phase to another until all its objectives were met

So now that you got a stable mouth you put a provisional plan of what you want to do, restore the edentulous areas with denture or implants , bridges whatever. You do change the occlusion and rearrange it "temporarily" or" reversibly" at this stage to see whether this new occlusion is satisfactory, does it achieve good stability, esthetics,..etc then you give them provisional dentures.

Then after this if you are happy with the new occlusion , function and esthetics, you need to transform this into a more permanent treatment –start with the definitive treatment phase- you need to design your final prosthesis at a very early part of the treatment phase. Because lets say I want to give the patient an acrylic RPD and a number of crowns if I'm going to do the crowns first then planning the RPD I would have to drill the crowns for guiding plans and rest seats but if I designed the RPD from the beginning I would incorporate the needed features in the crowns themselves.

Confirm the occlusal scheme are you happy with canine guidance, group guidance it really a multi disciplinary approach what matters here is you don't have to do all aspects of this treatment as a general dentist your duty is to get the patient into a disease free mouth and this is what we assist fifth year or last year students on the bulk of their cases whether the patient had an after disease or not. And always refer the patients to a specialist if you can't do it yourself or get a consult and do it yourself

in the definitive treatment phase you also do periodontal treatment , sub gingival, crown lengthening, root canal, apical surgery. Refer it to an orthodontic oral surgery, all types of oral surgical procedures, then do an direct and indirect restorations provide them with implants and dentures.

Now after giving the patient everything he is now disease free, functioning properly and we are happy about the appearance e need to maintain that ,maintenance phase:

* should include a backup plan in case the original plan failed
* regular reviews whether the patient is maintaining what he has been given,
* professional cleaning sessions sometimes even if the patient was meticulous in his oral hygiene methods he might need help so you provide him with a regular polishing and scaling appointments
* regular examinations according to the caries risks

before you proceed with your treatment plan you need to get it approved by the patient because the one who'll get the treatment and paying for it and he's the one subjected to its side effects so in order to protect yourself and your patient you need something called a consent form, is a contract between you and the patient you explain to the patient :

* whats wrong with them, Diagnosis
* what are the treatment options,
* what are the positives and negatives of each option, advantages and disadvantages
* why you chose this treatment plan, procedure
* and the cost of this treatment.
* success rate, There is a failure rate to any treatment
* whether it will involve anesthesia or not, some cults refuse any kind of blood transfusion or anesthesia so you have to respect that or inform the patient to get his consent

 You get the patient to sign it and by signing it means he's consent and this becomes a contract and it’s a binding contract incase the patient went to report you have something to protect yourself with from malpractice allegations

At the end keep it simple, the simpler the plan is the better the outcome and always tell your patient about possible complications and side effects before you start the treatment so they won't think you missed up at the end.

And remember failure to plan is a plan to failure