

# It's just a “flipper”.

## Appointment - Appointment Procedures

Copy of PROS PM Predoc Clinic

OHSU School of Dentistry

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Page :

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Stephanie Rin

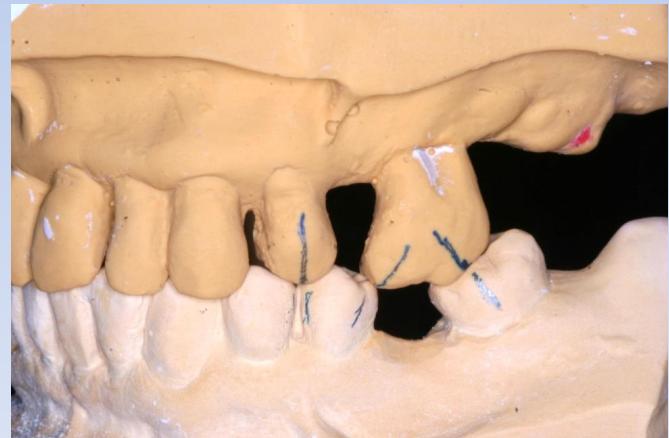
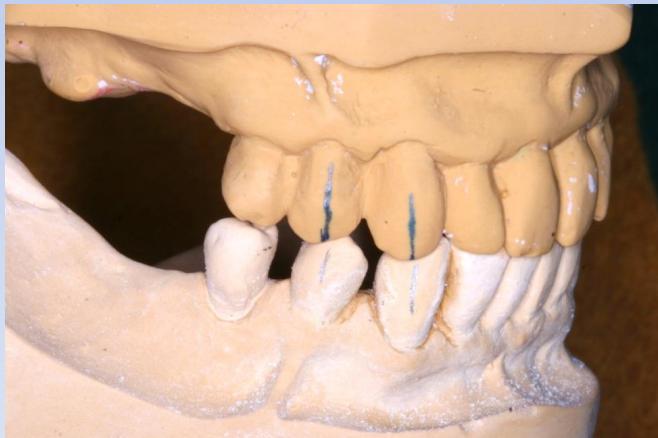
Tx. Tx	**Appt. Tx	**Appt. Date	**Appt. Time	** Chair De	** Prc	Prov. Last	Prov. First	Pt. Chart	Appt. Reason
EPROS	06/06/2012	04:00 PM		BDW137	3	Brimton	Clark	A269690	initial exam
1							1		
EPROS	06/06/2012	02:00 PM		BDW141	4	Dekrey	Lee	294596	Occclusal guard insertion
1							1		
RPROS	06/06/2012	03:00 PM		FRE85	4	X Shen	Chao	A101853	Reline IRPD
2							2		
RPROS	06/06/2012	02:00 PM		FRE105	3	X Shear	Rachel	285735	Deliver IRPD
1							1		
RPROS	06/06/2012	02:00 PM		SLWD124	3	X Bateman	Markus	A110028	IRPD tooth selection, shade and impression
1							1		
RPROS	06/06/2012	02:00 PM		BDW133	3	X Jones	Emily	A101490	Dr Laughlin please wax try in
1							1		
RPROS	06/06/2012	02:00 PM		BDW152	3	X Shull	Levi	A106412	delivery of max flipper
1							1		

Okay, so a lot of people call these interim RPDs flippers. I don't like that, but if somebody. Usually the patient is gonna call them that, so I don't kick them out of the clinic, but I would prefer the term IRPDs, but here's flipper. This is from 2012, so it's a long time ago, but this was my clinic assignment for the day to help all these people with the appointment reason realign IRPD, deliver IRPD, IRPD

tooth selection. Please. Oh, here's a wax try-in, that's a regular, complete denture, I assume, and deliver of max flipper. So even, we're just spending one lecture today on IRPDs, it's a pretty pertinent topic, and if you don't handle them well, it can really make your life miserable and your patients. So we're gonna try to touch on some things here.

# Treatment Plan

- Mx ICD/CD
- Md IRPD
- Md RPD

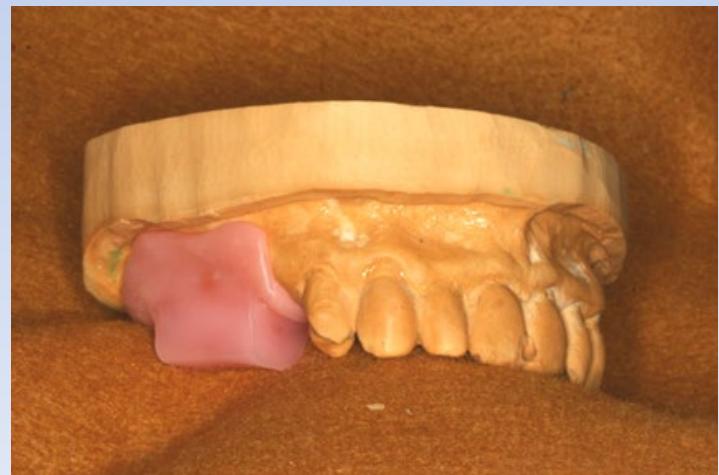


Does this look familiar? This was our immediate complete denture case, our interim complete denture case, where we cut off the maxillary teeth and set teeth in the checkerboard style. And we talked about the fact that for this patient, the treatment plan was gonna be a **maxillary ICD**, which we waxed up, and then after six months healing, we go back and make a complete denture. The ICD, the interim complete dentures, are made out of the cheaper plastic teeth and it's made out of pour resin instead of processed resin, and it's about half the cost of a complete denture. So that's how we're handling the maxillary. **The mandibular, we were gonna do an IRPD** on the lower and then work within that six-month healing period, so that we're gonna deliver the mandibular RPD and the maxillary complete denture simultaneously when the time comes in six months. **Very common treatment plan**, and I would wager some of you are going to inherit a case like this where the patient is currently in an interim complete denture, and then you're gonna pick up the treatment and eventually do the complete denture over the mandibular RPD. So right off the bat, some of you are gonna need to know how to do the soft liner.

# Mounting partially edentulous cases



If there are insufficient posterior teeth to allow making a facebow transfer and making an IOR to mount the mandibular cast, record bases with occlusion rims will be required.



This is when we're doing a mounting of a partially edentulous case, we make record bases and

occlusion rims just like we do for complete dentures, but, of course, they're partially dentate so we have partial rims and partial record bases, and we have to have something to do our facebow transfer and this against the lower for an interocclusal record.



**Make the mandibular record base thick by placing several layers over the lingual plate area for strength, or the record base may break.**

One tip, when you get to the clinic and you're making either if you're going to make a custom tray to do border molding and a wash impression, or if you're needing to do this record base, **make it thick**,

put two layers of triad here instead of just one, because **we get a lot of breakage here in the midline**, and it's really frustrating if you've been border molding or you're almost at the end of your MMR appointment and your record base breaks and then you gotta go back. So you'd have to make another record base and have them come back for another appointment. So this is commonly where we have breakage. So just put two layers.



Oh, this shows. I'm sorry, there, I should have turned these around. This shows a framework with occlusion rims, so whatever you're opposing on the upper, when you go to mount this, you're gonna need some way to get an interocclusal record, and so you just put occlusion, there's may or may not be triad underneath this, usually you can just flow baseplate wax and make the rims, and you don't necessarily have to have anything underneath it. And then these notches so that we can. You get an interocclusal record.



And that shows it again.

# Interocclusal Records

- Determine what provides the vertical stop.
  - May be tooth-to-tooth contact (at patient's existing VDO).
  - May be tooth-to-occlusion rim.
  - Or occlusion rim-to-occlusion rim.
- Depends on management of VDO.
- If after determination of VDR and calculation of VDO, you find the patient's current VDO is correct:
  - You adjust the occlusion rims so that there is no contact when you record IOR.
  - You want there to be tooth-to-tooth contact only.

Okay, when we're doing interocclusal records for IRPDs and such, you have to determine if we're going to use the patient's current VDO. In other words, when they bite down their current VDO, if it's correct or not. If you're doing interocclusal records for an interim on the upper, you have to take into account they may be over-closed and their current VDO is too little, and we need to make their new denture at an increased VDO. **There is only one way to determine what the correct VDO is, and that's to get the VDR, vertical dimension at rest.** And we went through that the same way. You need to go through it the same way we talked about in Fall term, you put a dot and a dot, and you measure when they're at rest with their lips lightly together, but not necessarily with the teeth touching. And there's a whole little series of how we do that, so I'm not gonna go into it again. But you get the patient's current VDR and then you get, have them bite down, that's VDO. And if it's how much you would accept that VDO, the difference? Two to four, right. So if it's when they bite down, it looks like it's 3 millimeters different, that means their current VDO. That's it. So when you bite down to get an interocclusal record, their natural tooth should be touching. If we need to increase it, then you're gonna have to build a vertical stop somewhere else in the wax. Don't worry too much. Hopefully, this will make sense when you get a patient in the chair.

# Interim RPDs

- **Indications:**
  - Premature loss of anterior teeth.
  - As immediate prostheses.
  - Prevent adjacent and / or antagonist tooth movement, ie space maintenance.
  - During resolution of phase I therapy.
  - As a diagnostic tool, ie VDO change, phonetics, esthetics, occlusal scheme.



Okay, interim RPDs, indications, premature loss of anterior teeth and as an immediate prosthesis. So you're likely gonna have a patient where you have maybe some, an anterior tooth or maybe more than one that need to come out, they don't wanna go with a different tooth, teeth so it's gonna be an immediately delivered, just like an immediately delivered interim complete denture. On the day of surgery, once the teeth are out, we would insert the IRPD. It also serves as space maintenance, and also not just mesial distal drift, but also from opposing dentition during resolution of phase 1 therapy, so while we're trying to get lots of problems in hand, a lot of times we use an IRPD instead of just waiting till. 'Cause that can take a while sometimes. And it's a diagnostic tool, and we'll go through that in a little bit. VDO changes, if we want to try to change the vertical dimension, which is a very difficult thing to do. For phonetics, aesthetics and the occlusal scheme. A lot of times, an IRPD can be really helpful in working out the kinks of the situation of the case and getting an idea of what the final should look like.

# **Transitional RPD**

- Patients who, for health or psychological reasons, should not have all teeth removed at once**

Transitional RPD patients, for health or psychological reasons should not have all teeth removed at once. I don't know that this is really important.

# Treatment RPD

- For patients with abused oral tissues caused by:
  - Ill fitting prosthesis
  - For oral hygiene
  - Epulis fissuratum
  - Papillary hyperplasia
- RPD used to allow placement of soft liner to help tissue return to health before definitive treatment provided

Treatment RPD, sometimes we'll have a condition where we need a removable prosthesis to carry tissue conditioner, we talked about tissue conditioner in fall, that helps to change the abused tissue to bring it to health, so we can proceed. Sometimes we need to make one just for that, for use with tissue conditioner.

# All Interim RPDs

- Disadvantages:
  - Little to no SUPPORT--poor occlusal function, and settling into soft tissue.
  - Primarily for esthetics, not function.
  - Most retention is from frictional contact with proximal and lingual tooth surfaces.
  - May be uncomfortable, or conversely patient may become so accustomed to IRPD they reject more definitive treatment.

All interim RPDs, the disadvantages. Okay, so I hope that you know by now that **one of the foremost characteristics of RPDs is that they have to have support of our metal framework RPDs**. They have to have rest seats and they have to have support. Really, **IRPDs don't have that feature. So they can settle into the tissue and cause problems if the patients don't rest the tissue**, take it out at night and make sure that they don't wear it all the time. And also, that's why we say that you should counsel the patient that **it's primarily for aesthetics, not function**, but people do wear them to eat, so we can't talk them out of that. But really, they're not built biomechanically to withstand heavy occlusal forces like RPDs are.

Most retention is from frictional contact with proximal and lingual tooth surfaces. We're gonna see in some cases, we can put clasps on, but sometimes if, especially if you'll have occasions where they're just replacing eight or nine, and if you've got a full dentition, it's really hard to find a place to put a clasp that doesn't interfere with opposing occlusion.

They may be uncomfortable or conversely, this is what I find more often, the patient may become so accustomed to an IRPD, they reject more definitive treatment. They may become quite comfortable with it, and then when you present a metal framework RPD, it looks forbidding and complicated. And so sometimes it's kind of hard to wean them off of these, I find, more than them being uncomfortable.



**Patient with IRPD:  
Looks can be  
deceiving**



Okay, here's a patient with an IRPD replacing this and this. So if she came in and gave you this big

smile, you'd think, "Well, she's doing pretty good with that."

# However..

- IRPD offers poor SUPPORT.
  - Some support from ball clasps.
  - IRPD settles into soft tissue.
  - Some evidence of splaying of anterior teeth.
- Not meant as a permanent restoration.
- Also, poor oral hygiene and Candida colonization, both palate and partial.



But you would be wrong because you can see here, we're already starting to have periodontal problems on the central, and here we've got redness. I hope you can appreciate the fact that this is not what the intaglio surface of acrylic that's in good shape. I think this is an old soft liner, to tell you the truth. So we are starting to do damage with this. But this starts out with telling the patient, you've gotta throw this away, you've gotta make them a new one and they have got to get religion about taking care of what's left or they're gonna lose these other teeth. And they may have been living like this for some time, so it may be a hard sell.

Let me take this opportunity now to please. I would say just about all your cases, please take clinical photos. Even some very interesting cases that I come upon in the clinic and student comes to discuss it, "What should we do?" They got cast and everything, but they don't have any clinical photos. And as far as I'm concerned, you need clinical photos just like you need cast. So please take clinical photos. And, of course, for patient education here, we really need clinical photos.

# **IRPDs can aid in diagnosis and treatment planning.**



**Deep anterior bite. Patient's MD anteriors contact on palatal tissue.**

**Patient was TxPI for ICD/RPD, the CD/ after 6 months healing. However, there was no interarch space for MX complete denture.**



**Can her VDO be increased?**

**MX posterior teeth were removed for 2 stage interim denture.**

**Mx IRPD was made at increased VDO.**

Okay, this was kind of an interesting case. Patient came in, she was wearing a partial on the lower, but you can see the occlusal plane was really wacky down there. She has mandibular anterior teeth, she just has a very deep bite, and so we really don't have room to do too much on the upper. She was treatment planned for an ICD or an RPD, and, I'm sorry for an interim complete denture and an RPD on the lower, and then six months later doing a complete denture here. However, there was no interarch space. If you restored her at this vertical of dimension of occlusion and she's biting. Can you see, there's the incisal edges right there? You have to have room to make the acrylic in the teeth for the maxillary denture. So can her vertical dimension of occlusion be increased? **When you change vertical dimension of occlusion, and it's not a removable case, it's a fixed case, you should not embark on that. That's kind of like a full mouth rehab** because you've got to re-establish all your natural dentition, and it requires prudently keeping them in process temporaries for months at a time to test the new VDO. Because imagine how horrible it would be to cement crowns in the mouth and then find out that they can't tolerate the VDO. Don't go there. **With removable, we're not doing anything irreversible, so we can actually make IRPDs and increase the vertical dimension and see if they can tolerate it.** So it's not like it's impossible.

## Original VDO



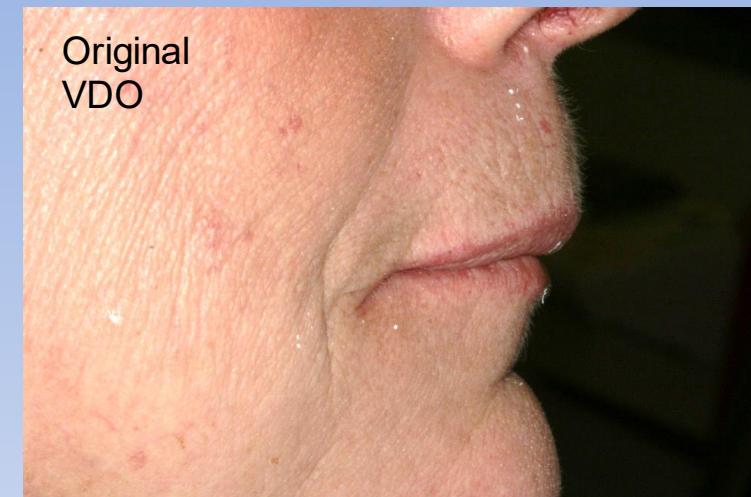
## Increased VDO with IRPD



**Patient tolerated increased VDO well.**

So here is her original VDO, and we improved it some with an IRPD, and it says, "Patient tolerated the increased VDO very well." So I know that, I've said that an excessive VDO is one of the two main problems

that I've seen with complete dentures in the clinic. One is the VDO is too great, the other is that the borders of the denture are overextended, they're too long, but that's not to say we can't play, not play around, experiment if we need to. In this case, it worked.



**During treatment planning, test patient's VDR, and observe profile. Does it "look" normal or does patient seem overclosed.**



**With increased VDO:**

- Lips are fuller.
- Lower lip not retruded.
- Commissures supported.
- Chin angle is less.
- Nasolabial line is less.
- Fewer wrinkles in upper lip.

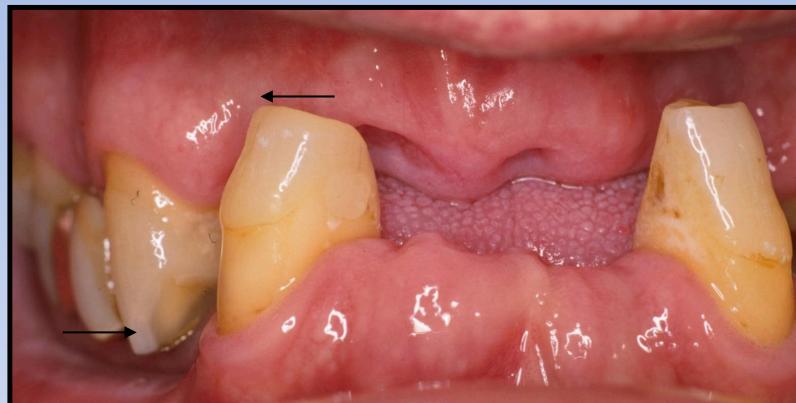
And I can, during treatment planning, we tested the patient's VDR and observed the profile. With an increased VDO, look, the lips are fuller. The lower lip's not retruded. Commissures are more supported. The chin angle, this right here, is less. Nasolabial line is less and there's fewer wrinkles in the upper lip. Now, I'm not saying you can tell somebody with wrinkles in their face, "We can take the wrinkles away," and just increase the VDO, but these are some signs. When I tell you to have the patient look straight ahead and you're to the side and look at the profile and see if the profile looks natural. This is a very nuanced thing. It's not something that you can necessarily measure, it's kind of an artistic, you have to have an artistic eye for it, but these are some signs.

# Loss of Centric stops: Occlusal disharmony and collapse



Okay, look at this case. Can you even tell what's going on here? So first of all, we've got to determine what can we do with this patient.

# Interim RPDs: Test patient's tolerance, esthetics, and ability to adapt to VDO



So we took out the teeth that were non-restorable and we tested the patient's tolerance. We did an IRPD on the upper and the lower to see if we have to restore him. And if we have to restore him at this, we can't do it

without taking out teeth that normally are not non-restorable unless we have an interarch space problem. And I will tell you, in this guy's case, we were able to restore him. Here, I think I'm giving you kind of a false sense of being able to crank people open and that is not the case, you have to test it very

# IRPD Fabrication

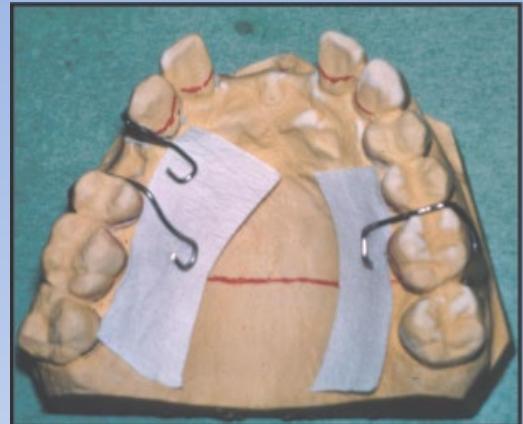
- Lab Fabricated
  - IRPD waxed, flasked and processed like conventional dentures.
- Student Fabricated
  - Similar procedures:
    - Denture repair
    - Orthodontic appliances

D5820	Interim RPD 1-2 teeth - max - lab	228.00
D5820A	Interim RPD 1-2 teeth -max-student	59.00
D5820C	Interim RPD 3-4 teeth-max-lab	303.00
D5820D	Interim RPD 3-4 teeth-max-student	66.00
D5820F	Interim RPD 5+ teeth-max-lab	319.00
D5820G	Interim RPD 5+ teeth-max-student	75.00
D5821	Interim RPD 1-2 teeth - mand - lab	228.00
D5821A	Interim RPD 1-2 teeth-mand-student	59.00
D5821C	Interim RPD 3-4 teeth-mand-lab	297.00
D5821D	Interim RPD 3-4 teeth-mand-student	66.00
D5821F	Interim RPD 5+ teeth-mand-lab	319.00
D5821G	Interim RPD 5+ teeth-mand-student	75.00

Okay, IRPD fabrication. And when you do wax-ups, they can be flasked and processed just like interim complete dentures. The lab would do that. We're also gonna talk about how you can make one here out of denture base repair material. So **when you make IRPDs, you're gonna use denture base repair material**, which is pink, it's aesthetic. And you're gonna do the salt and pepper shake on method, and because denture base repair material is **cold cure, chemical cure, it cures slower and therefore, it is much, much more accurate than triad**, that is light cure, so it cures fast. When you have fast curing, generally, that means you have more distortion. Okay, so I just wanted to show you axiom IRPD, 1-2 teeth for the lab or for the student. You can see how much they value your time, but there is something to be said for doing it yourself. It's good for your patients, for the money, but you also keep things in control. You have control of it, and there's no reason that you can't do it.

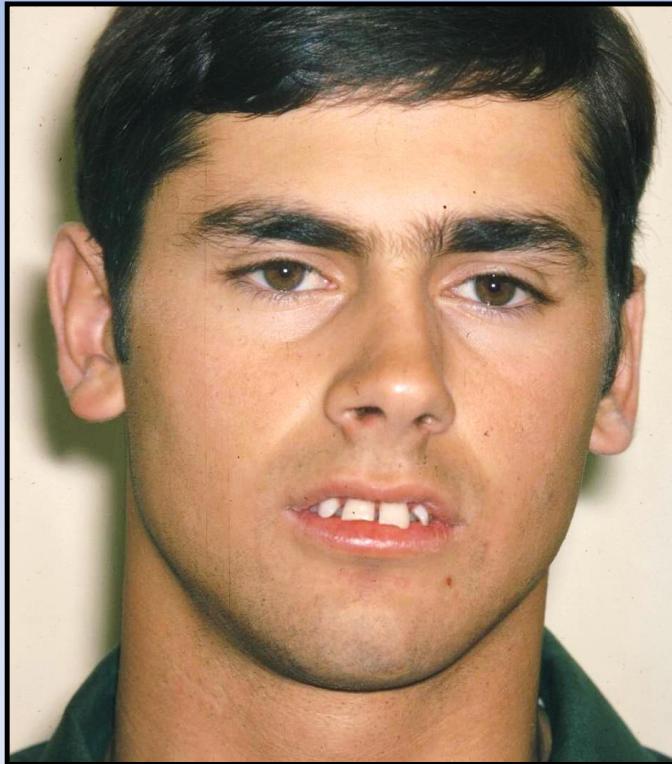
# Interim RPDs

- Consider wrought rests for support, or ball rests, but difficult because of occlusion
- Wrought wire or ball clasps for added retention
- Most retention is from frictional contact with proximal and lingual tooth surfaces.
- Temporary relines as needed
- Occlusal adjustments
- Regular recall\*\*



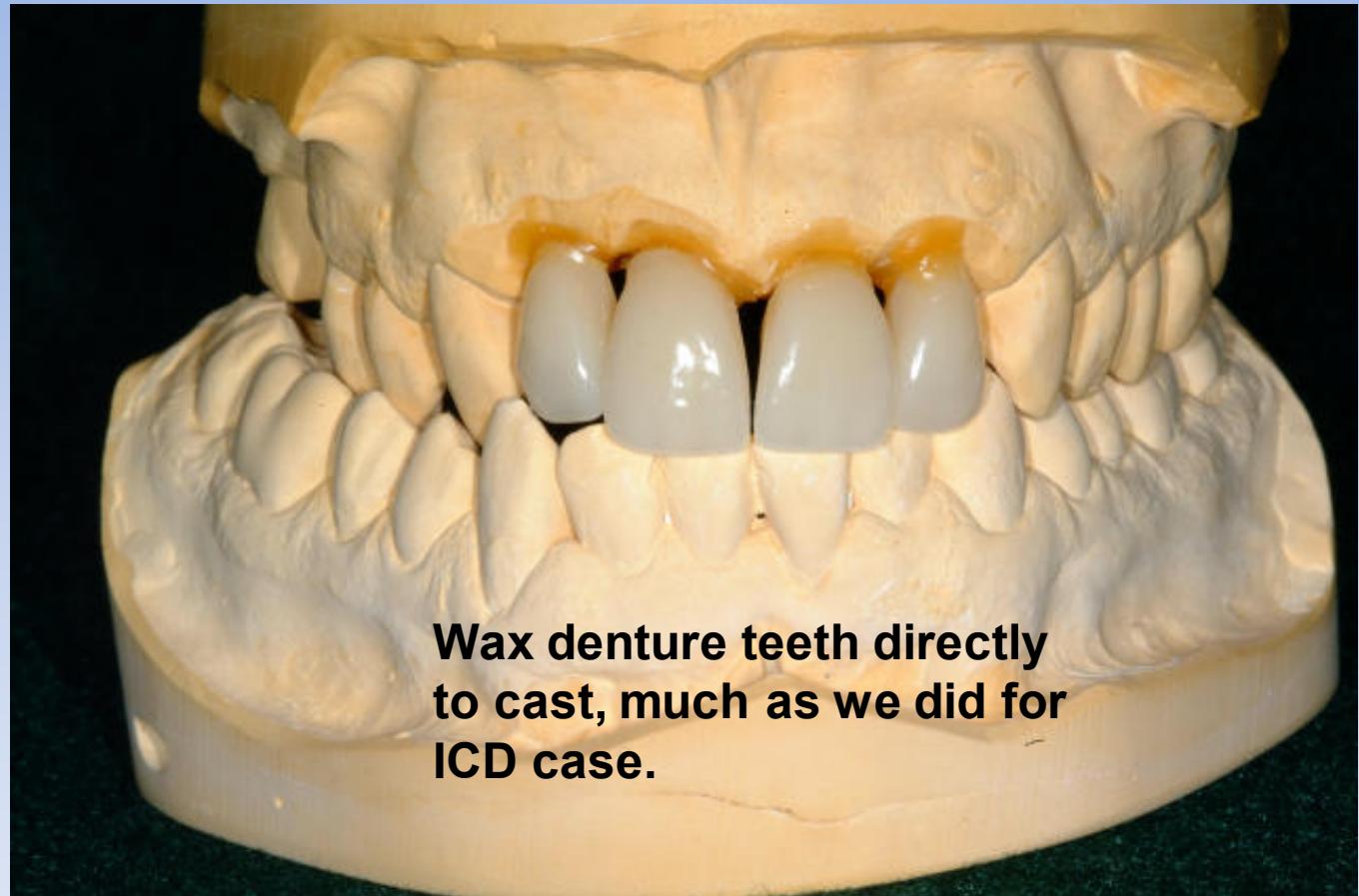
Okay, so this is an interim RPD and they have put wires. And because we have an edentulous space here, we can put some wires here, but see how this goes across the marginal ridge? If you have any natural dentition on the lower, like as not, this is gonna be hitting an occlusion and you're gonna have to cut it off anyway. So if you've got opposing occlusion, usually you're not gonna have these kind of a ball clasp that goes across the marginal ridges, or in this case, a circlet clasp. To be able to do that, you'd have to cut rests and pass-throughs in the teeth, and we generally don't do that for IRPDs. Okay, this(white paper looking stuff) is to hold up the tails of these clasps so that it's holding it off of the stone, so that you're gonna place these and then wax them down. Pull this out and then you're gonna have the wires embedded in the wax and embedded in the acrylic instead of the wires touching the soft tissue, because you may have to PIP it and adjust it, so we don't want the wires interfering with that.

# Student made IRPD



Okay, I wanna show you this case. This was a student-made IRPD and so, oh, I should have blocked

out his eyes, that, besides this is 25 years old, I think. So I don't think we'll have a problem with it, but I should have done that. Okay, so good looking young guy except for his front teeth, right? And these are periodontally involved, they're splayed outward.



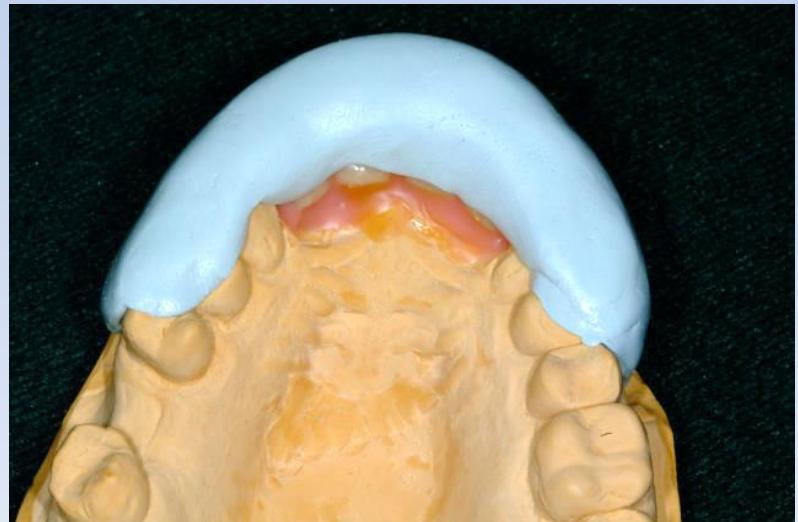
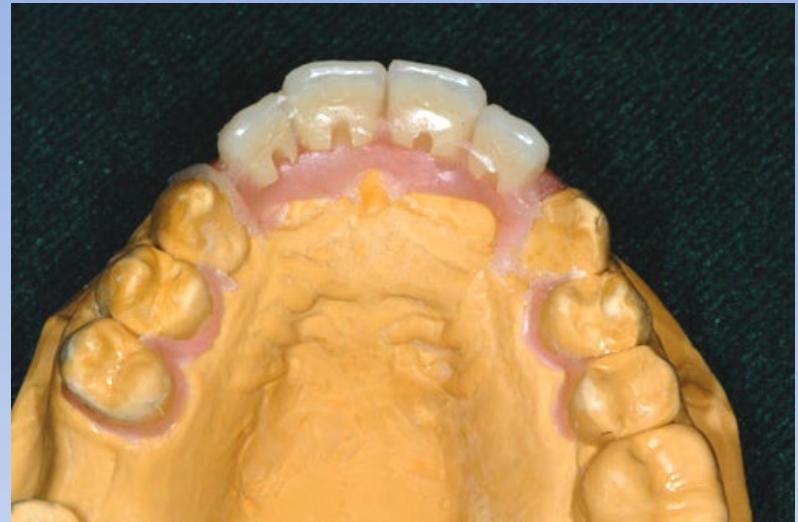
**Wax denture teeth directly  
to cast, much as we did for  
ICD case.**

So we have cast, we're in crossbite here, not here, whatever. We cut the teeth off and we wax them into place. Now, this should remind you of when we did our denture repairs last term. We replaced. Was it eight or nine? Eight. Well, this is kind of the same thing, we put the teeth where we want them,

we have them waxed into place...

# Fabricate Matrix

- Similar to denture repair to replace lost tooth.
- Make index out of stone.
- Cut back to expose lingual surfaces, but retain contact with incisal edges.



...and then we make a matrix. Cut little key holes into the teeth. Cut back to expose these lingual

surfaces.

# Retention Clasps

- Using orthodontic pliers, fabricate wrought wire clasps wrapping around the distal of the second molar terminating in the MB undercut.
- Bend end to be embedded in denture base with several reverse S bends so that the wire lies flat against the palatal. Teeth should be surveyed and only clasp retentive tip placed below survey line.

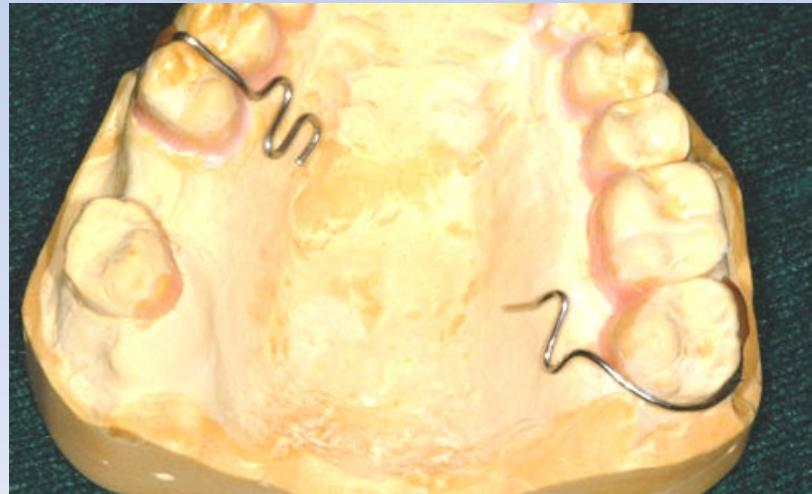


And here, this just shows that they're putting a clasp on there. You can use orthodontic pliers to

fabricate wrought wire clasp. You need to do some kind of feature, either just put a little curly cue here or a little zig-zag so that it has mechanical retention.

## Prepare Cast for Denture Base

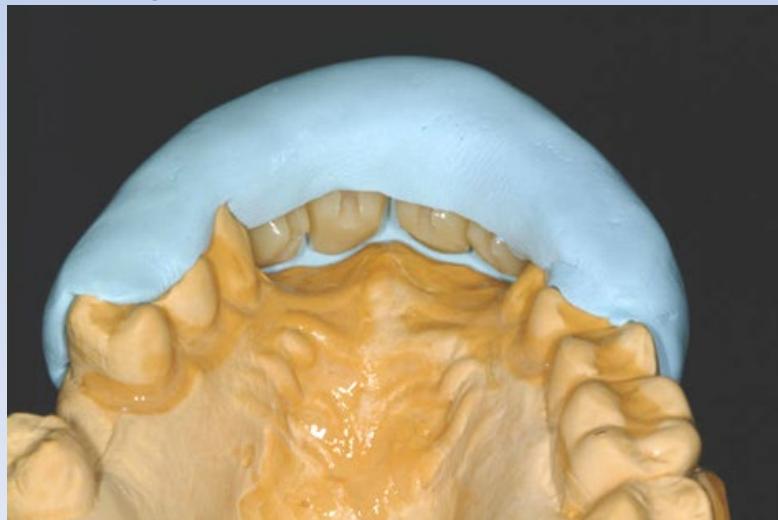
- Wax relief may be placed around palatal gingival margins to block out only the deepest interproximal spaces. Some areas of undercut should be left for retention.
- Apply separating medium to cast on palate and tooth surfaces.
- Secure wrought wire clasps in place with sticky wax on the facial surface of the premolars.



And here's another one, it's a different. This is putting wax underneath it so it's not gonna touch.

# Position denture teeth

- Remove teeth from cast and freshen ridge lap surface removing all wax. Place retention slots or holes for better retention.
- Steam all wax from edentulous space.
- Replace matrix with teeth on cast in original position
- Lute teeth in place in matrix at incisal edge.

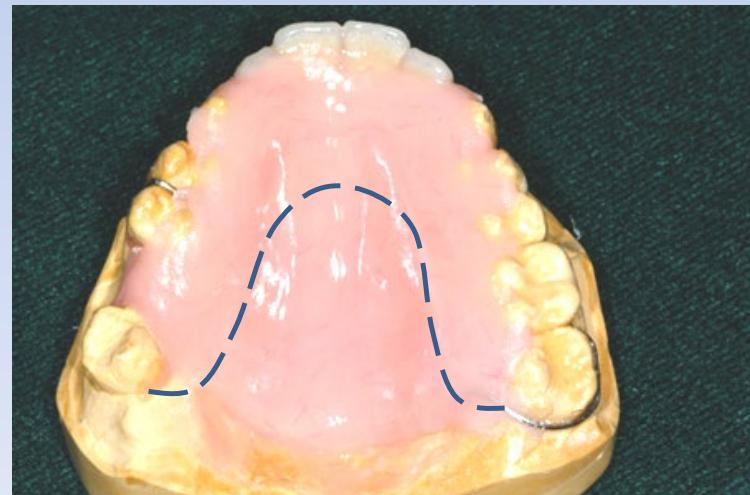


Okay, so here we've gone in, we've taken all, with the steam cleaner, taken all of the wax that held

these in place. Get it nice and clean. And then we're gonna salt and pepper denture base repair material.

## Adding Denture Base

- Use denture base repair material. Be sure to use proper liquid and powder.
- Salt and pepper the monomer/polymer to created a horseshoe shaped prosthesis.
- Be sure the material goes under and around the wire
- Be sure the material goes into the retention holes in the teeth and covers the ridgelap area.



Okay, this is showing this. And I put this **almost always for the maxillary, you don't need to have a full palate, you can just do a horseshoe, which the patients tend to tolerate much better. And most of your retention is gonna come from these little pointy interproximal points that go in between the teeth.** And so, when you go to deliver, you're gonna try to put this in and you're just gonna have to judge where it's hanging up from these little interproximal points, and just take your acrylic bur and just dust off the end of the points until it seats. You don't wanna force it 'cause you don't wanna get it in there and not be able to get it out. But most of your retention is gonna come from here, here, here. **You don't wanna block those areas out excessively because then you won't have any retention.**

# Curing and Finishing



- Place in pressure pot for 20 minutes at 20 psi to drive off excess monomer, help eliminate porosity, and make the denture base stronger.
- After polymerization, be prepared to destroy cast rather than distort RPD if it does not release easily.
- Trim flash around necks of teeth. Reduce to about half way down the palatal surface of the teeth.
- When residual ridge is relatively normal, no facial flange has to be added and this results in a more esthetic result. The teeth have the appearance of emerging from the tissue, like RAP teeth on conventional RPD.
- Smooth and polish cameo surface.

Okay, place in the pot 20 minutes, 20 psi. This was all in the book. You should not try to pry off the IRPD from the cast, because if you do, you're gonna distort or break the IRPD. So you'll have the air chisel where you can just chisel off the teeth and recover it that way. So you wanna destroy the cast,

not destroy the IRPD.

# Delivery

## Usual delivery procedures

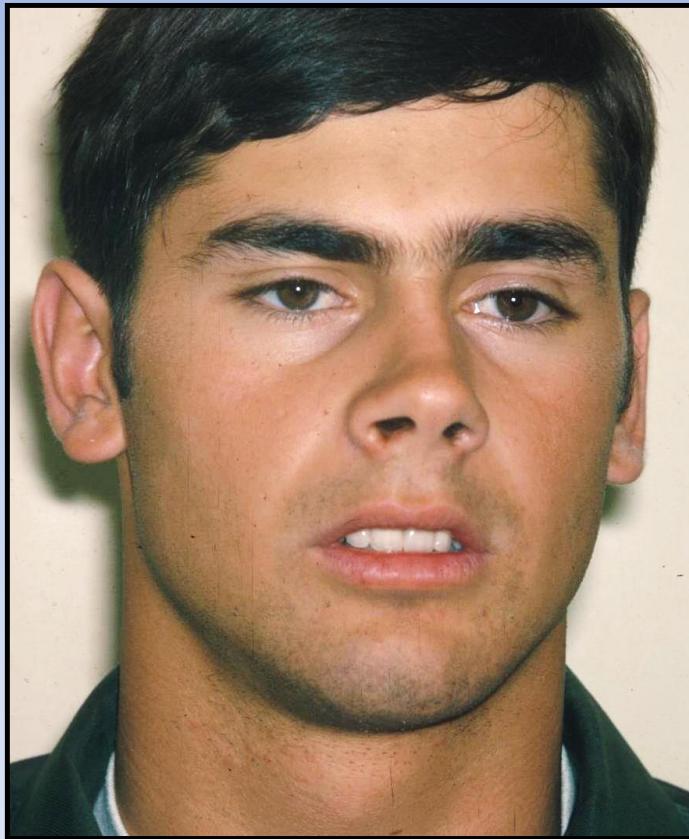
- PIP
- *Occlusal adjustment*
  - Preserve natural tooth contacts, exactly the same with the IRPD as without
- Check retention
- Instructions

- When first inserting IRPD, interproximal points may prevent easy seating.
- Do not force-you may not be able to remove.
- Adjust points until the IRPD gently seems to snap into place.

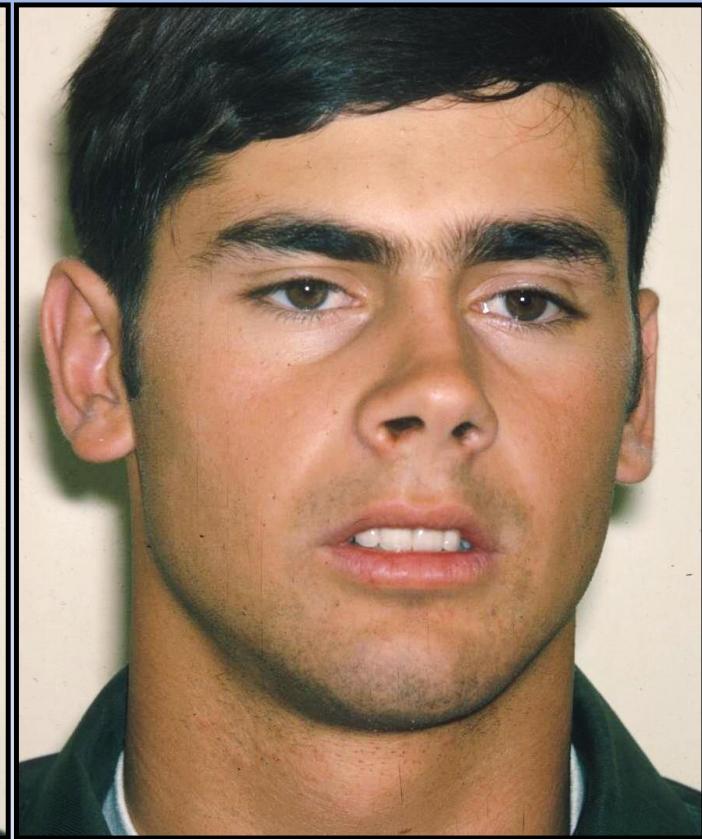
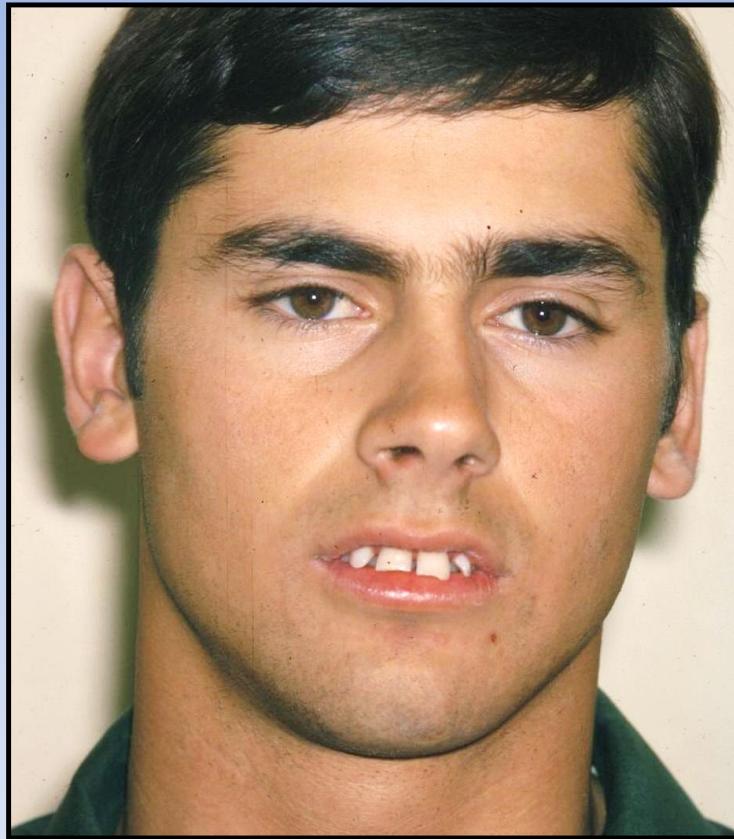


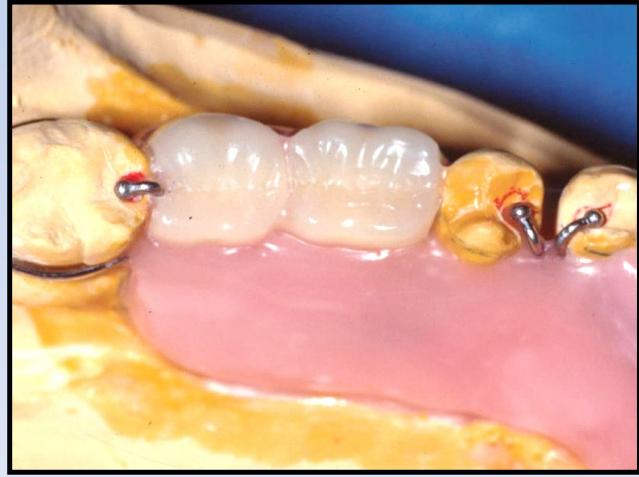
This (arrows) is where your retention is gonna likely come from. When you deliver, you always. Any

time you deliver a prosthesis, you should always PIP the intaglio surface, check the occlusion without and then with the IRPD, and make sure that the IRPD is not holding the occlusion open. Check for retention instructions.



So this is. And still, we've got. This is gonna be kind of a problem 'cause we don't have hardly any space here, but anyway, it's much better than it was.





You've got ball clasps, which are fine if this is opposing a denture and we don't have occlusal issues with opposing dentition, you can just adjust denture teeth to this, but like as not, you'd have occlusal

interferences here. We can, in some cases, if you do a little prep here, you can put a little rest. I recommend not doing ball clasps. I'm not sure why they did ball clasps, but just a little wire that goes there. But these occlusal rests are not going to be as strong as an occlusal rest on a cobalt chromium framework. So over time, these are going to distort, but sometimes it depends on the case.

## Let's look at some RPD designs



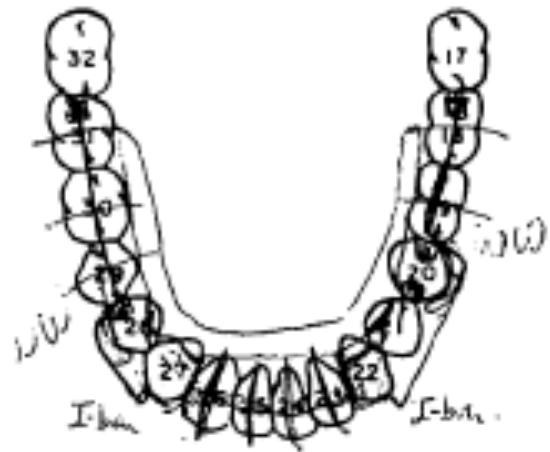
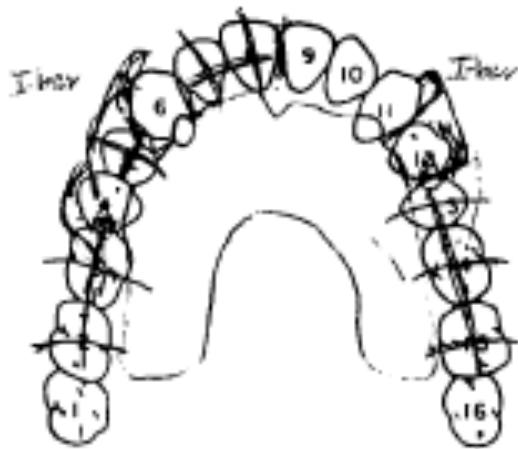
- When next to circlet clasp, significant adjustment to denture tooth must be made.
- Use acrylic bur to adjust mesial ridge lap.
- Make additional adjustment at the MB corner to allow placement of tooth close to wire.

This is really important when you're next to a circlet. See, if you've got a ball clasp over here, but when you've got a circlet, it's coming up on that interproximal surface. If you don't adjust and really hollow this out on your tooth, this is gonna stand far away from this abutment tooth, and you're gonna have a lot of open space here. So you want to make it so this tooth snugs up and kinda covers this part of the foundation of that clasp.



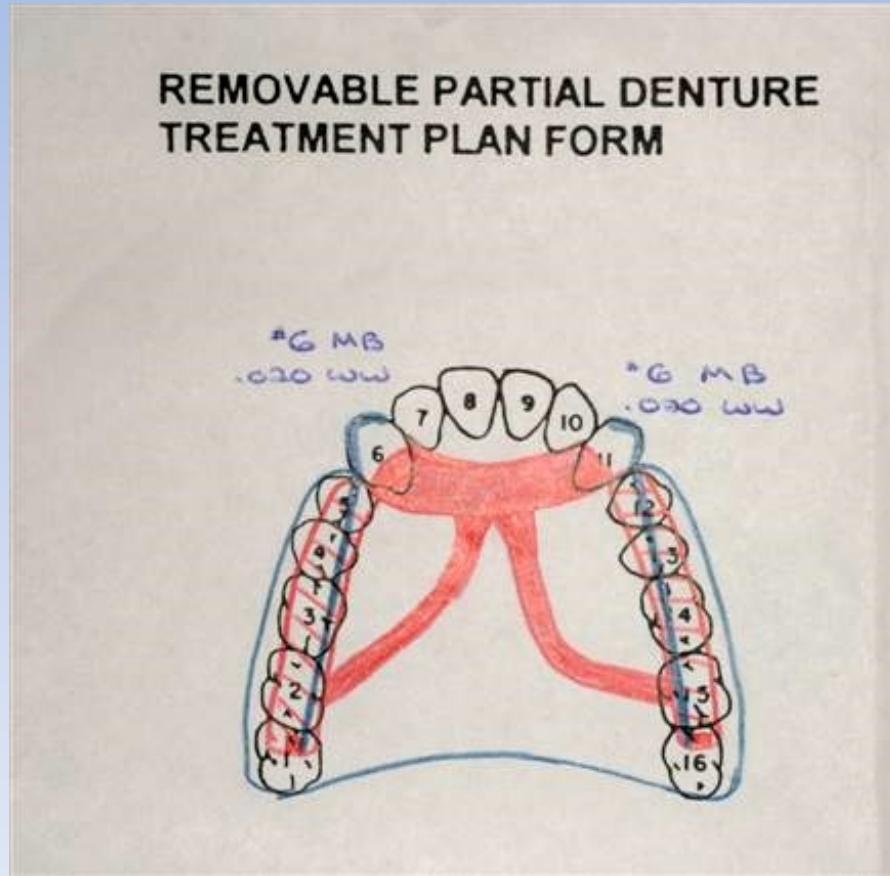
This is what it looks like.

# Oh my goodness!



These are from clinic. These are actually from clinic years ago. What in the world? Nobody did anything like this on a TSA, so that's good, but you can. What can you possibly expect from the lab if you send this off to get back?

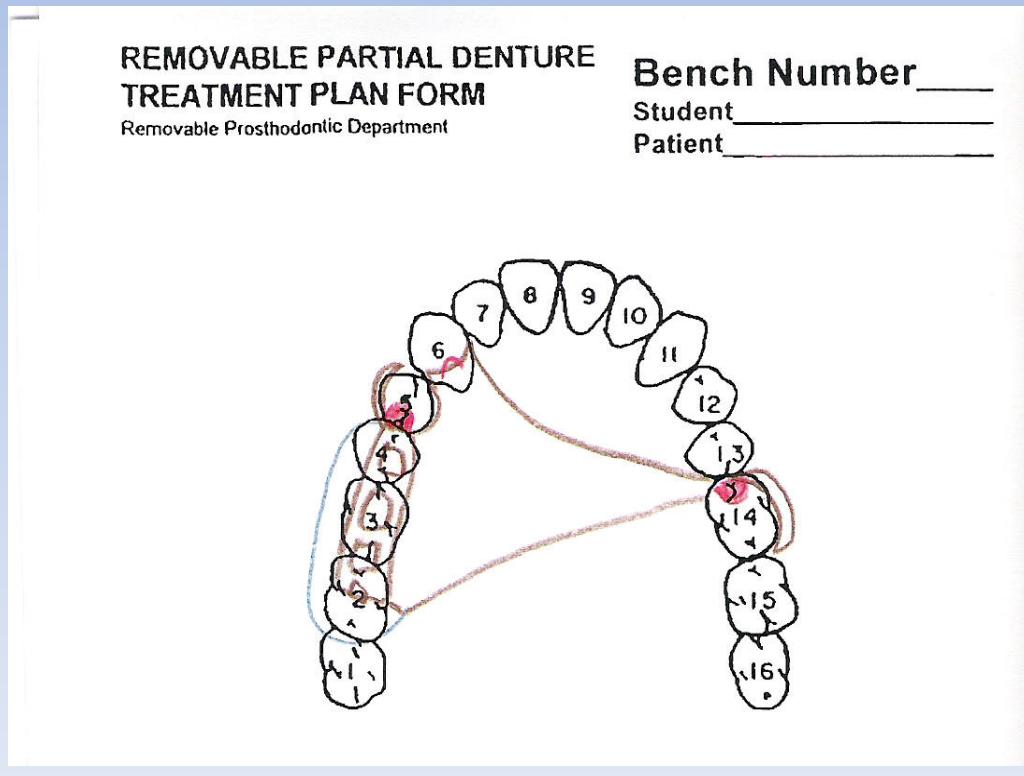
# The “Pi” major connector was not included in your text.



This is the pi major connector, that's not included in the Stewart text. So, I'm not saying it wouldn't

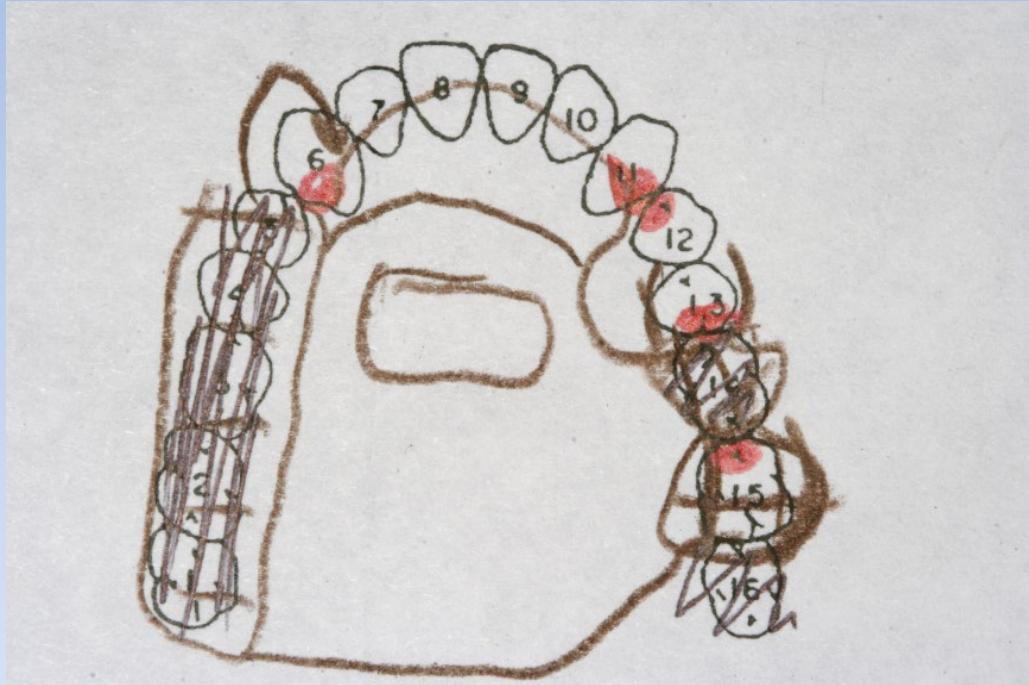
work, but it's certainly off the grid.

# The triangle major connector

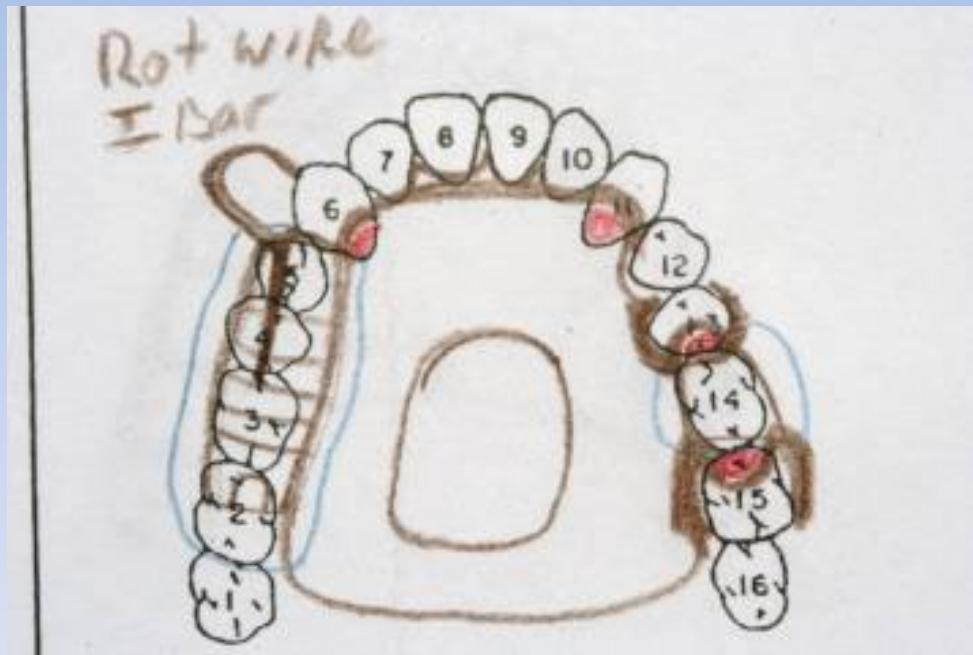


The triangle major connector. Now, there's many things wrong with this one. There's no

reciprocation, but this is a Kennedy Class 2. That means it needs three retentive clasp assemblies. So we've got one here, we need one here and one here. Okay, say you're ahead of the game already, you know not to do this.



But put yourselves in the instructor's spot when they, when a student brings you this, and you go, "Hmm." Things that make you go, "Hmm."



Wrought wire. This is more than 10 years ago. It's not that kind of wrought, okay.