

16. Orthodontic treatment without so called orthopedic appliances

(A) Treatment of pseudo C III

1. Non extraction treatment (lower case of P. 25)

- * In pseudo C III cases with no crowding, and after correction of the crossbite, the upper incisors will not be too proclined.
- * In some pseudo C III cases, Bolton tooth size discrepancy exist, then stripping of lower incisors is indicated.

2. Extraction of 4 1st bicuspid (most cases) (P. 49)

- * In pseudo C III cases with crowding, the treatment calls for removal of two upper 1st bicuspid to relieve crowding and prevent increase dental compensation and the removal of two lower 1st bicuspid to get rid of the crossbite.

3. Others (upper case of P. 25 & P. 51)

- * Depends on original dental condition and crowding for example there are a number of options : one lower incisor extraction, two upper lateral incisors and two lower 1st bicuspid, two upper 1st bicuspid and two lower 1st molars ... etc.

(B) Treatment of mild true C III

1. Non-extraction treatment (few cases) (P. 53)

- * In true C III cases ,there is more space in the lower arch

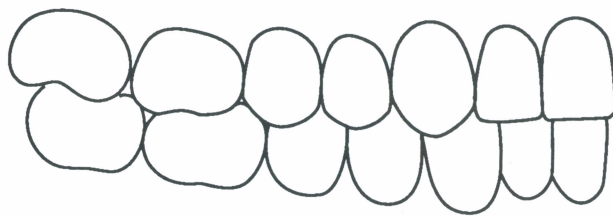
2. Extraction of two lower 1st bicuspid (lower 3rd molar present) (P. 55)

- * Try not to remove teeth from upper arch, and correct the crossbite by retraction of lower anteriors
- * After orthodontic treatment, the upper 2nd molar will occlude on the lower 3rd molar; if the lower 3rd molars are missing, the upper 2nd molar will have no antagonist. So before setting the treatment plan, evaluate the 3rd molar carefully by routine X - ray check up.

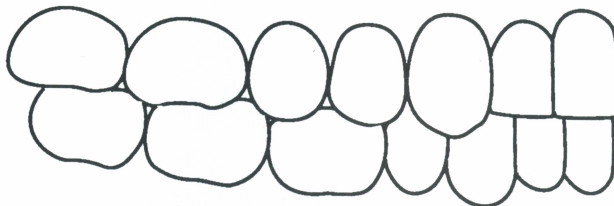
? reference :

@ Popp TM, Gooris CGM, Schur JA : Non surgical treatment for a class III dental relationship : A case report. AM J Orthod Dentofac Orthop 103 : 203 - 11, 1993.

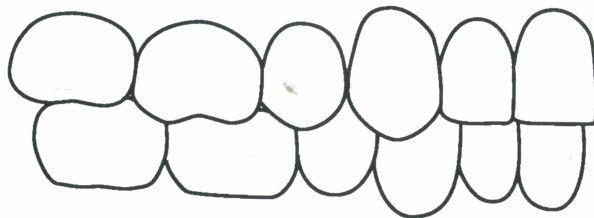
Nonextraction VS Extraction Treatment



Nonextraction Treatment



$\frac{4}{4}$ Extraction Treatment



$\frac{4}{4}$ or $\frac{5}{4}$ Extraction Treatment

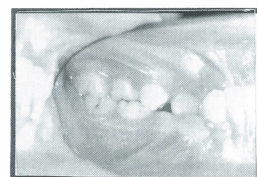
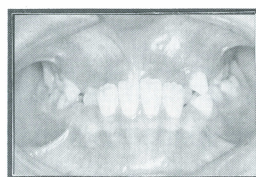
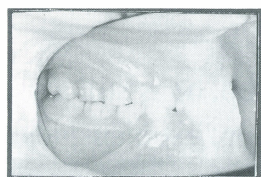
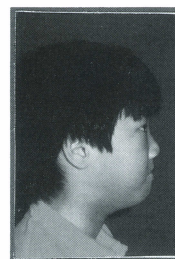
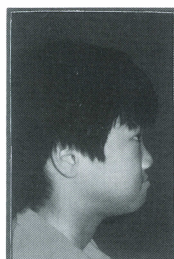
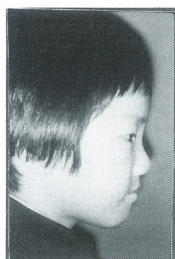
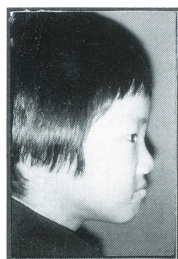
"A class III molar relation presents some unique occlusal contacts. The maxillary first molar occludes with the mandibular second molar so that the maxillary second molar has no opposing tooth and does not provide any function. If not addressed, the maxillary second molar can overerupt and impinge on the mandibular gingival tissues. One alternative would be to hold the maxillary second molar, at the plane of occlusion while waiting for the possible eruption of the mandibular third molars to function with them. This would require a splint for several years with the possibility that the mandibular 3rd molars may not erupt into occlusion. If the maxillary 2nd molars are extracted, no maintenance is required, and both the maxillary and mandibular 3rd molars may erupt into occlusion at a later time."

- Comments :
1. Unnecessary trauma due to unnecessary extraction of max. 2nd molar
 2. Though without antagonist for couple of years waiting for eruption of lower 3rd molars. No splint is necessary to prevent over eruption of max. 2nd molar.
 3. Extraction of 2 upper 2nd bicuspid and 2 lower 1st bicuspid (lower 3rd molar absent)
 - * If lower 3rd molars are absent, or severe crowding occurs on the upper arch not only the two lower 1st bicuspid but also the two upper 2nd bi. should be removed.
 4. Others

(C) Comparison of mild true C III treatment

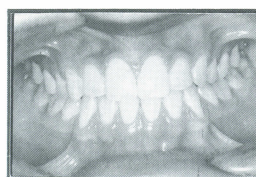
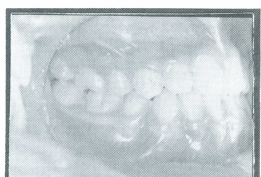
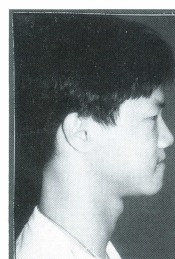
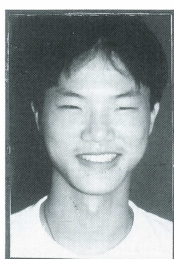
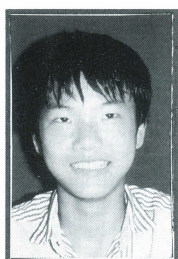
Comparison of mild true C III treatment

	regular ortho only	max. protraction & ortho
Timing for TX	late	early, < 8 yr. ?
Extraction	2 lower 1st bicuspid	non extraction
Upper incisors	maintain	proclined
Lower incisors	lingually retracted to compensate prognathic mand	maintain
Treatment mechanics	simple ortho	complex ortho with RPE and face mask
Lips	harmony due to lower incisor retraction	protruded due to proclined upper incisors
Orthopedic change on maxilla	non	? or none
Relapse	less	more



7y1m

10y6m



12y10m

17y10m

Stable Tx of Pseudo C III

What can we learn from this case ?

◆ 7y 1m , male

A 7y 1m boy with a pseudo C III malocclusion with an orthognathic profile. Even with an ANB of -2 a Wits of -8, we can see from the three circles, it is an easy pseudo C III. I am not worried at all about the deep bite and prognathic CO profile. Because he is a pseudo CIII with orthognathic CR profile at the beginning. Don't be mislead by the prognathic CO profile and frightening cephalometric data.

◆ 10y 6m

Without early treatment, through 3y 5m follow up, he is still a pseudo CIII with orthognathic CR profile. Due to severe space discrepancy, four first bicuspid were removed to begin orthodontic treatment.

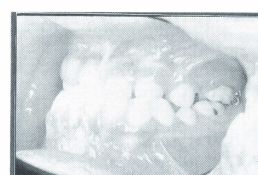
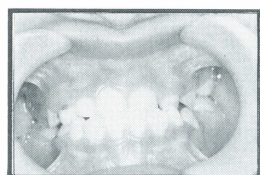
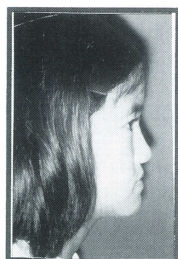
◆ 12y 10m

Post orthodontic treatment, he has good Class I occlusion and orthognathic profile just like the pre-treatment orthognathic CR profile.

◆ 17y 10m

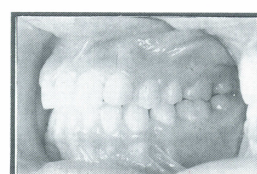
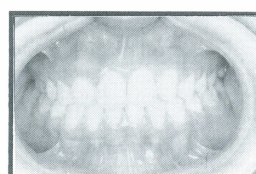
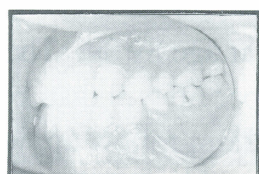
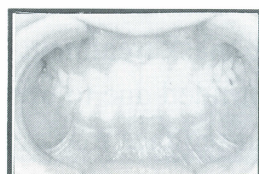
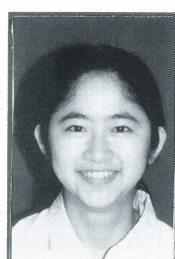
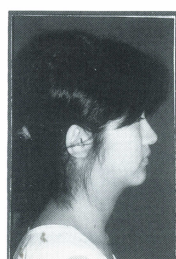
Through long term follow, he still maintains good Class I occlusion and orthognathic profile.

- * Use the practical 3 circle differential diagnosis we can make the correct diagnosis easily.
Don't be mislead by the patient's original prognathic CO profile and misleading cephalometric data.



8y3m

11y3m



14y1m

18y10m

Stable Tx of Pseudo C III

What can we learn from this case ?

◆ 8y 3m , female

A pseudo C III with two congenitally missing maxillary lateral incisors that creates a maxillary anterior perimeter collapse. Although the ANB measurement was -4 and the Wits was -10, according to the three circles, she is an orthognathic CR profile and, thus remains a pseudo C III case with an excellent prognosis. The prognathic CO profile looks bad, but the CR profile is not too bad, if we have doubts about prognosis, than wait and re-evaluate. Don't be mislead by the prognathic CO profile and frightening cephalometric data.

◆ 11y 3m

Through 3 years long term follow up (without early correction), she still has functional shift, good orthognathic CR profile and the Class I buccal occlusion. Due to congenitally missing of two upper laterals, so two lower first bicuspid were removed to match with the upper dentition.

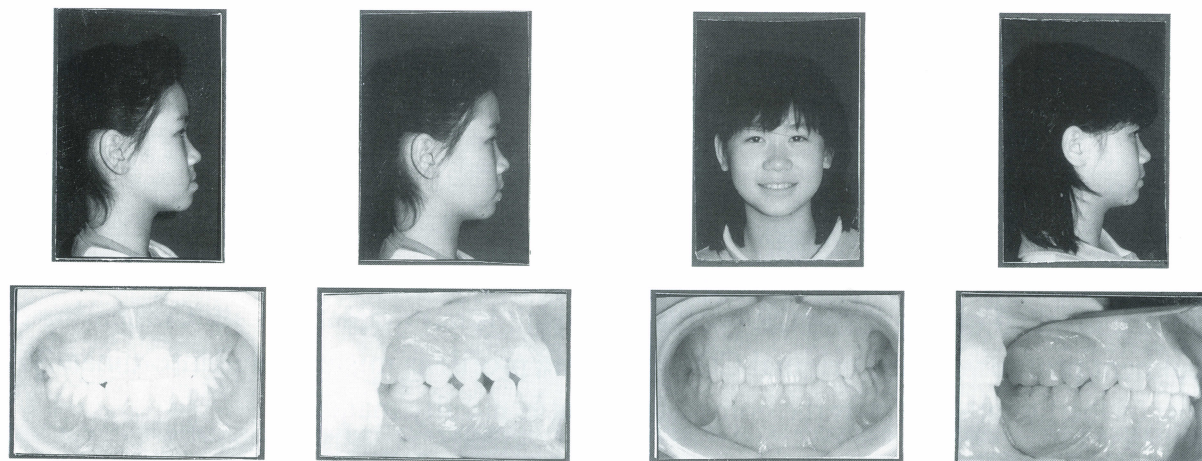
◆ 14y 1m

Post orthodontic treatment, Class I buccal occlusion and orthognathic profile were achieved. The upper canines were moved forward to take place of laterals and upper first bicuspid were moved forward to take place of canines.

◆ 18y 10m

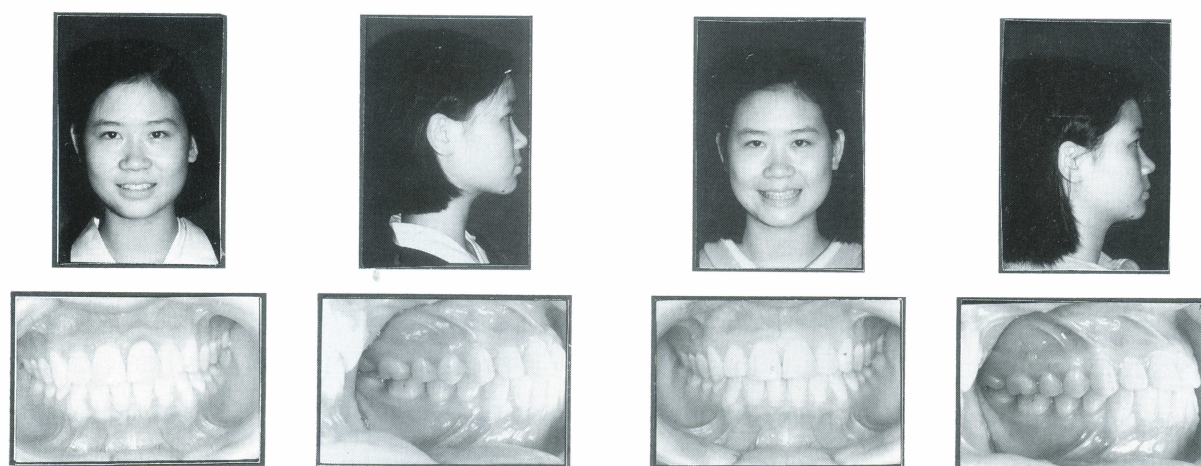
Through long term follow up, she still has good Class I occlusion and orthognathic profile.

- ✱ It is possible to look at the initial prognathic CO profile and diagnose her as severe Class III with maxillary deficiency and then correct her at age 8y 3m. The face mask treatment can correct her anterior crossbite easily, but the upper lip will then be protruded due to upper incisors being moved forwards. From the long term follow up, we can see face mask early treatment is not only no need but also harmful to this patient.
- ✱ Though without early treatment, her overbite gets deeper, but according to 3 circles diagnosis, anterior crossbite cases with functional shift, deep overbite and orthognathic CR profile will have good prognosis. This is a typical pseudo CIII case with good prognosis. Don't be mislead by the original prognathic profile and frightening cephalometric data.



10y9m

11y11m



15y5m

17y8m

Stable Tx of True C III

What can we learn from this case ?

◆ 10y 9m , female

A true C III with an orthognathic CR profile at age 10y 9m has a good prognosis. Don't be misled by the original prognathic CO profile.

◆ 11y 11m

This patient was treated by nonextraction treatment. If the post treatment profile is compared with the original CO prognathic profile, the change is impressive. However, when compared with the original orthognathic CR profile, the result is not dramatic at all. Comparing the post treatment profile with the original CO prognathic profile is misleading. Unfortunately, in most of the literature, this is the comparison that is usually made

◆ 15y 5m

Except the overbite a little bit shallower, she still has good Class I buccal occlusion and orthognathic profile.

◆ 17y 8m

After long term follow up, she still has a good Class I occlusion and orthognathic profile.

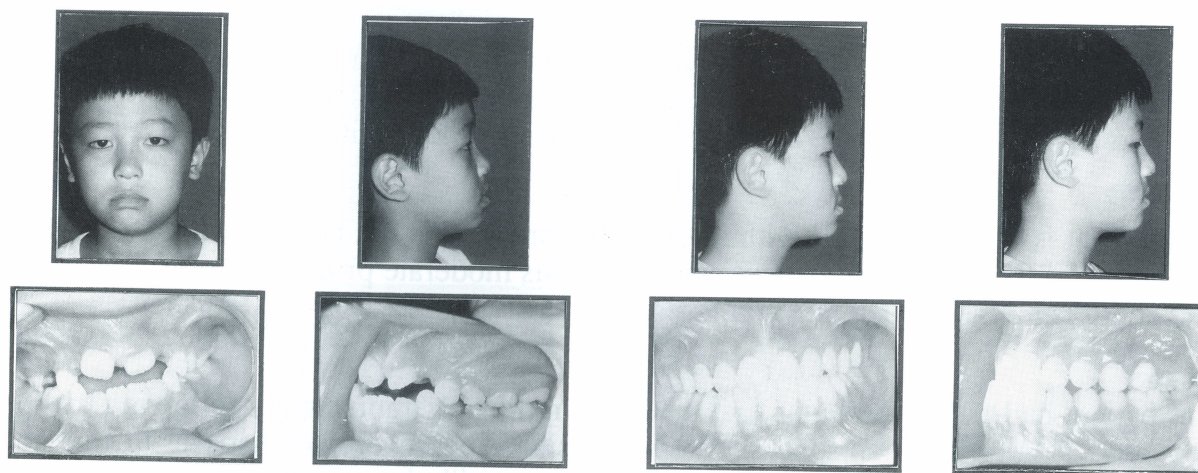
✱ A true C III with an orthognathic CR profile that has a good prognosis. The retention has been stable.

✱ Even though in this case her profile still orthognathic through the active growth period. Her overbite is getting shallower and shallower though continuing mandibular growth.

✱ As a rule, functional Class III with prognathic CR profile, the prognosis is bad (case on P. 57), functional Class III with orthognathic CR profile the prognosis is good (case on P. 53, P. 55).

There are two exceptions to the rules, they can turn from original orthognathic profile through growth to prognathic profile : 1. Class III with very shallow overbite or open bite (P. 17) 2. Class III Sub (P. 59).

Although not every these type of case will change from orthognathic profile to prognathic profile, we should pay special attention to diagnose it and warn the possibility of prognathic profile change to the patient and parent at early consultation to prevent late embarrassment.



6y11m

10y5m



13y6m

18y7m

Stable Tx of True C III

What can we learn from this case ?

◆ 6y 11m , male

This patient looks like a true C III with an open bite and a slightly prognathic profile. However, don't jump to conclusion because this patient's front teeth are not yet fully erupted, and a more accurate diagnosis and forecast can be made by waiting.

◆ 10y 5m

This patient is still a true C III with a somewhat prognathic CR profile, but the prognosis is not too bad if the parent and patient can accept this moderate prognathic profile. Watch that the patient is no more open bite at this stage.

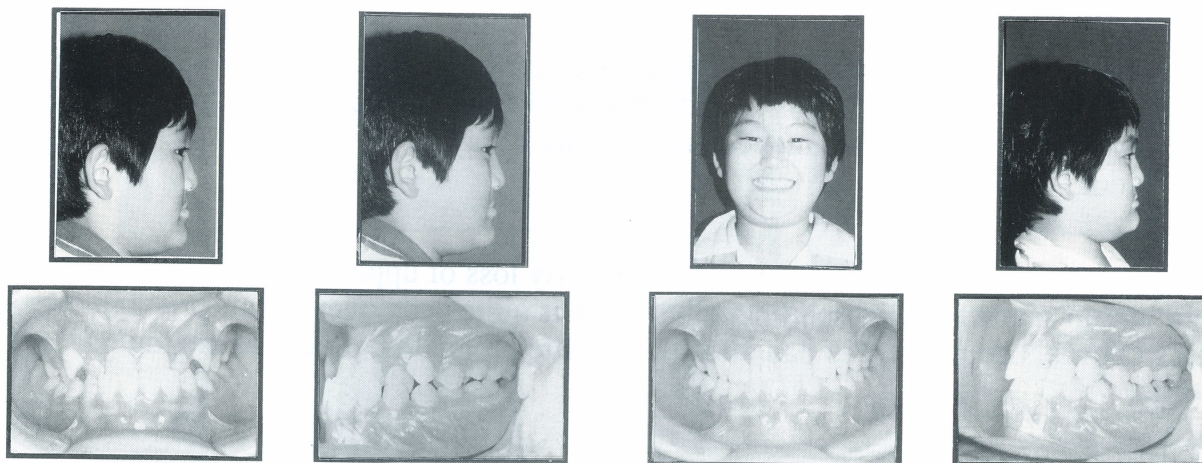
◆ 13y 6m

This patient had two mandibular first bicuspid removed. Immediately following treatment, there were small extraction spaces left on each side. These were good spaces to have to retract mandibular incisors in the event that unfavorable mandibular growth caused a return of the anterior crossbite. Usually these spaces will close by itself without orthodontic treatment. The maxillary 2nd molars are extruding and the mandibular 3rd molars are needed to have good posterior occlusion.

◆ 18y 7m

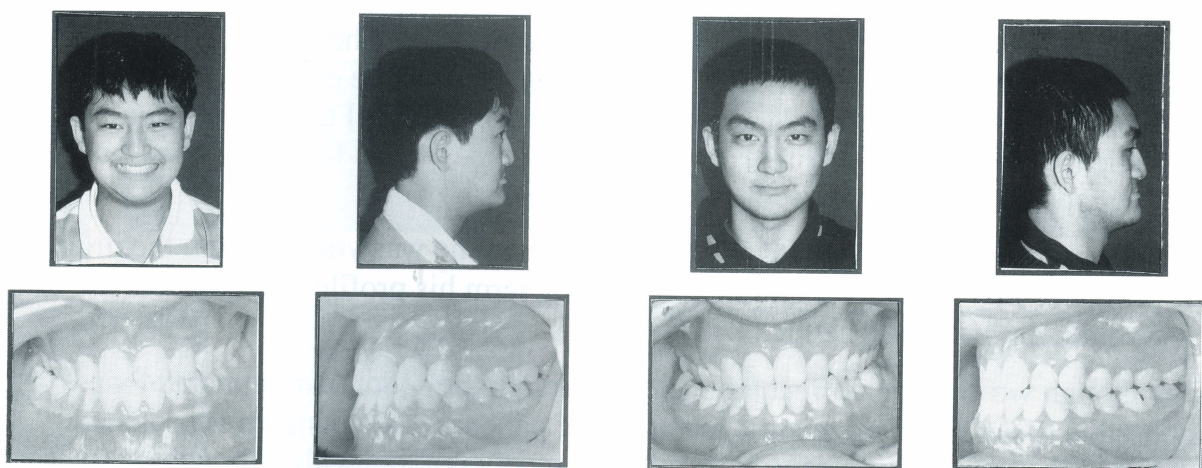
After the lower 3rd molars erupted, a short term of orthodontic treatment again to gain good in erdigitation of posterior occlusion.

- ✱ According to the three circle diagnosis, this patient is a true C III with a slightly prognathic profile with a fair prognosis. Post-treatment the occlusion is stable and the profile is acceptable.
- ✱ Whenever the patient is too young to make an accurate and definite diagnosis it is no harm to wait and then re-evaluate. Like this case at age 10y 5m gives us much more definite diagnosis.
- ✱ C_n Class III cases, for predicting the future profile change, we can predict it quite accurately just look at patient's CR profile, usually while looking at patient's CR profile I will explain to the parents at this profile and add a little more chin for future growth, will you accept this profile, and most of the time the prediction is very close just like this case
- ✱ Before doing lower bicuspid extraction in Class III case, we should always check whether the lower 3rd molars are present. If congenital missing of lower 3rd molar, than removal of two more upper 2nd bicuspid is indicated. Otherwise, on the future after orthodontic treatment, there will be no antagonists for upper 2nd molars.



9y11m

10y9m



13y1m

19y4m

Unstable Tx of True C III

What can we learn from this case ?

◆ 9y 11m , male

This patient had a prognathic CR profile with a functional shift, so the prognosis is rather poor. It is impossible to treat this type of prognathic profile with orthodontic treatment alone. Right upper first molar was removed due to badly decayed. Two upper canines labially block - out.

◆ 10y 9m

Post first phase orthodontic treatment, due to early loss of upper right first molar, the upper right buccal segment collapsed lingually. There is quite deep overbite and enough overjet and Class I buccal occlusion. But patient still has quite prognathic profile as beginning CR profile.

◆ 13y 1m

There is still Class I buccal occlusion, but the overbite is much shallower and still with prognathic profile.

◆ 19y 4m

Due to continuing growth of the mandible, not only the buccal occlusion became Class III again, the profile changed to even more prognathic. The anterior crossbite happened again.

- * Continued mandibular growth will ruin the treatment result. The long - term follow-up shows his occlusion relapsing to the original Class III, and the profile even more prognathic. You can see this from the three circle diagnosis. This diagnosis will tell you from the first that this patient was a true C III with a prognathic profile. You can treat him to a Class I at an early age, but growth will cause it to relapse to Class III
- * Actually we can predict this patient's prognosis, since he was young. From the prognathic CR profile at 9y 11m, we can predict on the long term his profile will be about the same and even a little bit more prognathic.
- * Even though we still can correct the malocclusion by orthodontic treatment alone, but it is impossible to get rid of prognathic mandible. If patient's main concern is prognathic mandible, the only solution is orthodontic treatment combine with orthognathic surgery.
- * In a Class III case with poor prognosis, but patient would like to accept compromise early treatment, than we should try nonextraction at the beginning. Like this case if patient still can accept compromise prognathic profile, than nonextraction or one incisor extraction still can correct the anterior crossbite. Of course there is no way we can correct the prognathic p ofile without combine surgical correction.