

病例討論一

# 中華民國鑲復牙科學會 第100次病例討論

嚴重磨耗齒列患者之全口鑲復治療

林口長庚紀念醫院義齒補綴科

受訓醫師：鍾國恩 醫師

指導醫師：鄭鈞仁 醫師

**Key words:**

Dental attrition, Full mouth  
rehabilitation

## Personal data



- Name: 唐 O 文
- Gender: male
- Age: 67 y/o
- Date of first visit: 2022/12/08
- Occupation: 工人
- Psychological state: Philosophical

## Chief Complaint

- 因吃檳榔導致牙齒磨耗沒辦法吃東西，想評估做補助的活動假牙重建



## Past Medical History

- Hypertension, DM under medication control
- Denied any food and drug allergy

## Personal Habits

### ABC history

- Alcohol drinking: +, seldom
- Betel nut chewing: +
- Cigarette smoking: +, 0.5 ppd

### Parafunction: denied

### Oral hygiene care

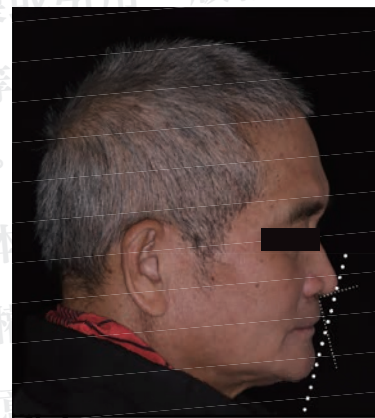
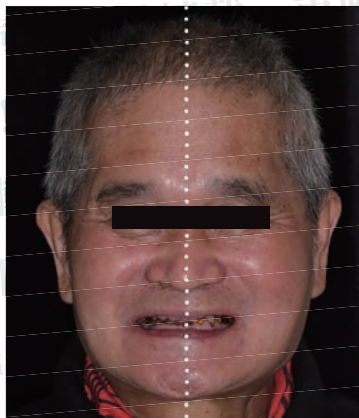
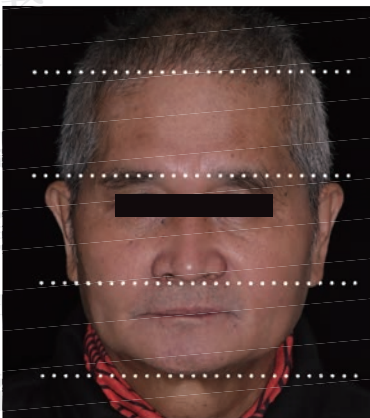
- Dental brush: 1 time/day
- Dental floss / interdental brush: denied
- Other oral appliance: denied

## Past Dental History

- Extraction

## Clinical Examination

### Extra-oral Findings



- Square shaped face
- Facial proportion= 1 : 1 : 0.9
- Lip incompetence: (-)
- Mentalis m. strain: (-)
- Facial/Dental midline: on
- Average smile line
- Facial asymmetry
- Profile: straight
- Upper/lower lip to E line: retruded
- Nasolabial angle: 93°

## TMJ-related Examinations

- Joint palpation pain: (-)
- Muscle palpation pain: (-)
- TMJ clicking sound: (-)
- Mouth opening deviation: (-)
- Maximum mouth opening: 35mm (#11 - 41)

## FM Panoramic Film



Remaining Dentition

Eichner classification : B3

5	4	3	2	1	1	2	3	8							
8	7	6	5	4	3	2	1	1	2	3	4	5	6	7	8

## Intra-oral Findings



- Arch form: Ovoid
- Oral hygiene: poor

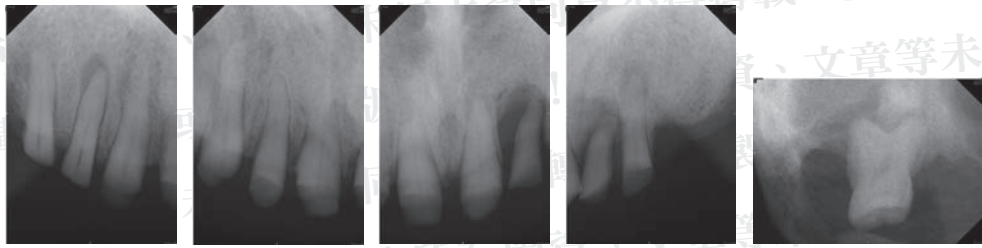


- Missing: 16-18, 24-27
- 28 mobility Gr.III
- FM multiple teeth severe attrition

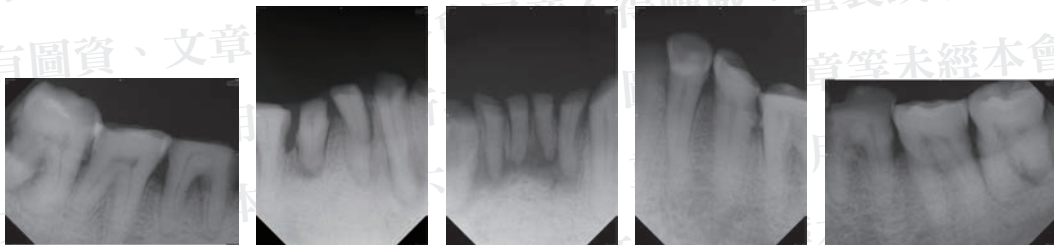


- EPT(-):12-15, 21-23, 31-33,41-45

## Radiographic Finding & Periodontal Charting



Maxillary arch														
<b>Facial</b>	333	323	333	222	333	333	599	222					9 10 9	<b>Probing Depth</b>
	15	14	13	12	11	21	22	23	X	X	X	X	28	
<b>Palatal</b>	323	323	333	322	334	333	894	222					765	<b>Probing Depth</b>
<b>Mobility</b>							I						III	
<b>EPT</b>	—	—	—	—	—	—	—	—						
<b>CAP</b>		+				+		+						
<b>Root Length in X ray (mm)</b>	16	17	22	15	16	16	11	14						



Mandibular arch																	
<b>Lingual</b>	866	533	333	433	222	222	222	212	212	222	222	335	345	533	434	455	<b>Probing Depth</b>
	48	47	46	45	44	43	42	41	31	32	33	34	35	36	37	38	
<b>Facial</b>	765	453	443	333	322	222	222	222	212	222	222	333	335	556	343	467	<b>Probing Depth</b>
<b>Mobility</b>	II															II	
<b>EPT</b>				—	—	—	—	—	—	—	—	—	—	—	—	—	
<b>CAP</b>				+			+	+	+	+							
<b>Root Length in X ray (mm)</b>			9	13	17	10	7	7	10								

## VDO Set Up & Bite Registration Taking



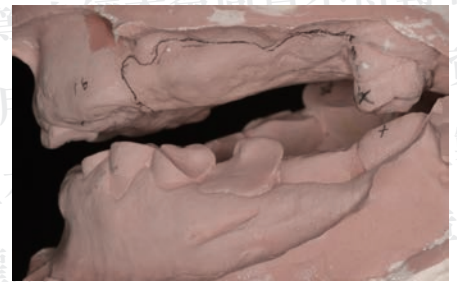
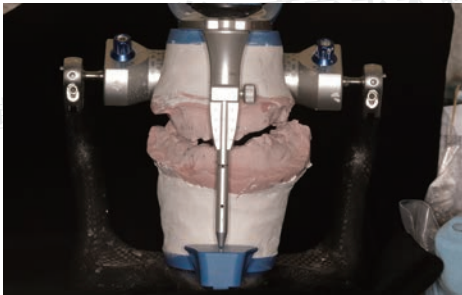
VDO record with leaf gauge



Face bow transfer

VDO = VDR - Freeway space (2mm)

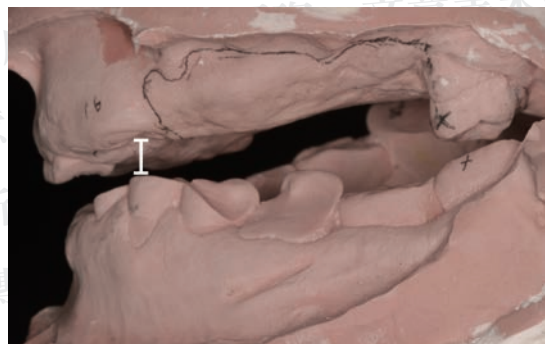
## Diagnostic Cast Evaluation



## Occluding Space Evaluation



11 - 41 : 5mm



23 - 34 : 5mm

## Diagnosis

- Generalized periodontitis, stage IV, Grade C
- 12-15, 21-23, 31-33, 41-45 pulp necrosis, chronic apical periodontitis
- Missing: 16-18, 24-27

## Problem List

- Betel nuts chewing and smoking
- Multiple teeth severe attrition without sufficient ferrule
- Insufficient occlusal space for restorations fabrication
- Operation phobia owing to general condition
- Financial issue

## Patient Expectation

- 病人預算有限
- 病人想要使用活動假牙補助



## Tentative Prosthetic Treatment Plan

### Disease Control Phase

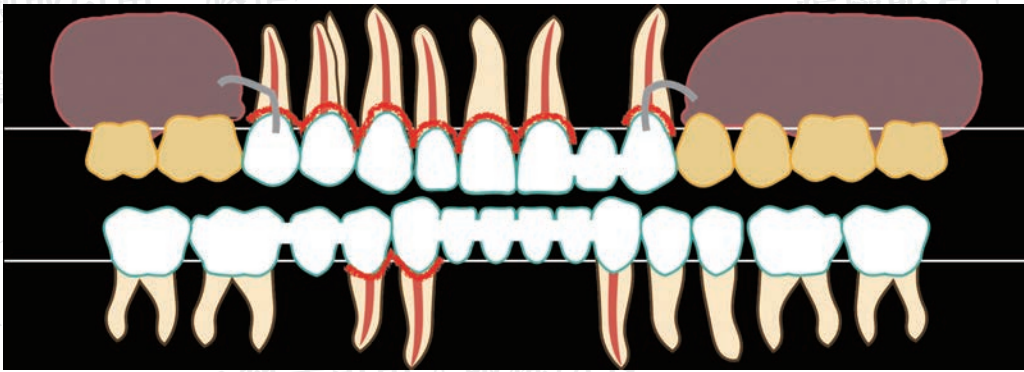


- Quit betel nuts chewing and smoking
- Extract hopeless teeth: 22, 28, 32-42, 38, 45, 48
- Periodontal therapy

# Tentative Prosthetic Treatment Plan

## Rehabilitation Phase

### Option 1: FPD + RPD



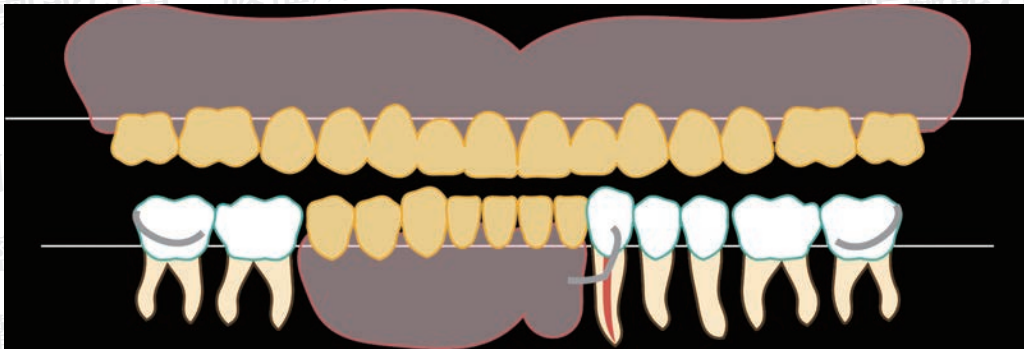
#### • Maxilla:

- Ext: 22,28
- CLP: 11-15,21,23
- Endo: 12-15,21,23
- FPDs: 11,12,13,14,15,21x23
- Upper Kennedy class I RPD

#### • Mandible:

- Ext: 32-42,38,45,48
- CLP: 43,44
- Endo: 33,43,44
- FPDs: 33xxxx43,34,35,36,37,44x46,47

### Option 2: FPD + RPD



#### • Maxilla:

- Ext: 11-15,21-23,28
- Upper CD

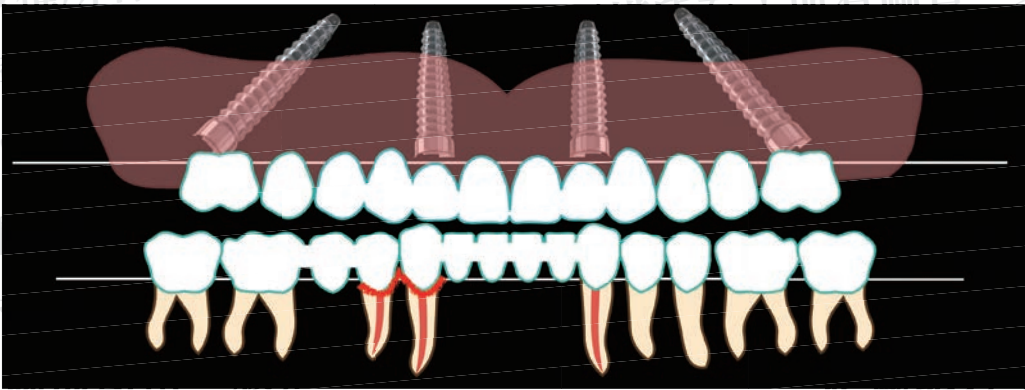
#### • Mandible:

- Ext: 31,32,41-45
- Endo: 33
- FPDs: 33,34,35,36,37,46,47
- Lower Kennedy class IV RPD

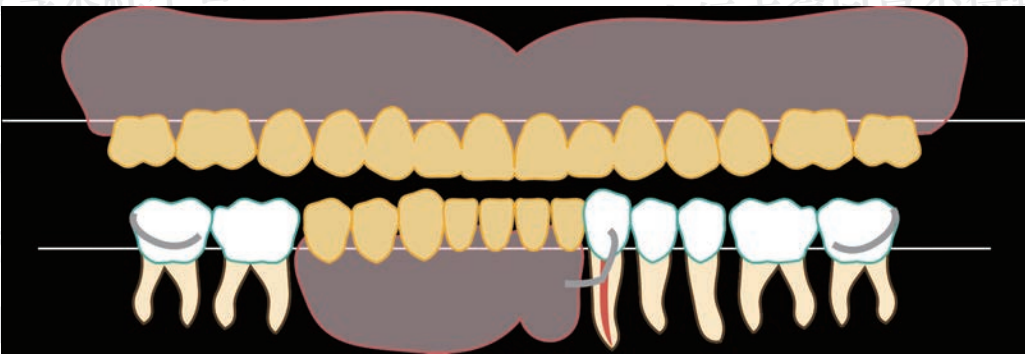
### Option 3: Implant + FPD



Option 4: All on 4 + FPD



Patient's expectation: Option 2



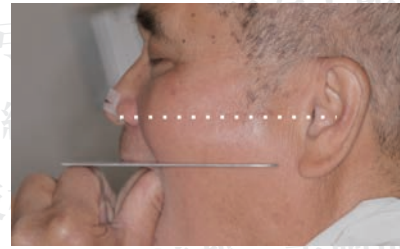
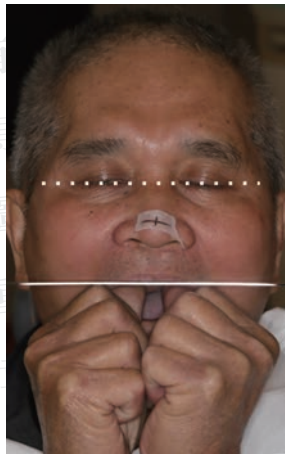
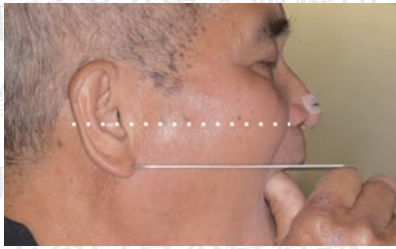
- 病人不想做手術
- 病人預算有限
- 病人想要使用活動假牙補助

## Treatment Course

### Teeth Extraction and Study Cast Impression



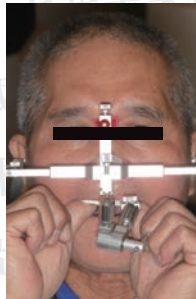
## Wax Rim Try In & VDO Record



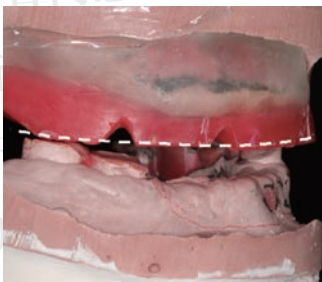
VDO = VDR - Freeway space (2mm)



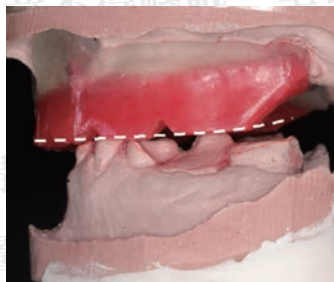
## Bite Registration Taking & Face Bow Transfer & Shade Selection



## Mounting Cast Analysis



- 46 : crown high under occlusal plane
- 47 : deficient contour for RPD clasp



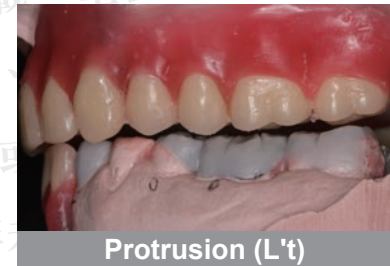
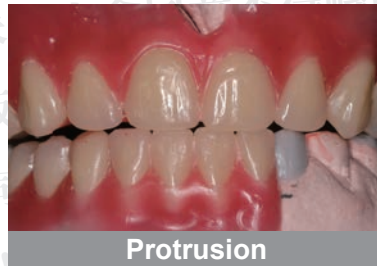
- 33 : attrition and pulp necrosis
- 34 : acceptable occlusal position
- 35, 36 : attrition teeth
- 37 : crown high under occlusal plane

-> 33, 35, 36, 37, 46, 47 Full-Contoured Diagnostic Wax up

## FM Diagnostic Wax Up



## Eccentric Movement: Bilateral Balanced Occlusion



## Lower Provisional Crowns Delivery



Bite Registration

## Teeth Arrangement: Bilateral Balanced Occlusion



Working side



Working



Non-working side



Non-working side

## Interim Denture Delivery



## Eccentric Movement: Bilateral Balanced Occlusion



## Extra-oral Photo

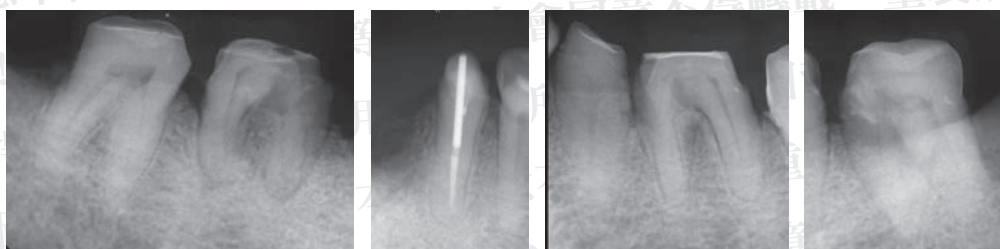


## 33 RCT, Post and Core Built Up



Parapost

## Radiographic & Periodontal Follow Up



Mandibular arch								
Lingual	533	333	222	333	343	333	434	Probing Depth
	47	46	33	34	35	36	37	
Facial	443	443	222	333	334	334	343	Probing Depth
Mobility								

## 6 Months Follow Up

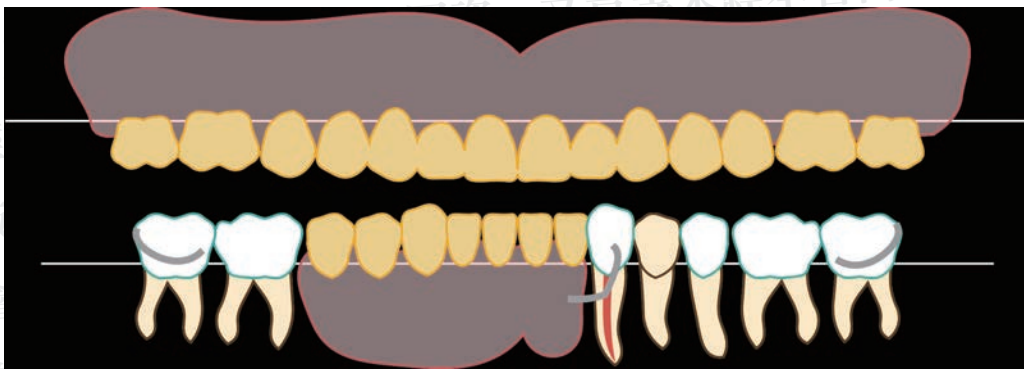


Confirmed No Betel Nut Consumption



Check Angular Cheilitis

## Definitive Prosthetic Treatment Plan



• **Maxilla:**

- Complete denture

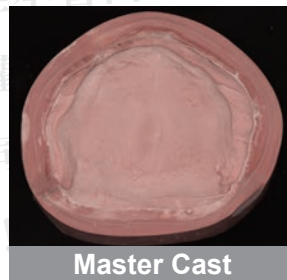
• **Mandible:**

- FPDs: 33,35,36,37,46,47
- Lower Kennedy class IV RPD
- Major connector: lingual plate
- Rest: 33(C), 37(DO), 46(MO), 47(DO)
- Clasp: 33(I bar), 37(C clasp), 47(C clasp)

## Maxillary Arch Border Molding & Final Impression



VPS

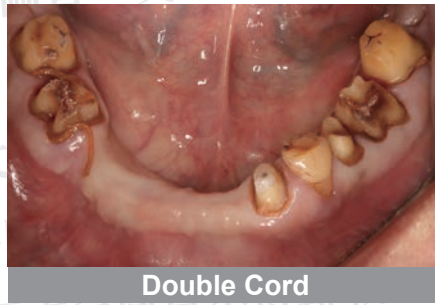


Master Cast

33, 35, 36, 37, 46, 47 Final Preparation & Impression



Check Preparation



Double Cord



VPS

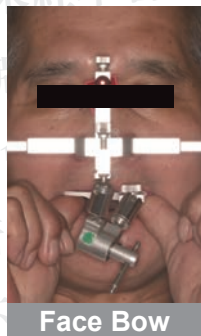


Master Cast

Wax Rim Try In



Check VD



Face Bow



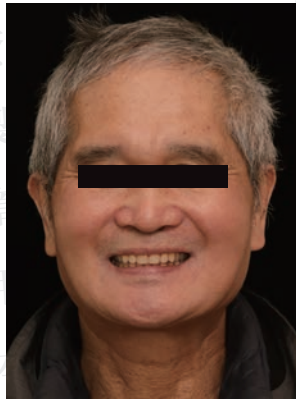
Take Bite

## FM Teeth Arrangement



- 33 preparation too mesial and lingual tilting

## Wax Denture Try In



## 33, 35, 36, 37, 46, 47 Final Preparation & Impression



Preparation Adjustment



VPS



Bite Registration Taking

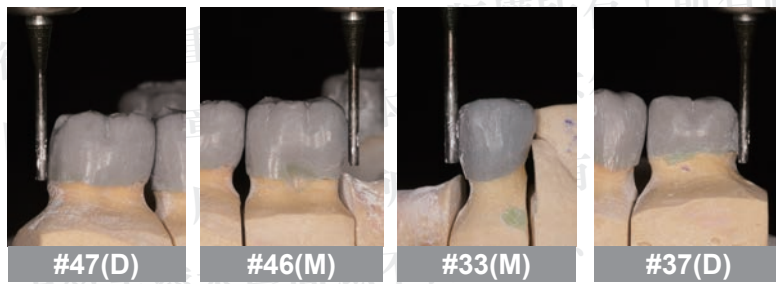
# Full-Contoured Wax Up



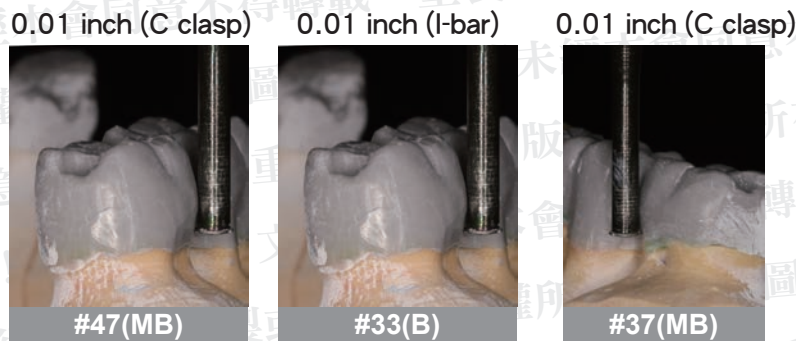
## Eccentric Movement: Bilateral Balanced Occlusion



## Check Guiding Planes



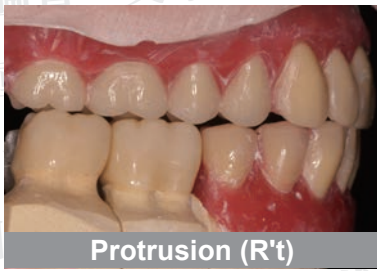
## Check Undercuts for RPD Clasps



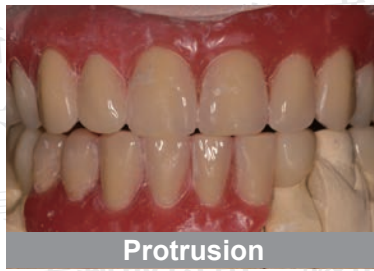
## 33, 35, 36, 37, 46, 47 CAD-CAM Monolithic Zirconia Crowns Fabrication



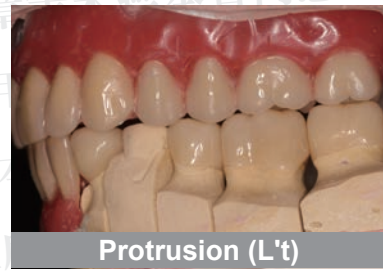
## Eccentric Movement: Bilateral Balanced Occlusion



Protrusion (R't)



Protrusion



Protrusion (L't)



Working side



Shift to R't



Non-working side



Non-working side



Shift to L't



Working side

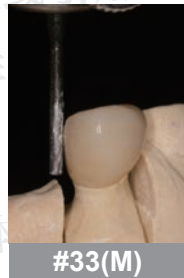
## Check Guiding Planes



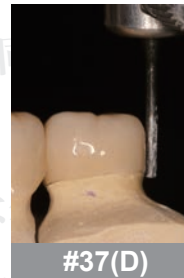
#47(D)



#46(M)



#33(M)



#37(D)

## Check Undercuts for RPD Clasp

0.01 inch (C clasp)

0.01 inch (I-bar)

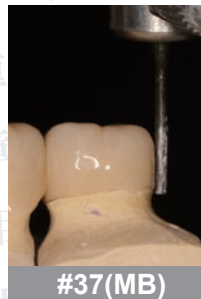
0.01 inch (C clasp)



#47(MB)

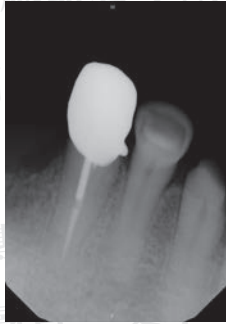


#33(B)

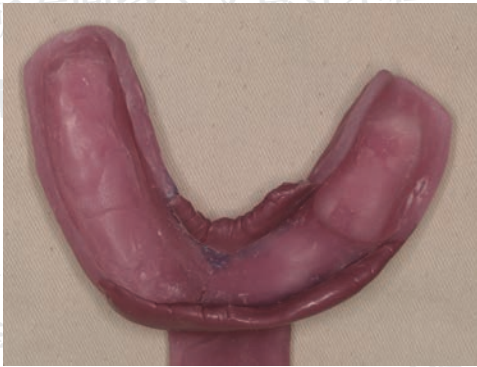


#37(MB)

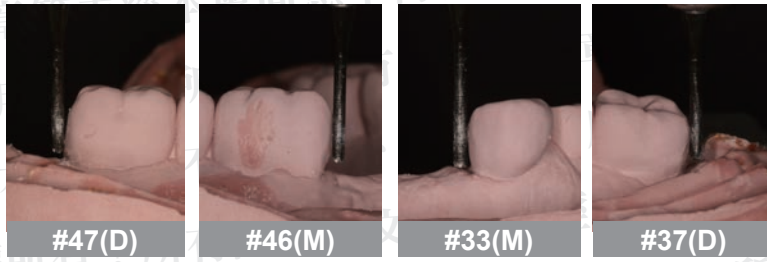
## Zirconia Survey Crowns Try In & Delivery



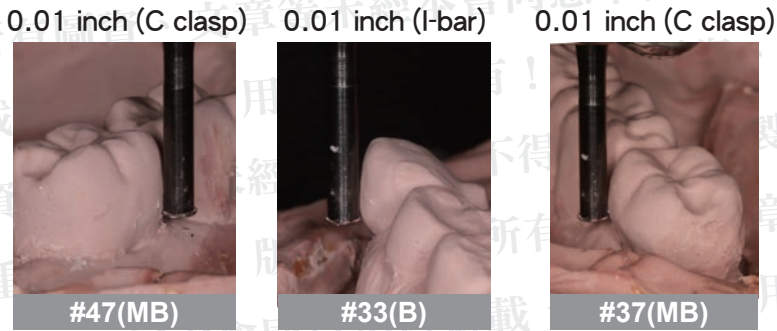
## Mandibular Arch Final Impression



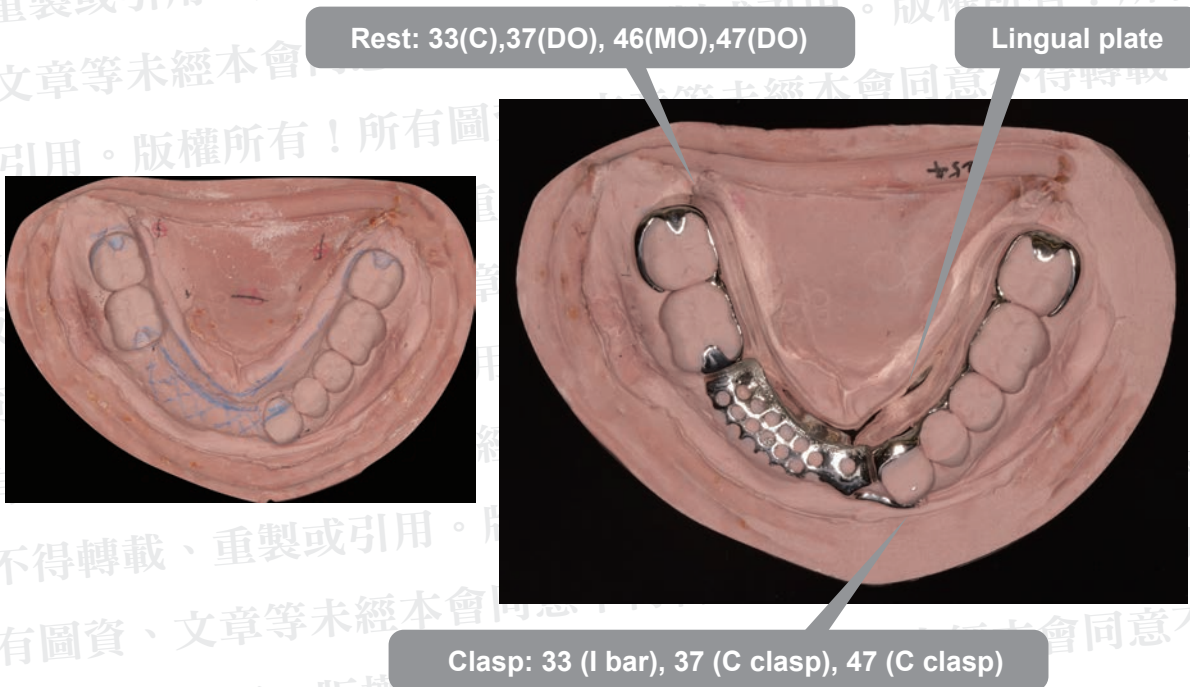
## Check Guiding Planes



## Check Undercuts for RPD Clasp



## Check Undercuts for RPD Clasp

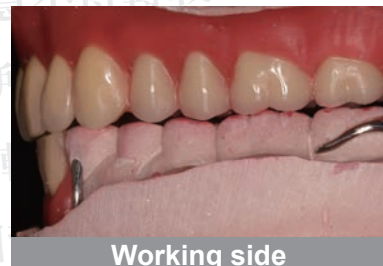
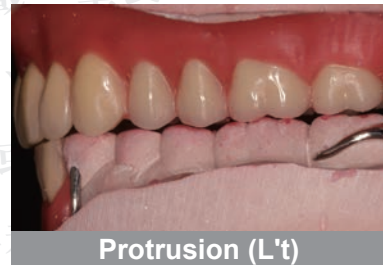


RPD Framework Try in



Bite Registration Taking

## Wax Denture



## Eccentric Movement: Bilateral Balanced Occlusion

## Wax Denture Try In



## Lab Remount



Remounting jig

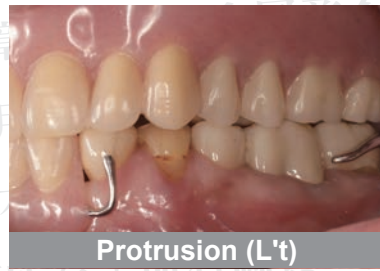
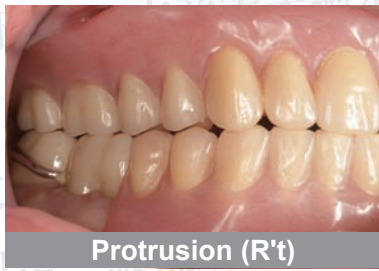
## Eccentric Movement: Bilateral Balanced Occlusion



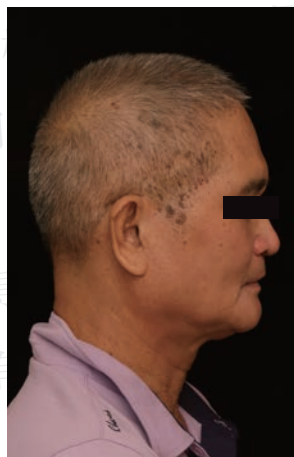
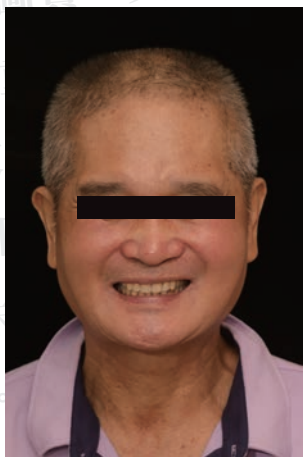
## Delivery



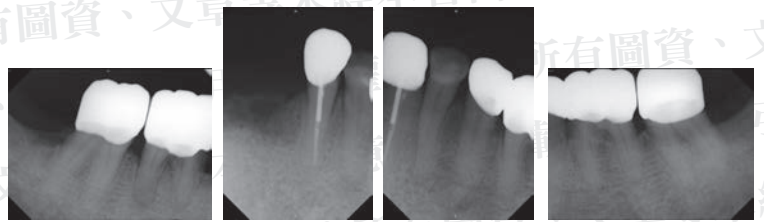
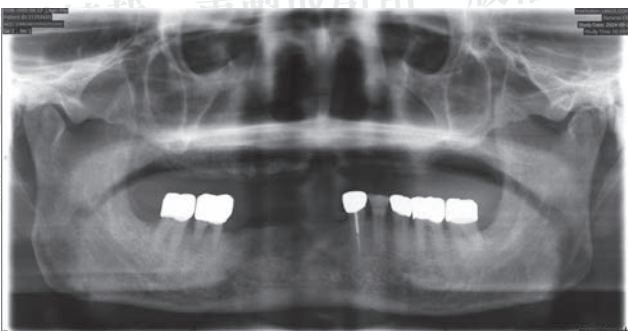
## Eccentric Movement: Bilateral Balanced Occlusion



### Extra-oral Photos



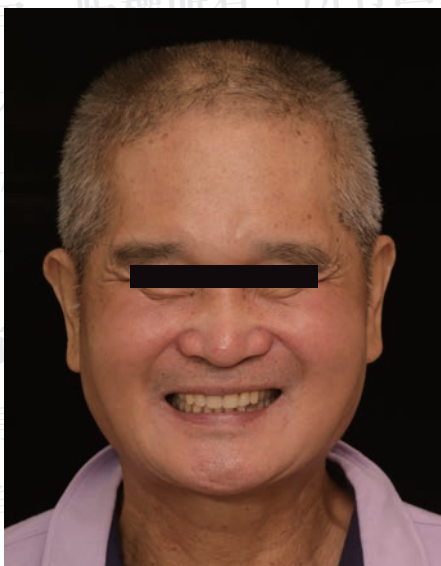
### Post Treatment Panoramic Film and Periapical Film



## Maintenance Phase

- 1 day / 1 week / 2 weeks / 1 month / 3-6 months follow up
- Routine periodontal SPT
- Quit smoking

## 6 Months Follow Up



## Q & A

**Q：**下顎做 zirconia crowns 與上顎 denture teeth 對咬是否會擔心會持續有對咬上的磨耗，能不能防止繼續磨耗下去？

**A：**在假牙半年的追蹤中有發現與自然牙或者 zirconia crowns 對咬的 denture teeth 已有磨耗的狀況，目前仍在持續追蹤，未來也許會考慮在 denture 後牙咬合面以其他材料做 onlays 來避免磨耗，包括傳統的 gold onlays，或者目前陸續有文獻在探討使用 zirconia onlays 來復型後牙 denture teeth 咬合面以防止磨耗。

**Q：**在 treatment option 中有給保留磨耗的自然牙做 CLP+FPD 以及缺牙區做 RPD 的治療計畫，有沒有仔細評估這樣的治療計畫是否可行？

**A：**當初因病人只考慮拔牙做活動假牙的治療選項，因此沒有針對重建磨耗的自然牙做進一步的評估。若病人選擇要保留牙齒，會針對要重建的牙齒做 diagnostic wax up 與 mock up，確定假牙所需長度後再次評估每顆牙齒 crown-to-root ratio，且會建議病人左上也做植牙以確定兩側都能有 posterior occlusal stop。

**Q：**下顎固定式假牙為何選用 zirconia 而不是 PFM？考量為何？

**A：**下顎牙齒因嚴重磨耗，且牙齒表面有 sclerotic dentin，當初在評估時擔心 resin core 與 abutment 純以 bonding 做黏合會 retention 不足，而在 abutment 缺損量大的情況下若要以 PFM 復型勢必需要用到大量金屬，成本較高，因此考慮使用 CAD-CAM zirconia 來做贗復，能準確複製蠟型外型製作 surveyed crowns，假牙製作流程上較傳統 PFM cut back、鑄造與燒瓷簡單與可預期，對咬牙為 CD 也比較不擔心因 occlusal rest 造成 zirconia surveyed crown fracture resistance 下降的問題，然而 zirconia 做為 surveyed crown material 的長期臨床表現尚須未來更多文獻加以證實。



# 心得

鍾國恩

遙想四年前在醫院 PGY 訓練尾聲的自己，對於如何幫病人訂定適合的治療計畫仍充滿迷茫，因此毅然決然選擇繼續留在醫院 train prosthodontics，從專科訓練到通過專科考試，過程很辛苦但也收穫滿滿，很感謝林口長庚醫院的老師與技師們一路用心地帶領與教導。蔡宗伯醫師每個月主持的研討會，深度探討專科所需的各樣知識，對於臨床判斷與實際應用都帶來深刻啟發，而鄭鈞仁醫師在我準備專科考試期間對每個案例細節上的提點與教導，都是我最終通過考試不可或缺的助力。最後也謝謝訓練期間每位病人的配合與信任，我才能順利達成這項里程碑。

當初在收到本案例要做後續的全口重建時，心中想像的是配合植牙做全口固定假牙這種厲害的重建，然而病人的期待與現實面的考量卻與想像的畫面相去甚遠，但仍然充滿挑戰，要審慎評估每顆嚴重磨耗牙齒的去留、思考如何在病人有限的預算下讓病人能恢復理想的美觀與咀嚼功能，好不容易規劃出符合自己與病人期待的藍圖，花了將近一年半的時間幫病人一步一步的完成重建，正準備鬆一口氣時，卻在追蹤的過程發現原先費盡心思設計的假牙被無情磨耗，馬上又面臨到這樣的設計該如何去維護的課題，這也讓我更深刻的認識到自己仍然有許多不足的地方要去學習，也非常感謝病例討論會時各位醫師不吝惜的分享與教導。

通過考試不是學習的終點，而是一個新的起點，期許自己能持續精進，能不負病人的信任，踏實的繼續前進。



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