

# Radiotherapy Considerations for a Prosthodontic-Driven Treatment Plan

Patrick Pansoy  
IDS Class of 2020  
Group 3A



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Name: Mrs. T

79 y/o Female

Occupation: Tax Preparer

**CC: "My teeth have broken and I need them taken out".**



# History of Chief Complaint/ Dental History

- Pt was referred to Main Clinic by husband in 2019.
- Tooth #22, 27, 31, and 32 fractured due to extensive caries.
- Pt had an existing bridge from tooth #s 27-32 which came off after teeth fractured.
  - Retained it and still placed it in mouth for retention of lower partial.
- Pt has an upper complete and lower partial denture that she “has been using for years”.
  - Poligrip used for upper denture.



# Medical History (MH)

- Vitals: 146/89 mmHg, 60bpm
- Non-smoker, non-drinker
- Past Surgeries/Hospitalizations:
  - Right kidney removed (Nephrectomy) due to excessive kidney stones
  - Chronic Obstructive Pulmonary Disease (COPD)
    - Benign Right Acoustic Neuroma Radiotherapy (May 2019) on Right Ear
    - Family history of cancer: Father (Bone cancer), Sister (Lung cancer)

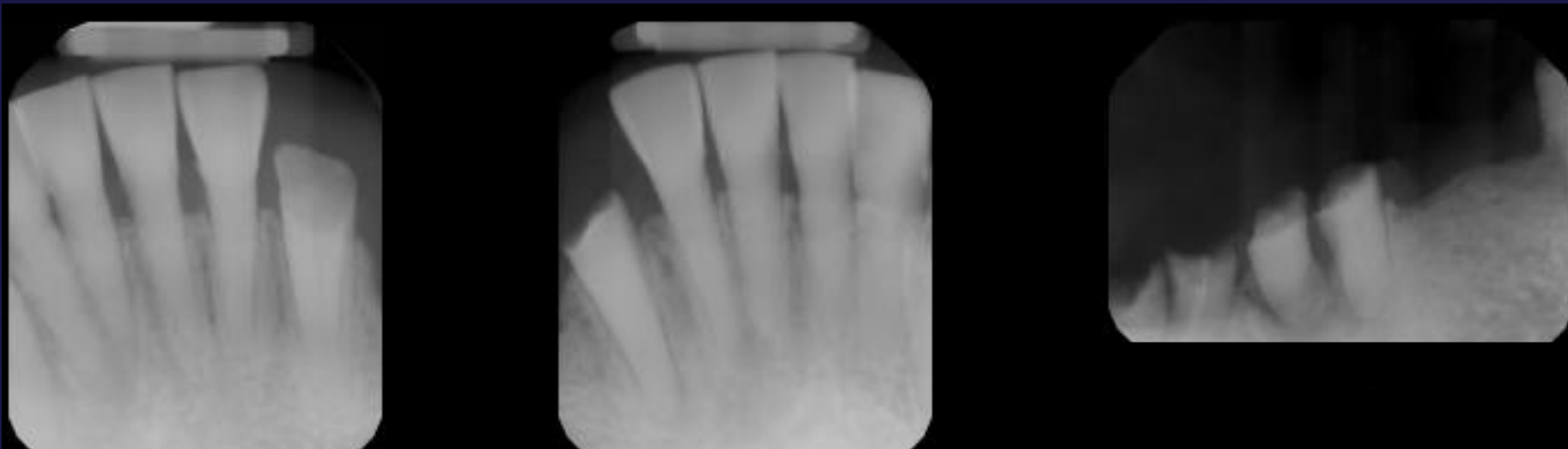


# Medications

- Advair (*Fluticasone Propriionate*)
  - Two puffs daily; one in AM, one in PM.
- Combivent (*Ipratropium Bromide and Albuterol Sulfate*)
  - Up to 4 puffs daily PRN











1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
M	M	M	M	M	M	M	M	M	M	M	M	M	M	M	M
		M	M	M							M	M	M	M	M
32	P 31	30	29	28	27	26	25	24	23	P 22	21	20	19	18	17
3 3 3	3 4 3				2 1 2	2 1 2	3 1 3	3 1 3	3 1 3	2 1 2					
3 3 3	3 3 3				1 2 2	3 2 3	3 2 3	3 2 3	3 2 3	2 2 2					

### Tooth Anomalies:

Missing #s 1-16, 17-21, 28-30  
Fractured #22, 27, 31, and 32.

### Prosthodontic Analysis:

Ill-Fitting U Complete Denture\*  
Ill-Fitting L Partial Denture

### Periodontal Diagnosis:

Generalized Slight Chronic Periodontitis  
Stage IV, Grade A  
Mucogingival Involvement of #22



# Combination Syndrome

- Caused by presence of opposing lower anterior natural teeth to an anterior maxillary edentulous area.
- Increased alveolar bone resorption on edentulous area
- Overgrowth of tuberosities\*
- Extrusion of lower anterior teeth
- Loss of bone under denture bases
- Inflammatory papillary hyperplasia of hard palate<sup>1</sup>
  - Flabby Ridge





## Flabby Ridge

“Mobile soft tissue present on the superficial aspect of the alveolar ridge.”<sup>2</sup>

### Problems Associated:

- Poor impression
  - (Mucodisplaced state)
- Poor Denture Fit
  - Constructed w/ flabby tissue in distorted state



Alternative Tx Option – Surgical “debulking”\*

# Comprehensive Tx Plan

Patient was concerned about cost, esthetics, and timeliness.

## Phase I – Immediate Phase

1. Extract #22, 27, 31, 32\*

## Phase 2 – Disease Control

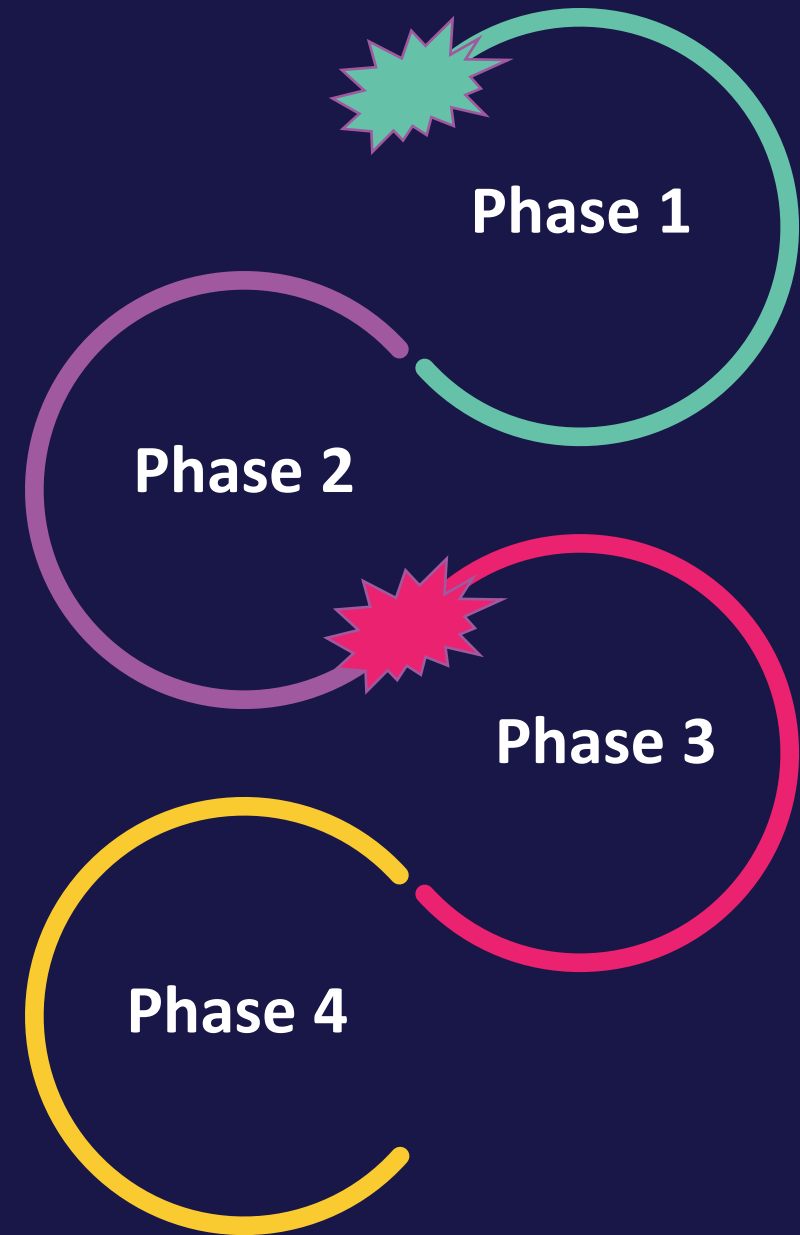
2. Prophylaxis

## Phase 3 - Rehabilitative

3. Transitional Resin Lower Partial\*
4. Re-make Upper Complete Denture
5. Re-make Lower Cast Metal Partial Denture

## Phase 4 - Maintenance

6. 3-Month Recall Periodontal Interval



# Alternative Tx Plan

## Phase I – Immediate Phase

1. Extract #22, 27, 31, 32\*

## Phase 2 – Disease Control

2. Prophylaxis

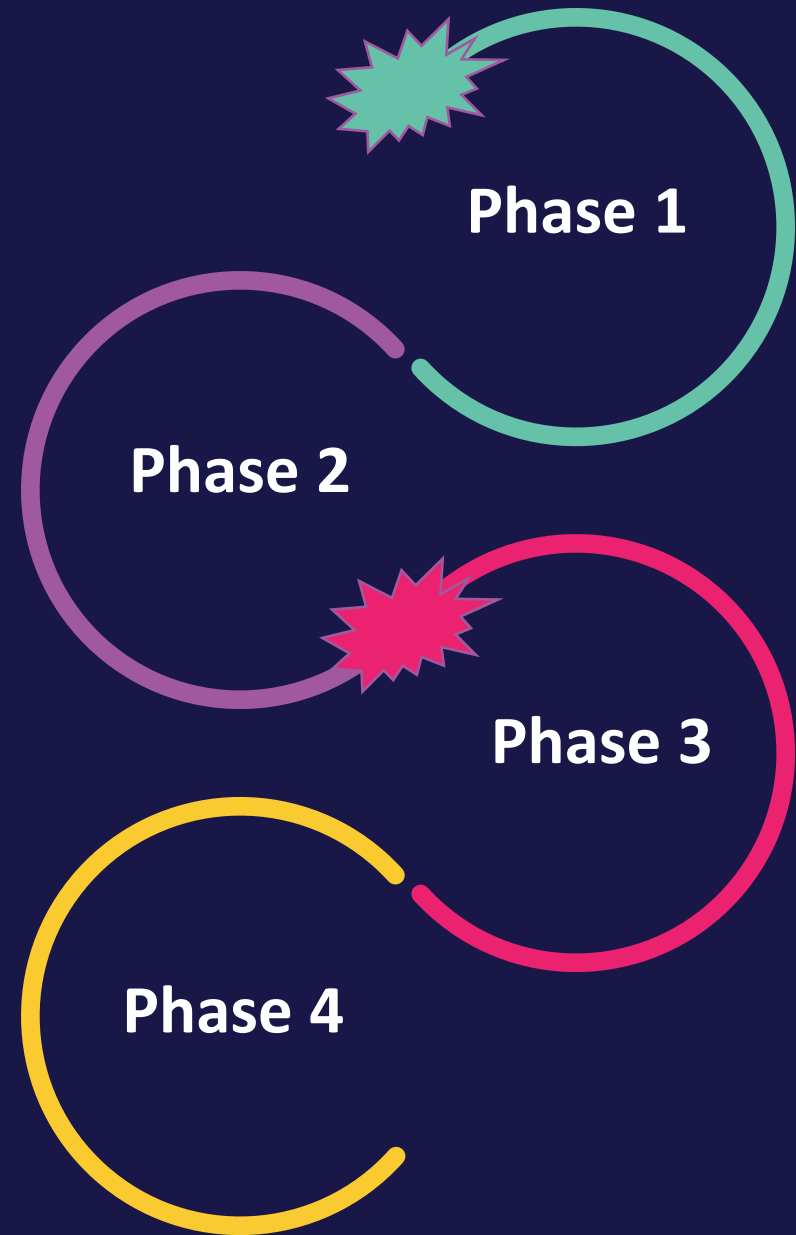
## Phase 3 - Rehabilitative

3. Transitional Resin Lower Partial\*
4. Re-make Lower Cast Metal Partial Denture

## Phase 4 - Maintenance

5. 3-Month Recall Periodontal Interval

Patient declined any implant therapy or surgery



# Osteoradionecrosis



- Bone's inability to heal properly due to radiation.
- "Triple H effect": hypovascularity, hypoxia, and hypocellularity.<sup>3</sup>
- Tooth extraction: one of the main risk factors for the development of osteoradionecrosis (ORN).
- TWO THINGS TO NOTE: 1) DOSE TO BONE, 2) FIELD



# 1. DOSE TO BONE

- 4,000 cGy - Irreversible salivary gland damage
- 5,500 cGy= Osteoradionecrosis.<sup>4</sup>

<b>Total Dose (cGy)</b>
<b>1,800</b>

Kaiser Permanente South San Francisco  
Cancer Treatment Center  
TECHNICAL TREATMENT SUMMARY

Patient Name: [REDACTED] MRN: [REDACTED]  
Date of Birth: [REDACTED] Gender: [REDACTED]

Radiation Oncologist: [REDACTED]  
Referring Physician: [REDACTED]

ICD-Code: Primary D33.3 - Benign neoplasm of cranial nerves Right side  
Stage: ,

Treatment Summary:  
Course: C1

Treatment Site	Energy	Dose/Fx (cGy)	#Fx	Total Dose (cGy)	Start Date	End Date	Elapsed Days
R Acoustic	6X	600	3 / 3	1,800	5/1/2018	5/3/2018	2

Physicist Comments:

Treatment was completed as prescribed.

Physician Comments:

SRS to R acoustic, 1800 cGy in 3 fractions, 79% IDL, 7.8cc,

[REDACTED]

[REDACTED]





# 2. FIELD

Resolution High

Calculate

Prescription

Prescription

Reference Point

Use max dose point

Dose (cGy) 2278.48

Point Go to >>

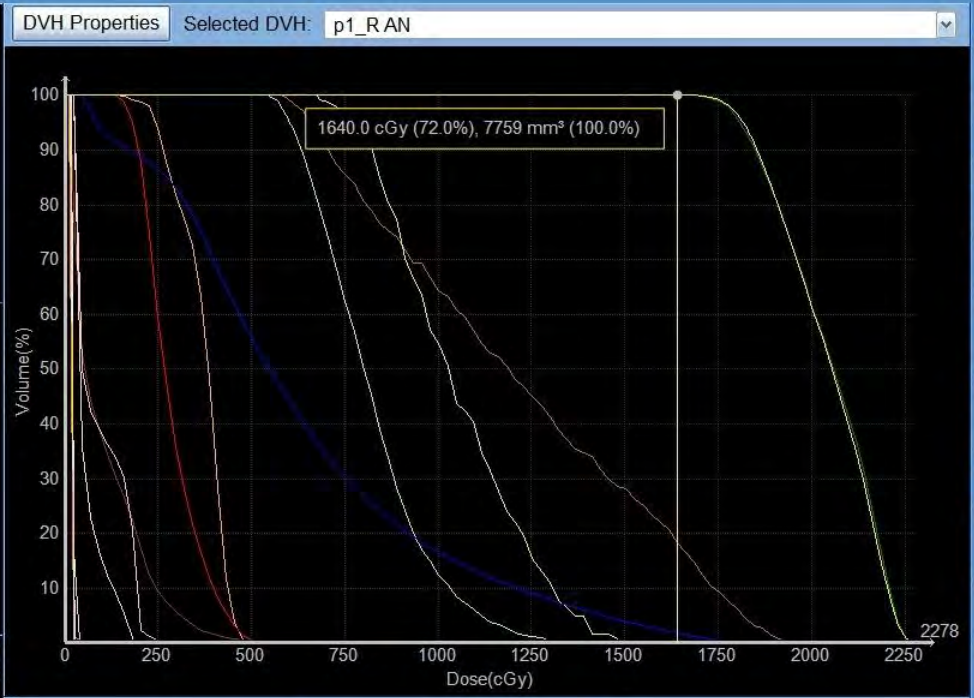
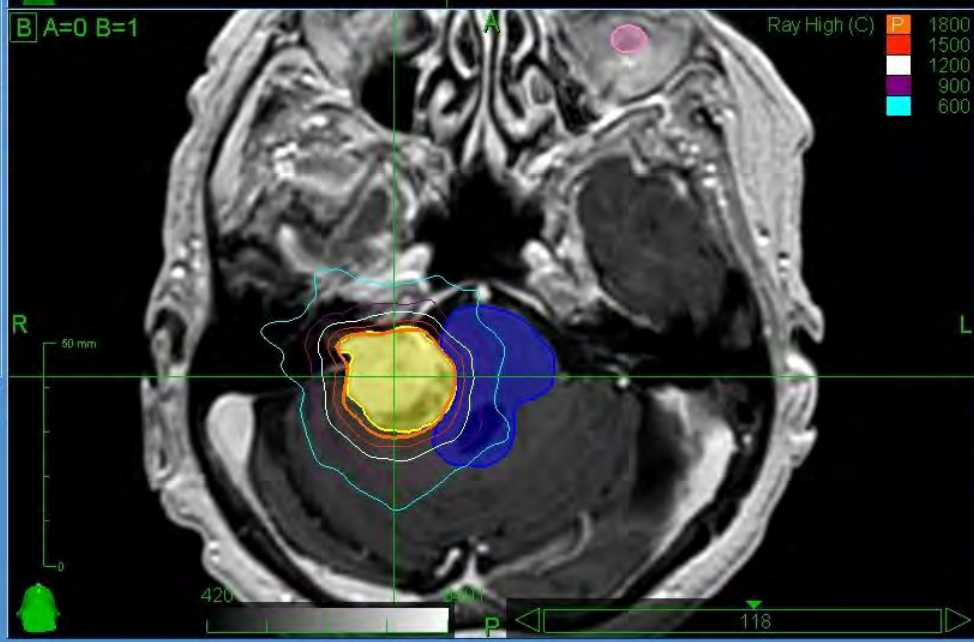
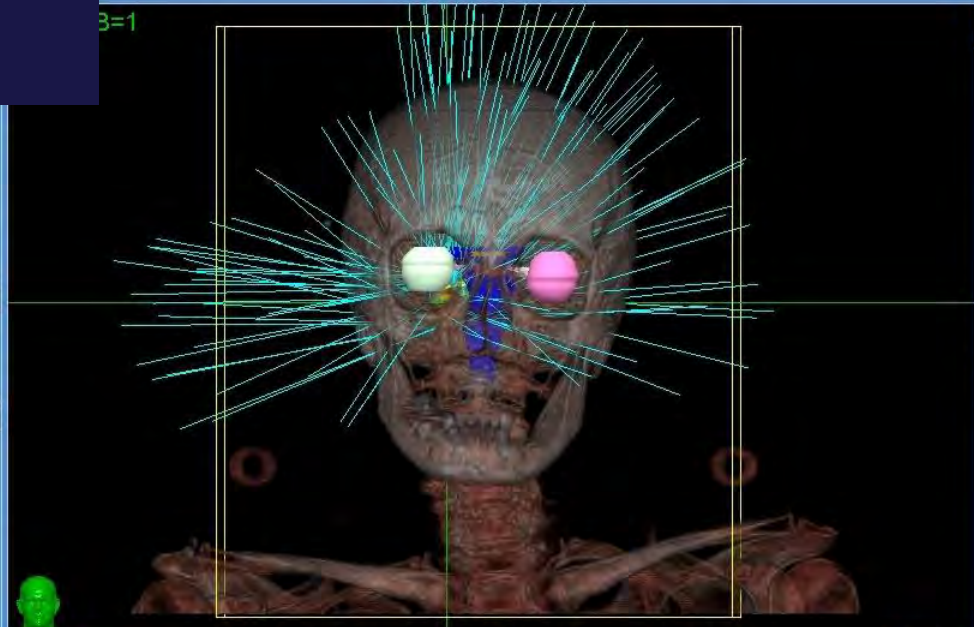
-29.10,16.41,-26.25

Set to Cross-hair Point

Save Plan

Save Plan

Standard Display



Nodes	83	Beams	121
Total MU	17103.5	Min MU	23.8
Max MU	185.0	Max Dose (cGy)	2278.48
Estimated Treatment Time Per Fraction (minutes)	31		

Dose Statistics Table

Name	Min (cGy)	Mean (cGy)	Max (cGy)	CI	nCI	HI	Coverage (%)
p1_RAN	1626.31	2039.26	2278.48	1.08	1.12	1.27	96.42
OpticChiasm	133.49	367.18	485.31	n/a	n/a	n/a	n/a
Pituitary	126.34	282.81	513.24	n/a	n/a	n/a	n/a
CN5	581.17	1205.84	1936.65	n/a	n/a	n/a	n/a
Ear_Inner	543.70	817.08	1314.04	n/a	n/a	n/a	n/a
Modiolus	676.61	1041.66	1491.79	n/a	n/a	n/a	n/a
BrainStem	40.62	626.49	1884.28	n/a	n/a	n/a	n/a
OpticNrv_L	23.16	54.82	189.58	n/a	n/a	n/a	n/a
OpticNrv_R	25.29	90.65	265.62	n/a	n/a	n/a	n/a
Eye_L	16.12	19.62	25.57	n/a	n/a	n/a	n/a
Eye_R	16.18	20.34	26.40	n/a	n/a	n/a	n/a

Patient

Plan

C1\_P1\_F

27 Apr 2018, 11:17:12 AM

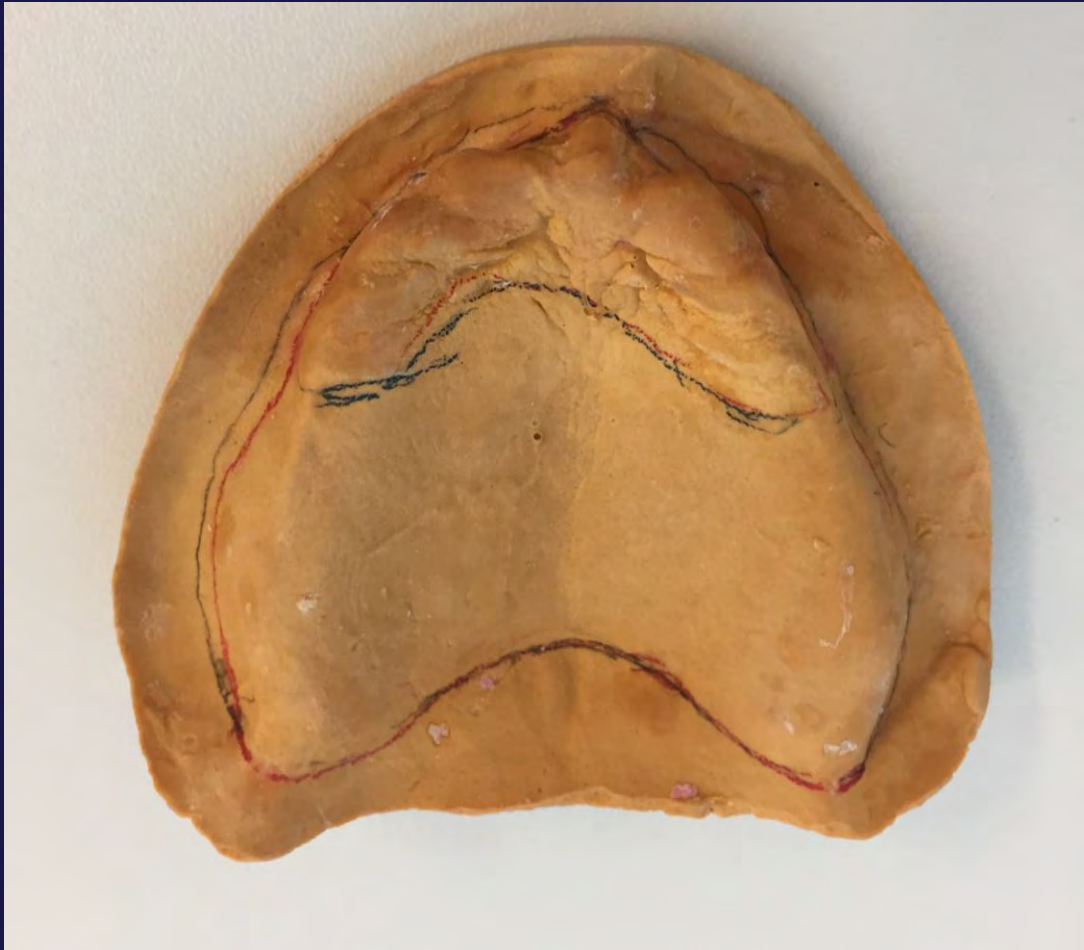
Rx

79%, 1800.00 cGy











## Case Report

# Management of flabby ridge case: An arduous task in undergraduate practice

Jnanashree Chiplunkar, Masrie Tumbil, Chethan MD, Nandeeshwar DB, Disha Patel

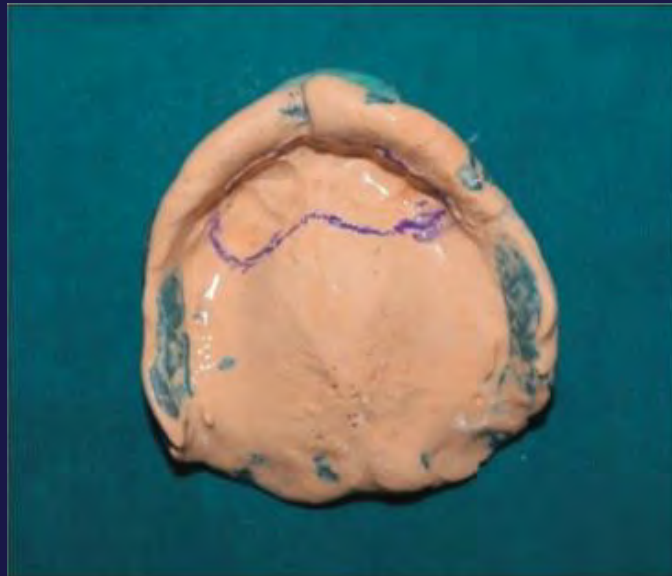
Department of Prosthodontics and Crown and Bridge, Bapuji Dental College and Hospital, Davangere, Karnataka, India

### Abstract

A fibrous or flabby ridge is a superficial area of mobile soft tissue affecting the maxillary or mandibular alveolar ridges. It can develop when hyperplastic soft tissue replaces the alveolar bone and is a common finding particularly in the upper anterior region of long-term denture wearers. Masticatory forces can displace this mobile denture-bearing tissue, leading to altered denture positioning and loss of peripheral seal. Unless managed appropriately, such "flabby ridges" adversely affect the support, retention, and stability of complete dentures. Many impression techniques have been proposed to help overcome this difficulty. This paper presents case report for prosthodontic rehabilitation of a patient with flabby ridge with McCord and Ahmad impression technique.

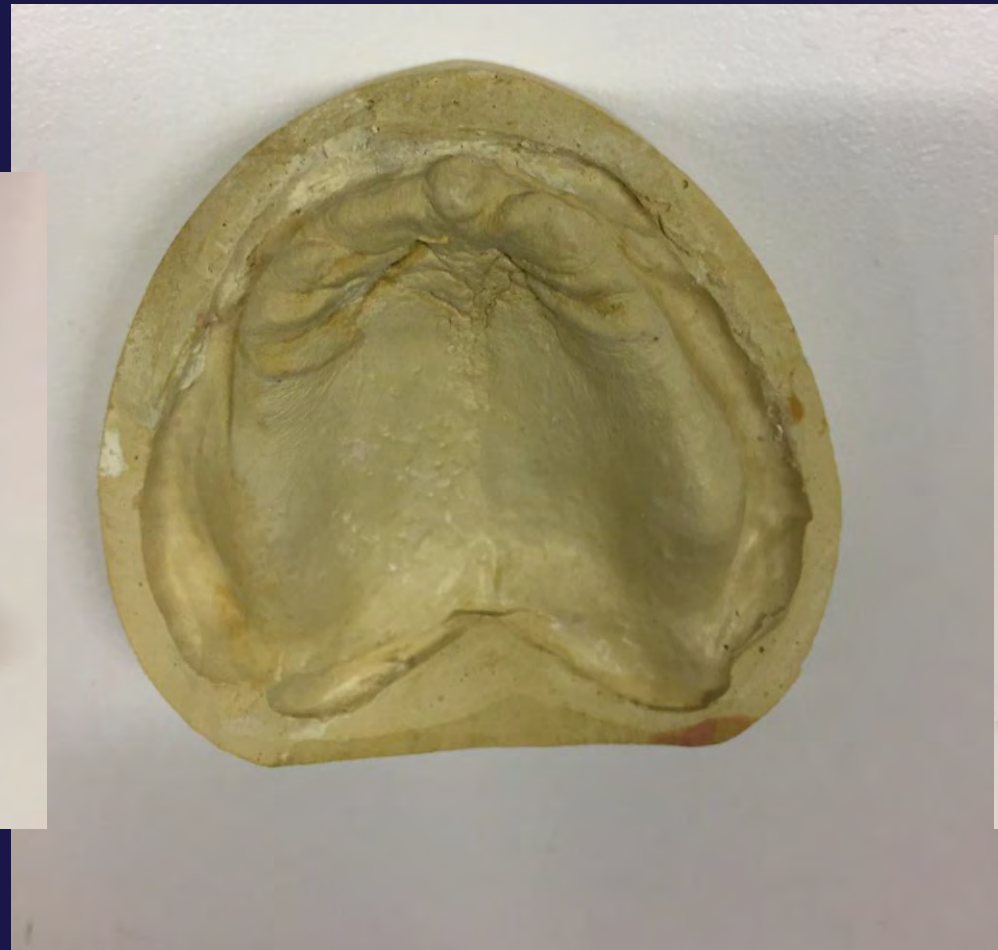
**Keywords:** Flabby ridge, hyperplastic soft tissue, McCord and Ahmad technique

# Window Impression Technique

















# 12

## Tooth preparation

J. C. Davenport,<sup>1</sup> R. M. Basker,<sup>2</sup> J. R. Heath,<sup>3</sup> J. P. Ralph,<sup>4</sup>  
P-O. Glantz,<sup>5</sup> and P. Hammond,<sup>6</sup>

This final article in the series describes the modification of teeth to improve their shape for the support and retention of RPDs.

In this part, we will discuss

- Rest seats
- Guide surfaces
- Correction of unfavourable survey lines
- Creating retentive areas



*Fig. 12 — Rest seats on anterior teeth*

Incisal rest seats can be prepared using a tapered cylindrical diamond.

Alternative, more aesthetic options are to produce a rest seat in composite applied to the cingulum area of the selected tooth, or to bond a cast metal cingulum rest seat to the tooth.





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Year: 2011

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In vivo testing of resin-bonded composite rest seats for removable partial dentures

Phuong Leuthold, S

Results. None of the RBCRSs broke off or detached after loading in the CoCoM. The overall flexure load at failure was  $1124.4 \pm 295\text{N}$ , the flexure load at failure of group 2 being significantly larger than group 1 ( $p < 0.05$ ). The flexure load at failure was independent of the bonding surface area.

Conclusions. The RBCRS withstood the thermal and mechanical stress in vitro during a simulated exposure to chewing load up to 10 years.

The main finding of the study was that all bonded rest seats withstood the thermocycled loading for a testing period corresponding to chewing during 5 years with a loading force of 75N and of 10 years with a loading force of 49N. These loading forces were chosen based on data reporting that the occlusal forces developed during chewing in dentate and partially dentate subjects lie below 80N (DeBoever 1978; Graf 1975) and 27N respectively (Yurkstas and Curby 1953; Maxfield et al. 1979).



# Influence of Bonded Composite Resin Cingulum Rest Seats on Abutment Tooth Periodontal Tissues: A Longitudinal Prospective Study

Yoshinobu Maeda, DDS, PhD<sup>a</sup>/Yoshiko Kinoshita, DDS<sup>b</sup>/Hanako Satho, DDS<sup>c</sup>/Tsung-Chieh Yang, DDS<sup>d</sup>

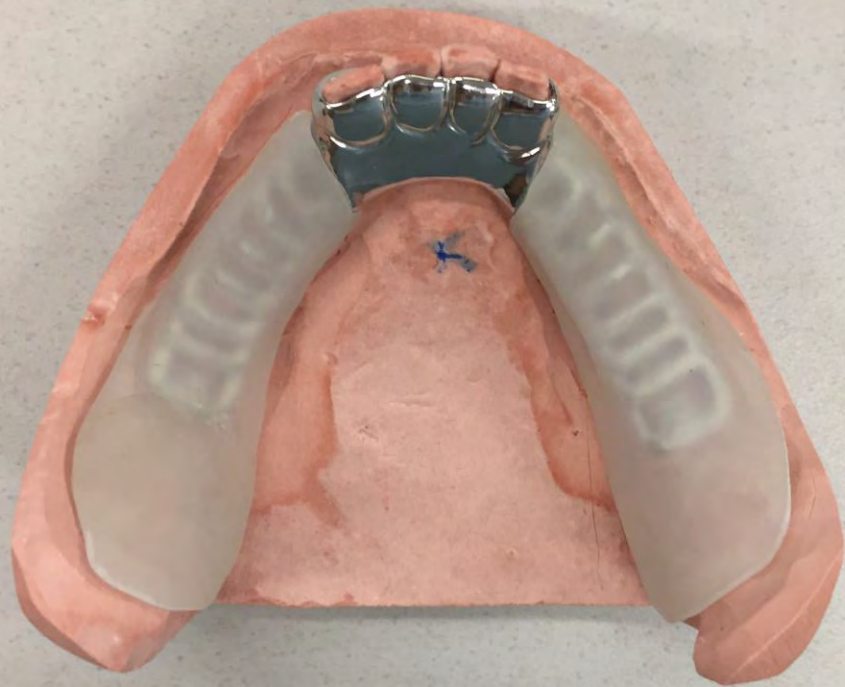
This study aimed to examine the longitudinal influence of bonded composite resin cingulum rest seats on abutment tooth periodontal tissues in removable partial dentures (RPDs). Twenty-eight patients with RPDs were enrolled in the study. Thirty-one cingulum rest seats were prepared for an anterior tooth using composite resin and a standardized method for each patient. Periodontal indices such as probing pocket depth (PD), bleeding on probing (BoP), and tooth mobility (TM) were measured at the time of denture insertion (baseline) and at least 3 months postinsertion (up to 8 years). Control data were obtained from the remaining nonprepared anterior teeth on the other side of the arch. None of the bonded resin rest seats failed, but slight abrasion was observed in 3 rest seats. No significant differences were found in terms of PD, BoP, and TM between baseline postinsertion data for abutments with bonded resin rest seats and suggested that bonded composite resin cingulum rest seats can be used longitudinally without damaging the periodontal tissues of abutment teeth. *J Prosthet Dent* 2008;21:37-39.

## **Bonding Failure**

There were no incidents of bonding failure among the 31 rest seats, with minimal discoloration around the margin area of the bonded resin. Discoloration was observed along the marginal area of 2 rest seats, while abrasion was observed in 3 rest seats. No cracking or chipping was observed.









“

“A person who never made a mistake never tried anything new.”



# Works Cited

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- <sup>4</sup> Barker BF, Barker GJ. Oral management of the patient with cancer in the head and neck region. *J Calif Dent Assoc.* 2001. 29:619–623.
- <sup>5</sup> Chiplunkar, Jnanashree & Tumbil, Masrie & Chethan, MD & Nandeeshwar, DB & Patel, Disha. Management of flabby ridge case: An arduous task in undergraduate practice. *International Journal of Oral Health Sciences.* 2018. 104. 10.4103/ijohs.ijohs\_41\_18.
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- <sup>7</sup> Leuthold, S. In vivo testing of resin-bonded composite rest seats for removable partial dentures. 2011. 10.5167/uzh-52868.
- <sup>8</sup> Maeda Y, Kinoshita Y, Satho H, Yang T. Influence of bonded composite resin cingulum rest seats on abutment tooth periodontal tissues: a longitudinal prospective study. *Int J Prosthodont.* 2008: 21:37-39.



# THANK YOU!

Thank you for your time and consideration!