

SFOT

***Expanding treatment opportunities. Alternative options
for skeletal & dental problems. The grey zone.***

Identifier: 37 year old Nurse-Educator

Chief complaint: "I am here because my dentist is concerned about my gum recession. I know I have a bad bite and have been to several orthodontists but am not willing to have jaw surgery to correct it"

Medical history: Scoliosis, spinal fusion in 1987. Family history of HTN & NIDDM. History of polysomnogram (WNL)

Dental history: Previous orthodontic therapy (adolescent). 1st premolar extraction case with 3rd molars kept. History of NSRCT #14, 30. History of CT grafting in 2003 (max R).

Current medications: None

Physical status classification: ASA I

Initial Exam

Generalized Recession



Malocclusion

Initial Exam



narrowed palate

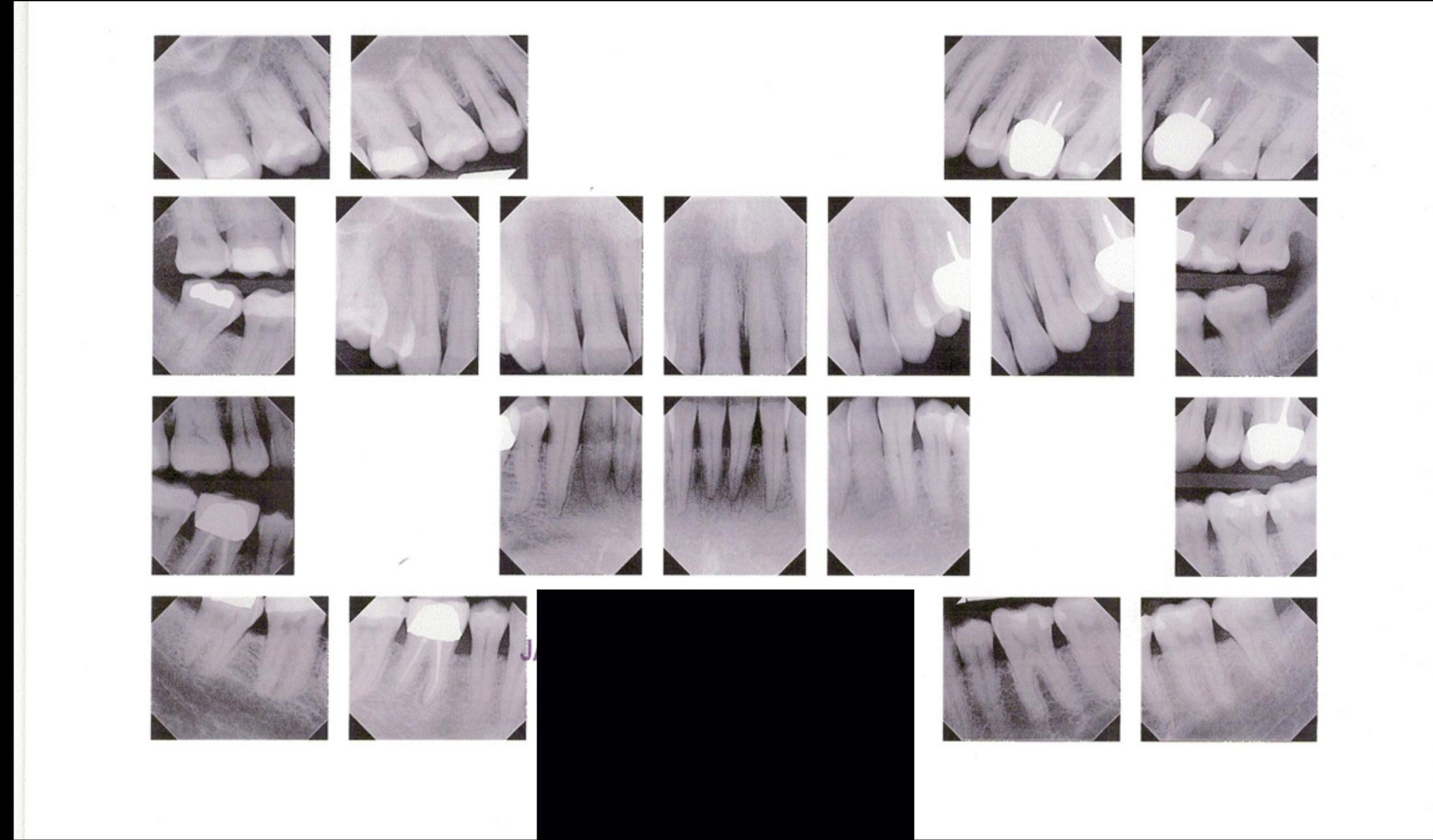


**constricting mandibular archform
tongue space?**

Occlusal views

Radiographs

Full Mouth Radiographs



Attachment Loss
Non Pocketing Form

Typical Treatment Plan

Problem

Gingival recession
Mucogingival abnormalities



Free gingival grafts or connective tissue grafting before or after tooth movement

Skeletal & dental malocclusion



Pre-surgical Ortho.
SARPE Orthognathic Surgery

Assessment of Dentoalveolar bone?
Periodontal risk assessment?



Possible medicolegal related periodontal consultation to OK tooth movement.

Management

Skeletal Based Problems

Alveoloskeletal Compensations

Cause for change

Evidence Based Approach

Scientific Literature

ORIGINAL ARTICLE

AJO-DO

Periodontal effects of surgically assisted rapid palatal expansion evaluated clinically and with cone-beam computerized tomography: 6-month preliminary results

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Introduction: Transverse maxillary deficiency is frequently observed in patients who seek orthodontic treatment. In skeletally mature patients, transverse maxillary deficiency can be treated with surgically assisted rapid palatal expansion (SARPE). Forces delivered by the expander produce areas of compression in the periodontal ligament, which could lead to alveolar bone resorption and possible changes in the attachment level. The aim of this prospective clinical study was to evaluate the periodontal effects of SARPE by means of a complete clinical evaluation and cone-beam computerized tomography (CBCT) evaluation. **Methods:** The sample included 14 patients (5 males, 9 females), with a mean age of 23.0 ± 1.9 years (range: 16.4 to 39.7 years). All patients were treated using a bonded Hyrax-type expander, and the mean expansion was 9.82 mm (7.5 to 12.0 mm). All patients had a 1-year retention period. CBCT scans were taken, and periodontal charts were completed at time points T0 (initial) and T1 (6 months after expansion). **Results and Discussion:** SARPE seemed to have little detrimental clinical effects on the periodontium. Radiographic data demonstrated statistically significant changes: a significant decrease in the buccal alveolar bone thickness on most teeth, a significant increase in the palatal alveolar bone thickness on most teeth, a decrease in the buccal alveolar crest level of all canines and posterior teeth, and a tendency toward a decrease in the interproximal alveolar crest level on the mesial aspect of both central incisors. **Conclusions:** SARPE seems to have little detrimental effects on the periodontium clinically. However, radiographic data demonstrated some statistically significant changes, which could eventually have a significant clinical impact on the periodontium. (Am J Orthod Dentofacial Orthop 2011;139:S117-28)

14 patients (5 male, 9 female). Average age= 23
Periodontal examination. CBCT analysis.

Orthodontic therapy using a Hyrax-type expander

Surgically Assisted Rapid Palatal Expansion Surgery (SARPE)

Mean expansion= 9.82mm (range= 7.5-12mm)

1 year retention period

Periodontal examination. CBCT analysis @ initial
examination and at 6 months after expansion.

Clinical Outcome: No attachment loss. Healthy periodontium

CBCT Outcome: Decrease in buccal alveolar bone thickness by **55%**

Decrease in interproximal alveolar crest height

Imaging

CBCT Evaluation

FOV too limited

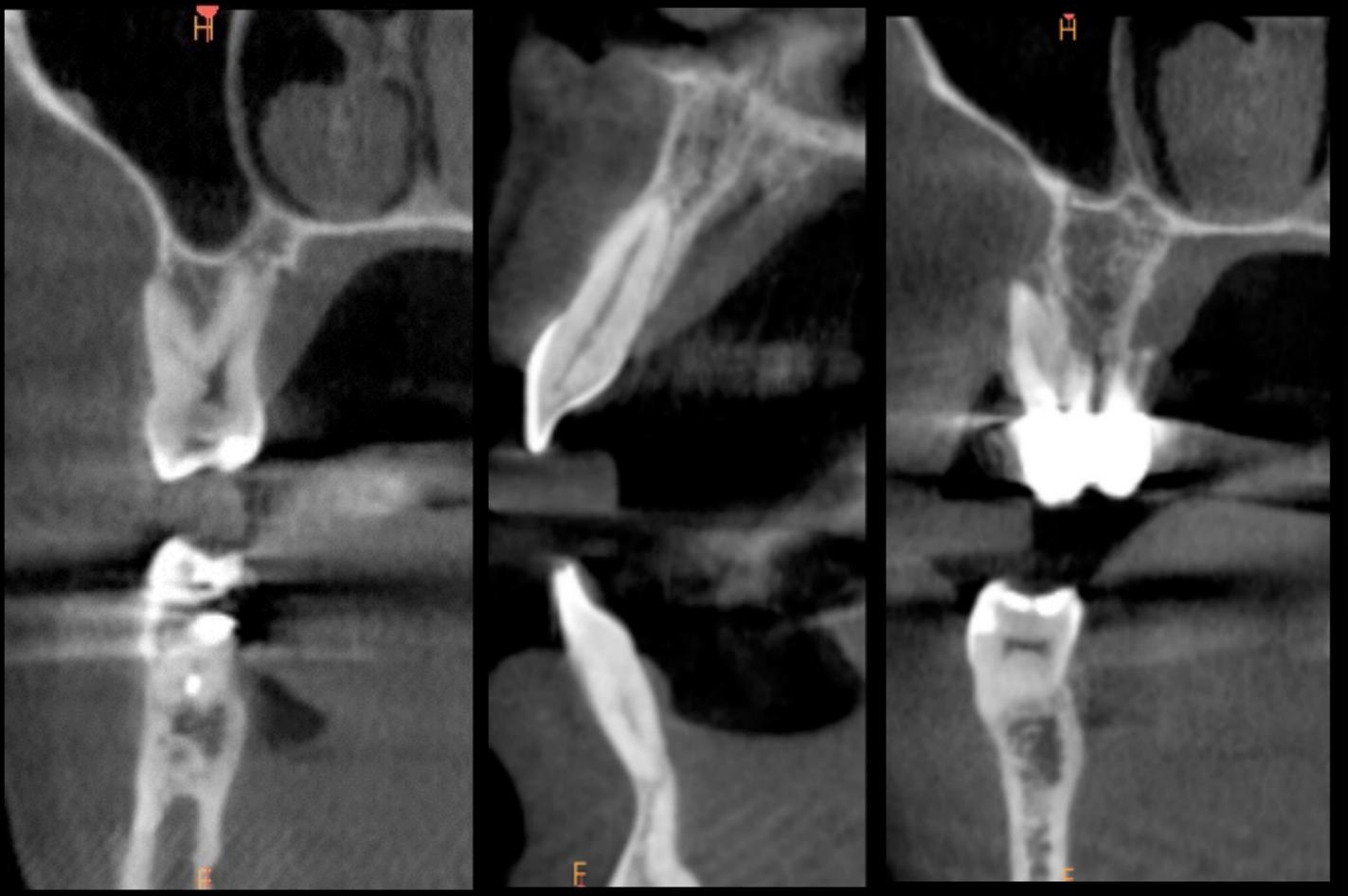
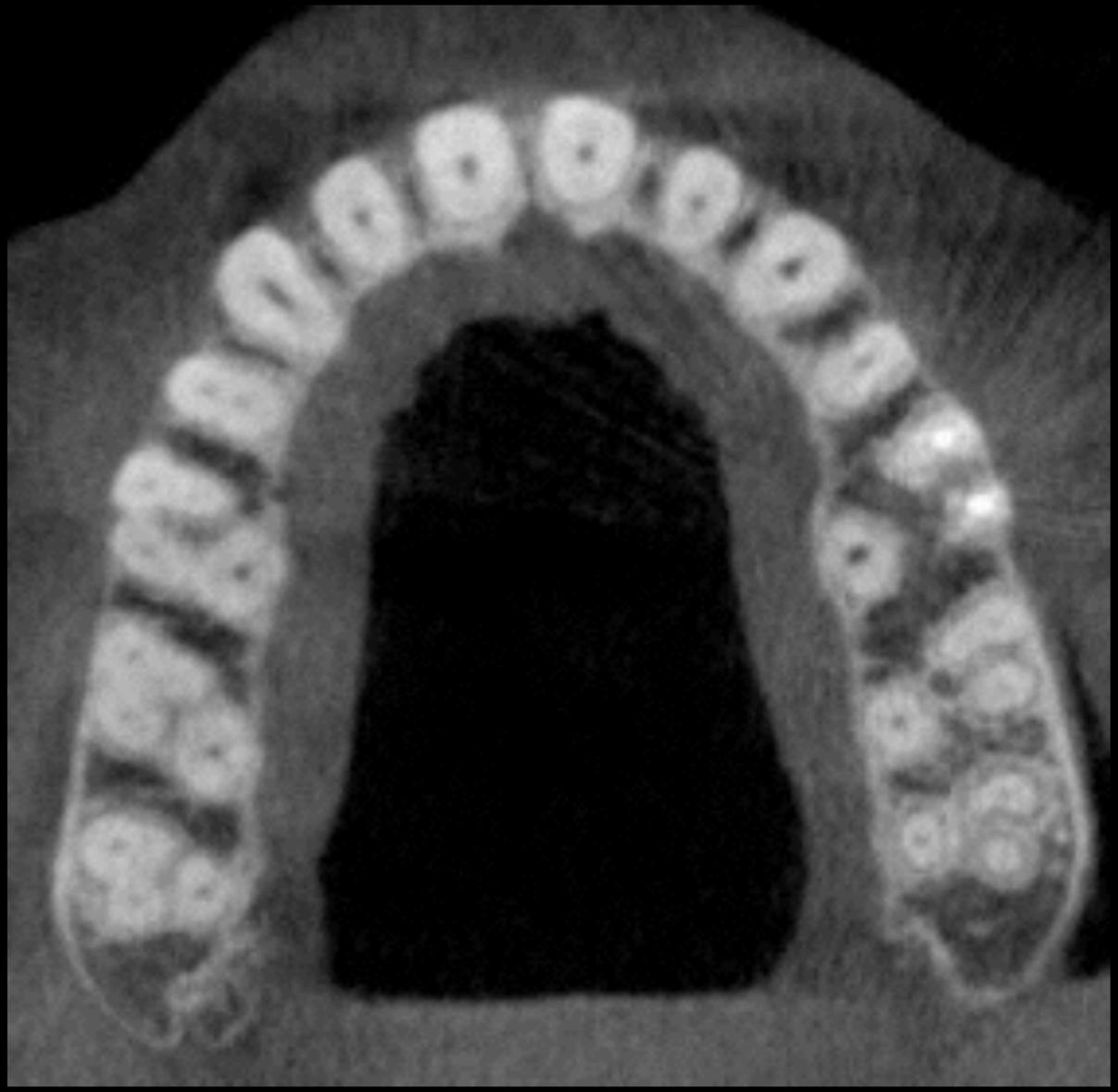


assessment

3D CranioMandibular

Imaging

Anterior Tooth Relationship



*Facial Bone Analysis
Dentoalveolar Bone Phenotype
Risk Assessment*

SFOT Treatment Plan

Problem

Gingival Recession

Anterior open bite
third molars

Thin crestal & radicular
dentoalveolar bone phenotype

Dentoalveolar and
Alveoloskeletal discrepancies

Skeletal & dental malocclusion

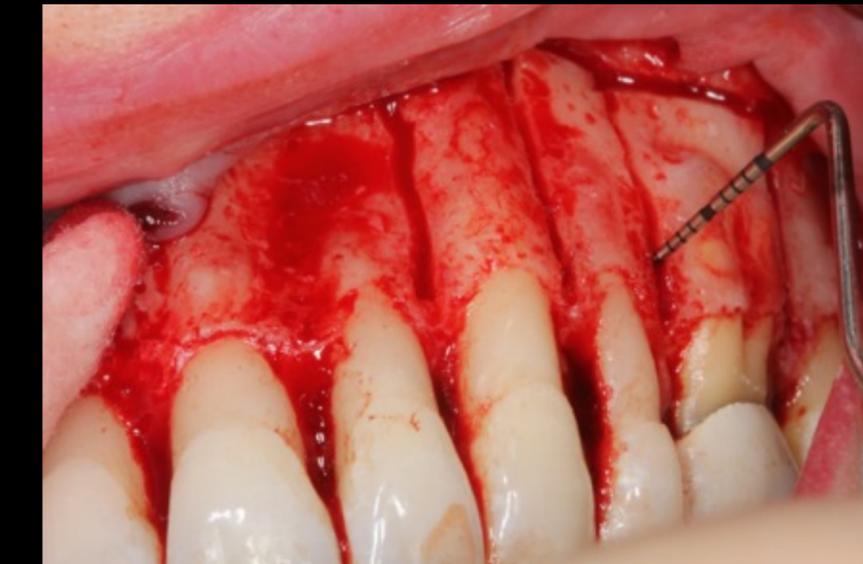
Management

Root coverage
Mucogingival Augmentation

Third Molar Extraction

S F O T

Orthognathic
Surgery



SARPE?
The Grey Zone

Leveling the playing field

"Change the way you look at things, and the way you look at things change"

Wayne Dyer

- Mandible:
- Evaluation of mandibular incisor position.
 - Axial inclination ~25 degrees. 4mm ahead of N-B line?
 - Location and angulation of lower incisor position does not require SFOT entirely.
 - Asymmetry in left ramus height requiring orthognathic correction. Trauma? Developmental? Non-pathologic.

- Maxilla:
- Significant alveoloskeletal discrepancy (posterior)
 - Narrow arch form
 - Lack of dentoalveolar bone to correct crossbite.
 - SARPE or SFOT + soft tissue augmentation



Comparison

**Initial
Exam**



*12 Months Post SFOT Maxilla
18 Months Post Surg Mandible*

**Treatment
Complete
Exam**



Comparison

**Initial
Exam**



**Treatment
Complete
Exam**



Panoramic Comparison

2011



2013

