Posterior Bite Collapse: Development of a Clinical Decision Algorithm – Part I

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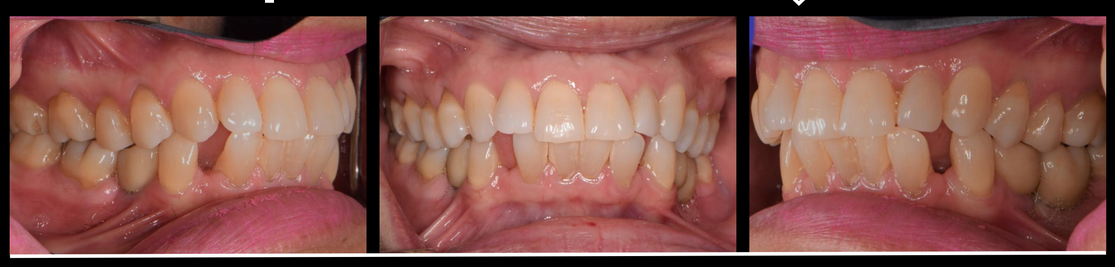
References:

Patient 1 presentation:

Grading Score: 5 – **Moderate** PBC

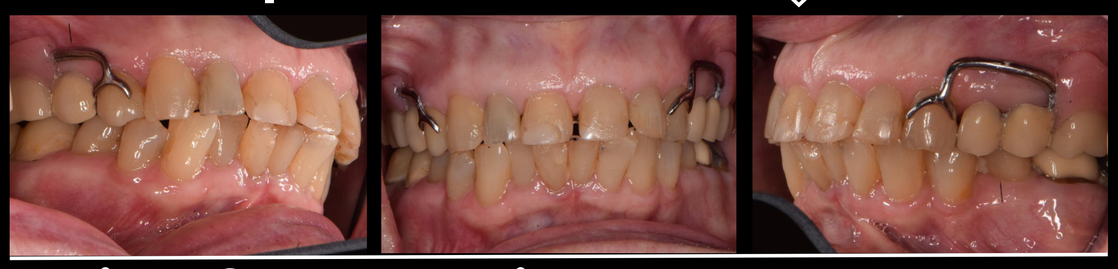
Patient 1 phase II treatment: ⇩



Patient 2 presentation:

Grading Score: 8 – **Moderate** PBC

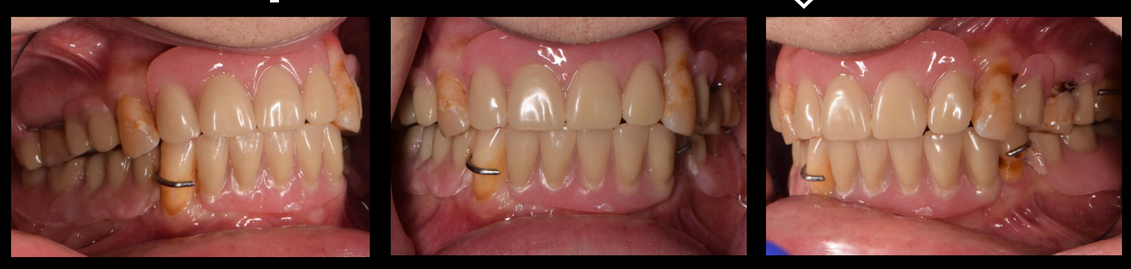
Patient 2 phase II treatment: ⇩



Patient 3 presentation:

Grading Score: 10 – **Severe** PBC

Patient 3 phase I treatment: ⇩



Background

Posterior bite collapse (PBC) or "Posterior overclosure", first described by Amsterdam and Abrams in 1964, is a multi-factorial and progressive clinical phenomenon characterized by **reduced posterior support**, frequently associated with **missing mandibular first molars**, and resultant **anterior teeth flaring**. Currently, PBC lacks universally accepted diagnostic criteria and standardized treatment guidelines. Consequently, **the condition may go unrecognized in its early stages**. If untreated or mistreated, progressive structural deterioration may occur, complicating future rehabilitation.

Case description

Three female patients (aged 55, 65, and 81 years), who presented to the University of Toronto Graduate Prosthodontics clinic exhibiting varying stages of PBC. Their **chief concerns** included compromised chewing function and esthetics. **Clinical findings** included reduced **posterior support**, reduced **occlusal vertical dimension** (OVD), **pathologic tooth migration** (PTM), **irregular occlusal planes**, **parafunctional habits**, and **periodontal disease**.

Treatment followed a staged approach initiated by phase I therapy addressing periodontal disease, caries, and hopeless teeth extraction. Definitive rehabilitation was subsequently individualized to restore form and function based on condition severity and patient-specific factors.

Objective

To propose **a new grading system for PBC**:

The 6 P's of Posterior bite collapse – A new grading system:

Grading	* Pathologic tooth migration (PTM) / Malocclusion	Physiologic occlusal vertical dimension (OVD)	Parafunctional habits	Plane of occlusion irregularity	* Posterior support	Periodontal status
0	None	Within normal limits	No	Within normal limits	Intact	Stable
1	Localized	Compensated	Mild	Localized irregularity	Partial / unilateral loss	Stage I-II Periodontitis
2	Generalized + anterior flaring	Reduced/ Decompensated	Severe	Generalized irregularity	Bilateral loss	Stage III-IV Periodontitis

* **PTM / Malocclusion and Posterior support grading scores of 1≤ are pre-requisites for PBC diagnosis.**

0-4 – Mild PBC **5-8 – Moderate PBC** **9-12 – Severe PBC**

Conclusions

This grading system is intended to support clinicians in management of patients with potential PBC. A clinical decision algorithm will be developed based on this grading system. **Treatment comprehensiveness should follow grading severity**. Nevertheless, patient specific factors should be evaluated within the decision-making process.